Developing homes for a changing climate

NEXT GENERATION

A PARTNERSHIP TO DELIVER SUSTAINABLE HOMES FOR 21ST CENTURY LIVING

Benchmarking how UK home builders are responding to climate change risks and opportunities

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WWF

Insight INVESTMENT
HBOS plc

BANK OF SCOTLAND CORPORATE

HOUSING CORPORATION

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Real value in a changing world

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Executive summary

Introduction

The housing market is now very different compared with when NextGeneration (see Box A) reported its results of the sustainability performance of the top 20 UK homebuilders in autumn 2007. Without a doubt, UK homebuilders are facing the most difficult period since the market crash of the early 1990s, with stories of tumbling share prices, widespread sector job losses and consumer turmoil resonating through the media on a daily basis over the last few months.

The economic downturn currently being experienced has been mirrored by energy price hikes, widespread discomfort within the investment community about their investments in homebuilders, and a natural tension between the affordability and environmental agendas of the government. The target set by government for the industry to achieve zero-carbon housing from 2016 onwards has not been postponed or weakened, and is as important as ever if the government is to achieve its broader commitments to reducing the UK's effect on climate change.

This report is an assessment of the approach of the top 20 UK homebuilders – a group who last year built over 60% of new homes – to addressing climate change mitigation and adaptation issues. With our homes producing at least 27% of total UK carbon emissions, and the energy, water and material intensive nature of the construction industry, the longer term imperative to continue to progress towards a more sustainable built environment has not disappeared in light of the current market meltdown; indeed it is only likely to become more pressing.

The environmental and affordability targets set out by the government for the sector will be much more difficult to achieve given the economic challenges the country and the industry now face. The government must be willing to consult with industry on how these challenges can be overcome within the wider policy remit to deliver another three million homes by 2020. It is critical that the government continues to support, invest in and foster innovation while the housing market is stagnant and opportunities to achieve stretching targets recede.

Box A: NextGeneration

NextGeneration was launched in 2006 to build on the success of the Insight Investment and WWF sustainability benchmarking exercises (undertaken in 2004 and 2005) and to expand their reach and ownership.

Set up as a multi-stakeholder initiative, NextGeneration aims to drive best practice on sustainability into the heart of the residential sector by encouraging the industry itself to embrace more sustainable house designs and delivery. It is intended to be a platform through which developers can both identify the sustainability-related risks they face and develop a good understanding of how best to address the related opportunities.

NextGeneration is supported and directed by The Housing Corporation, WWF-UK, Insight Investment and the Bank of Scotland, all of whom sit on its executive committee. Upstream (part of Jones Lang LaSalle) acts as a secretariat to the initiative, carrying out the analysis for the benchmarking and delivering a range of services to NextGeneration members.

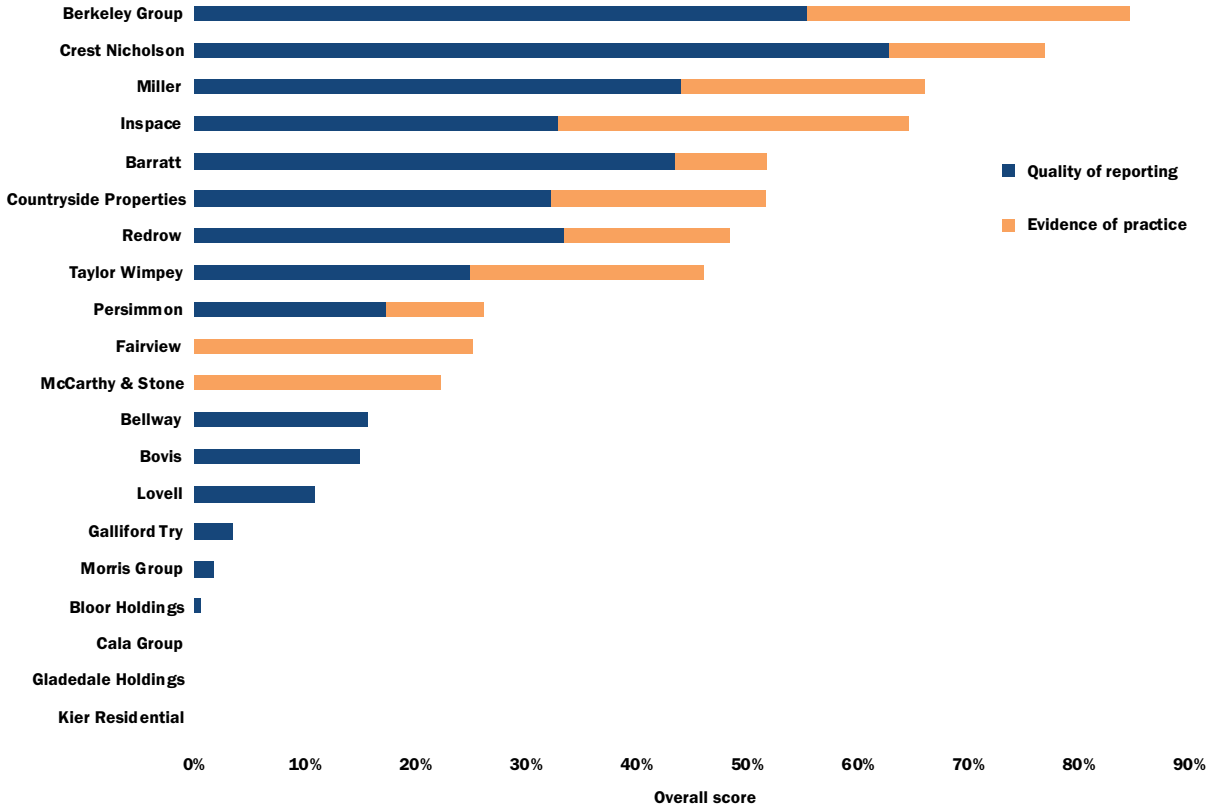
The unique output of NextGeneration is its annual benchmark of the UK's top 20 homebuilders (determined by units built in the reporting year). This year the benchmark focuses solely on climate change issues, different to the wider corporate benchmark undertaken in 2007.

The benchmark incorporates two sets of scores: the first rates the quality of reporting of the sector on climate change issues and the second rates its performance in this area.

Overall results

Two companies have emerged as leaders of this year's benchmark – The Berkeley Group and Crest Nicholson – achieving 85% and 77% respectively.

Figure A: Top 20 overall performance



The results in figure A indicate that many companies have responded proactively to the risks associated with climate change issues. However, the variance in the results presents a picture of an industry that is still grappling with the policies and standards being developed by the government for both the homes it is building and the way it operates its businesses. It is important for the government and the industry to identify how it will work together to fill the gap between now and the key future milestones, given the 'squeezing' of the timetable for delivery of zero-carbon homes in the face of the current halt to operations.

Methodology

Similar to 2007, the benchmarking is undertaken in two phases:

Phase one: A benchmark of the top 20 companies' publicly available information (corporate responsibility reports, annual reports and accounts, corporate websites) to assess their strategy, governance and risk management, and climate change commitment. All companies are awarded a score to reflect the quality of their reporting.

Phase two: Eleven of the top 20 homebuilders have joined NextGeneration as members. Detailed engagement and qualitative evidence review of the members revealed further information about what is going on behind the scenes, in addition to what is reported. Members are awarded a second score to reflect their climate change practice.

A score of 100% in either phase would indicate that it had achieved best practice as defined by the NextGeneration criteria.

Companies are becoming increasingly selective in what information they provide to the public domain, demonstrating the commercial importance of some sustainability issues to business performance. This has been particularly relevant in terms of the cost analysis undertaken by a number of companies to assess building to different levels of the Code for Sustainable Homes (the industry standard for measuring the sustainability of new homes) and to develop a better understanding of the financial implications of addressing their operational impacts, specifically in relation to energy and waste.

Why benchmark climate change?

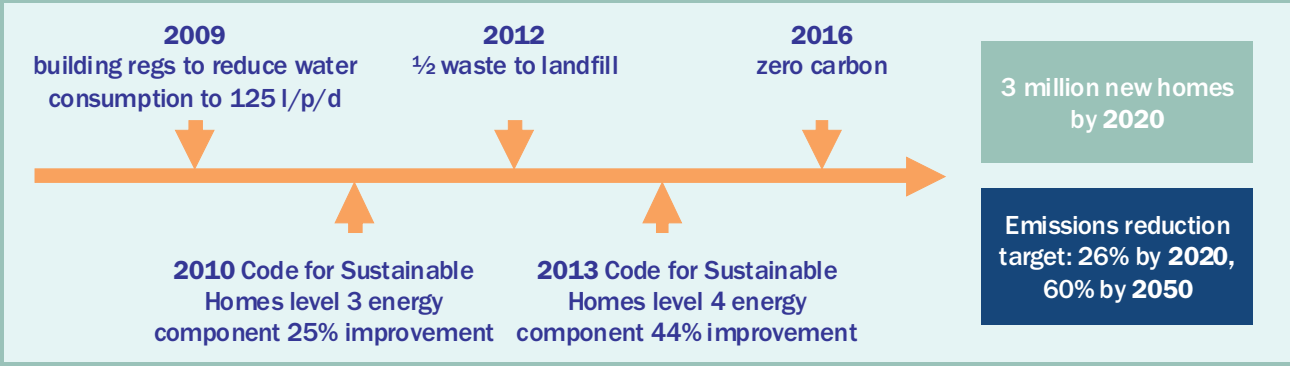
In November last year, as the Bank of England was reporting that mortgage approvals had reached a three-year low, the Intergovernmental Panel on Climate Change (IPCC) published the final part of *Climate Change 2007*, the IPCC Fourth Assessment Report. This report concluded that:

> ***"Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level…***
>
> ***"There is high agreement and much evidence that with current climate change mitigation policies and related sustainable development practices, global GHG emissions will continue to grow over the next few decades…***
>
> ***"Continued GHG emissions at or above current rates would cause further warming and induce many changes in the global climate system during the 21st century that would very likely be larger than those observed during the 20th century."***
>
> Climate Change 2007: Synthesis Report

The government agenda

In response to the environmental, social and economic impacts posed by climate change, the UK government is in the process of enshrining into law its commitment to reduce carbon dioxide emissions through domestic and international action by at least 60% by 2050. The government has identified the housing industry as one of the critical sectors in which action needs to be taken to deliver this target.

Indeed the government has already set challenging targets for the industry, summarised below:



Even though the market is currently in a state of flux, NextGeneration believes that companies need to continue to focus on addressing the short- and long-term implications of climate change. The decision to benchmark companies' approach to addressing climate change was made last year before the downturn. With climate change moving from the fringes of public understanding to gaining global recognition as a serious issue, NextGeneration still views it as the most important individual sustainability issue developers need to address. To this end, this year's benchmark assesses the approach taken by companies to address both adaptation and mitigation risks facing the UK housing sector.

NextGeneration believes it is imperative that companies continue to address the risks and opportunities of climate change, and the wider sustainability agenda. In the short term, as they face severe financial constraints, companies can ensure cost-savings are made by minimising energy and water consumption, reducing waste sent to landfill and addressing the fuel use of site and office transport fleets. And while companies are finding it hard to find buyers at present, ensuring that the new homes they build are protected against flood risk, increased variance in weather and subsidence, and are as energy and water efficient as possible, will help to make those homes more attractive to purchasers in the long run. Customers need to be confident in the longevity of the homes they purchase and it's the housing sector's responsibility to deliver such products.

NextGeneration does not underestimate the challenging time the sector is facing. However, history proves that homebuilders have faced and emerged successfully from previous market downturns. Once the market is revived, those who ignored the signs will be disproportionately affected by the risks climate change issues present now and in the future, from a legal, financial and insurance perspective, even before addressing the moral implications of building homes that will not be adaptable to a changing climate.

Thus we feel it is valid and important to present the results of this climate change benchmark, even in the face of current difficulties, to understand the strategic approach being promoted by companies and how they are putting this into practice. In addition to understanding the corporate position of different companies, this year's benchmark aims to drill down to the key climate change issues related to both homebuilders' operations and product.

Progress since the 2007 report

The results of this report clearly indicate that significant progress has been made by the industry over the last year. It was identified in 2007 that the sector lacked a strategic approach to addressing climate change issues (see Box B for details of recommendations). Of the 20 companies assessed in 2008, eight have climate change policies, or similar, in place, compared with none last year. Seven of these are NextGeneration members.

The sector is also responding well to the agenda set out by the government in relation to the Code for Sustainable Homes. Indeed, four out of the top 20 homebuilders have made a commitment to achieving Code level three energy standards ahead of government deadlines, with the Berkeley Group and Barratt publicly committing to developments seeking planning permission to be Code level three compliant by January 2008 and July 2008 respectively.

Evidence shows that 55% of homebuilders are now measuring operational carbon emissions with 45% setting either short- or long-term targets, or both, to achieve reductions in this area. However, the sector must increase the transparency of its reporting on energy data and targets, which is applicable more widely to its data collection and target-setting processes. There is currently no way of comparing the data reported to draw any performance comparisons between companies. The parameters of data collection are not clear for the housing sector; NextGeneration is working with its members to address this going forward. The progress made by industry, which is drawn out in more detail throughout the report, we believe has not always been mirrored by government action against the recommendations made by NextGeneration in its report last year. While it is positive that policy is more joined-up than when the first benchmark took place, the industry is still lacking a much-needed definition of what a zero-carbon home is. We believe the government could do more to ensure that sustainable homes are promoted to customers by taking a lead in marketing sustainable homes to the house buying market. With minimal awareness of the Code for Sustainable Homes among the public, and the continuing confusion over EPCs in the marketplace, NextGeneration would suggest that this must be rectified going forward in order to kick-start the cultural change needed for homeowners to associate the impacts of homes with how they occupy them.

Box B: Recommendations made in the 2007 NextGeneration Benchmarking Report

These are two of the six key recommendations made to the industry:

- Develop a strategic approach to climate change by introducing corporate policies and setting short- and long-term targets aligned to the government's targets to reduce carbon emissions of both operations and product.
- Innovate and experiment to understand the commercial, technical and customer implications of building homes to the levels in the Code for Sustainable Homes and publicly share best practice.

These are three of the seven key recommendations made to the government:

- Ensure that the recent plethora of policy documents and legislation provide clear guidance for homebuilders in terms of achieving the 2016 zero-carbon housing target; indeed, provide a consistent definition of 'zero-carbon'.
- Introduce incentives/sanctions to encourage homebuilders to build more sustainable housing.
- Take a leading role in marketing sustainable homes to the house buying market.

Detailed review of results

The 2008 results show significant variation in performance of the top 20 homebuilders with scores ranging from 85% to 0%. NextGeneration members once again outperformed non-members with average scores of 51.2% and 5.2% respectively. Given that members were able to provide additional non-public information to support their scoring, this finding is not surprising.

Listed companies continue to perform better than private companies with scores of 36.4% and 26.6% respectively. This average hides a wide variation in performance: while four out of the top six performing companies are privately-owned, five of the six lowest ranked companies are also private. The six companies at the bottom of this year's ranking provide only limited public information on their approach to managing the risks and opportunities posed by climate change. As with last year's benchmark, we would highlight that their scores may not represent actual performance, but a lack of disclosure in this area. As with any company that is not currently a member of NextGeneration, we would encourage these developers to join their peers and engage with the initiative to showcase their approach to these issues.

It should also be highlighted that the average score across all companies for strategy, governance and risk management is higher than for climate change commitment, showing that the majority of companies could be implementing their strategic approach to climate change more effectively. The observation could be made that it is easier for companies to 'talk the talk' than 'walk the walk'. NextGeneration hopes that future benchmarking finds rhetoric turning into reality.

Strategy, governance and risk management

Below is an outline of each of the criteria within the strategy, governance and risk management section. Also highlighted is an example of best practice performance from the companies benchmarked.

Strategy Board-approved policy in place outlining the company's approach to climate change, related objectives and targets, a commitment to measuring performance and evidence of engaging with external stakeholders.	**5 points available**
Redrow has a climate change policy in place with clear objectives in this area, and engages with stakeholders on sustainability issues. Performance measurement is undertaken in some areas, notably carbon emissions, waste and supply chain, with relevant targets set.	
Governance Clear governance structures in place at a management level showing Board-driven implementation of the company climate change strategy. Identification of responsibilities for implementing the climate change strategy at an operational level (both product and offices), supported by a structured training programme.	**20 points available**
Inspace has two dedicated teams in place responsible for delivering the corporate approach to tackling climate change and reviewing performance, while responsibility for climate change decisions is taken at Board level. Senior-executive staff engage with the industry and receive training on sustainability issues. Operational staff (site and office-based) are made aware of the company's approach to climate change issues and of their individual responsibilities, and bespoke training programmes are provided through working with external organisations.	
Risk management Core business risk analysis accounts for issues related to both climate change mitigation and adaptation and identifies the commercial implications of these.	**10 points available**
Persimmon considers and accounts for climate change adaptation and mitigation in its risk evaluation and analysis process, and publicly reports the outcomes of the analysis undertaken in its climate change position paper.	

Climate change commitment

Below is an outline of each of the criteria within the climate change commitment section. Also highlighted is an example of best practice performance from the companies benchmarked.

Environmental management An externally certified Environmental Management System is in place covering all climate change impacts related to the business.	**5 points available**
Countryside Properties' operations are fully certified to ISO 14001. Countryside states that it is "continuing to see the financial and operational benefits of our management systems. We are also regularly reviewing where added value is being delivered most effectively to help improve the efficiency of our business."	
Commitment to EcoHomes All private dwellings are certified to EcoHomes Very Good.	**5 points available**
Fairview showed a significant commitment to delivering on EcoHomes and the Code for Sustainable Homes.	
Energy Operational energy consumption or CO_2 production is measured, short-term targets are set to improve performance and the company commits the business to aspirational long-term goals. Energy efficiency of the company's product is addressed and commitment to achieving the energy component of the Code for Sustainable Homes levels three, four and six for new homes is evidenced.	**35 points available**

The Berkeley Group has committed to reducing its operational (both site and office) energy consumption, has a relevant Key Performance Indicator in place, and set a challenging target to reduce carbon emissions by 20% during its reporting year. It is also reducing the impact of its product by committing to level three of the Code for Sustainable Homes for all developments seeking planning permission after 1 January 2008.

Water Operational water consumption is measured and yearly targets are set to improve performance.

Water efficiency of the company's product is addressed and commitment to achieving the water component of the Code for Sustainable Homes levels three and five for new homes is evidenced.

25 points available

The Berkeley Group has committed to reducing its operational (both site and office) water consumption, has a relevant KPI in place, and has set targets to reduce this by 10% during its next reporting year. It also provided evidence of work being undertaken to measure and reduce the water use of its homes.

Waste Construction, development and office waste is measured with targets in place committing the company to reducing waste produced or increasing recycling.

25 points available

Miller commits to reducing construction waste and increasing recycling through its waste management and plasterboard recycling policies. It monitors its performance and has targets and KPIs in place, including a target of 20% reduction in waste to landfill over the next reporting year.

Procurement An externally audited sustainable procurement policy is in place ensuring the company addresses its supply chain and material specification processes in relation to climate change.

20 points available

Taylor Wimpey internally audits its sustainable procurement policy and commits to addressing the environmental impacts of its supply chain, working collaboratively with suppliers to improve their environmental performance, which is monitored. The company also works in partnership with suppliers, contractors and consultants to address specific areas of the climate change-related impacts of its supply chain. It researches how higher levels of the Code can be achieved through material procurement, and states a preference for materials with environmental certification and for locally-sourced, recycled or reclaimed materials. Taylor Wimpey has procedures in place for sourcing certified timber.

Transport Construction, development and office transport activities are measured with targets in place committing the company to reducing the related carbon dioxide emissions.

15 points available

Crest Nicholson has committed to measuring site based transport emissions, and establishing a baseline against which to set targets. It has undertaken work with a consultancy to achieve this. Fuel consumption by company vehicles are measured. It states a commitment to reducing the impact of business travel and employee commuting, and has set performance targets and reports relevant data. The company commits to reducing the impact of development-related transport activities, provides cycle storage on all new projects going through planning from the beginning of 2008 and has implemented a number of innovative transport initiatives.

Assurance Reporting is supported by a third party, independent statement covering all company activities related to climate change impacts.

5 points available

Barratt's Corporate Responsibility Report includes a third-party independent verification statement that covers company activities related to its climate change impacts.

Customer engagement A communication programme is developed and undertaken to provide customers with information related to sustainability issues and to understand the market demand for sustainable housing.

5 points available

Miller engages extensively with its customers on sustainability issues and climate change, providing homeowners with manuals that cover non-technical information on the operation, environmental performance and maintenance of dwellings. Research into customer understanding and awareness of sustainable living is also undertaken.

McCarthy & Stone engages with customers on how to get the best environmental performance from dwellings, and undertakes research into the relationship between customer demand and sustainability attributes of dwellings.

The future

NextGeneration hopes that the current crisis in the housing sector does not overshadow the long-term need to address climate change issues. As history shows, homebuilders have faced and emerged successfully from previous market downturns. While it is accepted this is a very challenging time for the industry, it is important that the momentum gained over the past two years to embrace and respond to the sustainability agenda does not fall at the first hurdle.

It is time for homebuilders to fully understand, and indeed quantify, the costs and benefits of their sustainability strategies and initiatives. It is only with this level of understanding that companies can prioritise resources and innovation, and justify investment during these difficult market conditions.

NextGeneration does not underestimate the scale of the challenges ahead, but is heartened by the progress demonstrated in this report. It is clear that the delivery of a more sustainable built environment requires the collaboration of a wide range of stakeholders. While each has its own agenda and objectives, the outcome required must not be overlooked. We therefore make the following recommendations to industry and government in the hope that our suggestions will assist in the delivery of more sustainable homes:

Recommendations to industry

- Seek to gain a wider and deeper understanding of the risks associated with climate change adaptation and mitigation issues, and align this with both core business risk analysis and current sustainability risk management procedures.
- Prioritise investment in further research and development (where and when practicable) of building to higher sustainability standards.
- Implement robust data-gathering systems to measure climate change impacts associated with both operations and products, and report on these more transparently.
- Take advantage of the attributes of more efficient housing in the face of increasing energy prices when marketing homes to customers.
- Collaborate with one another at this time when sharing information to achieve solutions to long-term problems is crucial.
- Work to improve understanding of the whole-life costs and benefits of building to progressively higher levels in the Code.

Recommendations to the government

- Work with industry to provide a clearer cost analysis of building to the different levels of the Code, based on real data from current projects.
- Evaluate the implications of the current market conditions on the deliverability of both its affordability and sustainability targets.
- Invest in research and development in the sector to support and foster innovation in the market and on the part of key public sector actors.
- Send clearer messages to the market with regard to future targets and any associated fiscal incentives, or otherwise, to ensure transparency and integrity of policy decisions.
- Develop fiscal incentives for homebuyers of the more efficient and sustainable homes (eg: grants), to help stimulate demand in that market segment and to encourage further R&D.
- Ensure the timetable for zero-carbon housing is clearly communicated to the homebuilders to help them ensure they can commit resources.
- Provide a definition of what is meant by “zero-carbon”.

1 Introduction

NextGeneration is pleased to present the results of its 2008 benchmark. In October 2007, we published the first benchmark of the performance of the UK's top 20 homebuilders in terms of their sustainability practice and reporting. The results of the benchmark are presented in the report "Building a more Sustainable Future". This exercise differs from last year's benchmark as it focuses solely on companies' approach to climate change adaptation and mitigation, and not on their overall approach to managing sustainability issues. We plan to repeat that broader benchmark next year, which will chart more closely the progress of the sector over the past two years.

While some general comparisons between the 2007 and 2008 results can be drawn, homebuilders' rankings should not be directly compared for these two years.

All of the UK's top 20 homebuilders are invited to become members of NextGeneration. At the beginning of 2008, all 2007 members rejoined and were accompanied by a new member – Persimmon. The membership base of NextGeneration now represents almost 77% of the market share of the top 20 homebuilders. The top 20 homebuilders built 97,623[1] of the total number (161,000) of homes completed in 2006, which is 60.6%[2].

Since the launch of the 2007 report, the government has continued to push its vision for a zero-carbon housing sector against the backdrop of the recent meltdown in the market. Homebuilders continue to face the challenge of delivering more sustainable yet affordable housing in an environment that is now far removed from the major mergers and significant profit margins experienced this time last year.

[1] Housebuilder supplement, October 2007

[2] Department of Communities and Local Government, 2007. *Housing Statistics 2007* [online]. Available from: www.communities.gov.uk/documents/housing/pdf/housingstatistics2007.pdf [Accessed 9 September 2008]

2 Benchmarking context

The housing sector in 2008

The credit crunch that began in August 2007 has had a profound impact on the UK housing market as well as on the wider UK economy during 2008. This has led to the weakest and most challenging housing market in the UK since the recession in the late 1980s and early 1990s.

The current economic slowdown is not unique to the UK and is affecting many countries, meaning the sector's future outlook will be dependent on many external factors. In addition, global markets have had to contend with significantly higher food and commodity prices, especially higher oil prices. The result is that the UK economy is likely to fall into a recession during the second half of 2008 and will undoubtedly be very weak during the remainder of 2008 and into 2009.

A key influence in this train of events has been the impact of the re-evaluation and re-pricing of financial risk. Consequently the spread between inter-bank lending rates, mortgage lending rates and the UK base rate has widened significantly. In the few years prior to August 2007 the typical gap between three month LIBOR (London interbank offered rate measuring the demand and supply of money across the banking sector) and the base rate was 25 basis points (bps) but this has widened to around 75 bps currently, and at one time was over 100 bps. The impact for the mortgage lending market has been the withdrawal of many more risky mortgage products, especially high loan-to-value ratio mortgages. Where high loan-to-value ratio mortgages are available the interest rates on offer are significantly higher than for those loans with at least 75% equity. This has understandably reduced the demand for mortgages.

The greatest impact has been felt in the new homes, first-time buyer and buy-to-let markets. UK homebuilders have suffered as a result. The share prices of the main UK homebuilders have fallen significantly since their latest peaks and typically by 50-90% between June 2007 and August 2008. Thousands of jobs have been lost among homebuilders, estate agents and property consultants, with many more expected to go over the next 18 months or so. Homebuilders are also having to write down the value of their land banks, and several are accessing new debt facilities to ensure that they do not breach lending covenants. The depth of the housing market problems has subsequently led to the abandonment of building at many sites across the country as developers struggle to sell units despite attractive incentives and significant price cuts.

The result has been that average house prices across the UK have fallen by 9% between the October 2007 peak and July 2008 (according to the Nationwide monthly house price index), although new-build house prices have fallen considerably more. Gross mortgage lending in the year to June 2008 has also dropped markedly, down by 32%. Housing completions are also set to be far lower this year and next compared with the past few years, with completions in England expected to be around 110,000-130,000 in 2008, compared with around 170,000 in recent years.

The outlook

The UK economy has entered a turbulent new phase since September and this report has been written at a time when the financial crisis is beginning to feed through to the real economy. While difficult to predict future trends, the downturn in the UK economy is likely to be longer and deeper than previously expected.

In an effort to counter the deterioration in financial markets, the UK government has announced a rescue package totalling £500billon to date. These are intended to ease liquidity in the banking system and should help stabilise the economy but are unlikely to help the UK avoid a recession.

In this report, NextGeneration does not intend to speculate the specific implications that current market conditions will have on the housing sector. The current period of reduced demand and consequential downward pressure on house prices is having a clear effect on homebuilders. In light of this context, NextGeneration has tailored its recommendations to the industry and government to reflect the increasingly demanding pressure being experienced by the sector.

Climate change – a bigger problem?

It was against this backdrop in November last year, as the Bank of England was reporting that mortgage approvals had reached a three-year low, that the Intergovernmental Panel on Climate Change (IPCC) published the final part of *Climate Change 2007*, the IPCC Fourth Assessment Report. This report, which is designed to constitute the core source of factual information about climate change, provided the starkest warning yet about the global implications:

> ***"Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level...***
>
> ***There is high agreement and much evidence that with current climate change mitigation policies and related sustainable development practices, global GHG emissions will continue to grow over the next few decades...***
>
> ***Continued GHG emissions at or above current rates would cause further warming and induce many changes in the global climate system during the 21st century that would very likely be larger than those observed during the 20th century."***
>
> Climate Change 2007: Synthesis Report

This report saw Sir Nicholas Stern revisit the findings of his 2006 *Review of the Economics of Climate Change*[3]. While the IPCC Fourth Assessment was seen as vindication of the controversial position held by Stern, the latest IPCC findings encouraged him to suggest that in fact he had possibly underestimated the associated impacts and costs related to inaction against climate change risks in his original analysis, which had already caused widespread alarm:

> ***"From all of these perspectives, the evidence gathered by the Review leads to a simple conclusion: the benefits of strong, early action considerably outweigh the costs.***
>
> ***"The evidence shows that ignoring climate change will eventually damage economic growth. Our actions over the coming few decades could create risks of major disruption to economic and social activity, later in this century and in the next, on a scale similar to those associated with the great wars and the economic depression of the first half of the 20th century. And it will be difficult or impossible to reverse these changes. Tackling climate change is the pro-growth strategy for the longer term, and it can be done in a way that does not cap the aspirations for growth of rich or poor countries. The earlier effective action is taken, the less costly it will be."***[4]

While this extract from the report's Executive Summary indicates that Stern was very clear on his position that failing to address climate change issues was not an economically-viable option in the long term, he now admits himself his predictions related to the amount of government resources required to reduce the effects were too conservative. Some commentators disputed whether even the predictions of the IPCC were too conservative.

Putting aside arguments that both of these reports *underestimate* the impacts of climate change, taken together they provide a startling picture of what it means for the environment, society and economy. While the details of the effects may be up for debate, their true scale is now widely accepted.

Climate change impacts on the UK housing sector

What does this mean for the UK housing sector? Earlier this year, the Environment Institute at University College London and Hermes Real Estate launched a joint report entitled *Climate Change – The Risks for Property in the UK*[5]. The report surmised a number of impacts of a changing climate: the UK can expect around 4% more rainfall in the winter months by the 2020s; by the same time, summer rainfall may have declined by as much as 10%; and annual reductions in soil moisture may be as much as 6%. Combined, these factors will lead to increased risk of flooding, increased risk of flash flooding, increased risk of water shortages, threatened stability of buildings in risk areas, and increased risk of ground movement, among other detrimental effects.

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[3] HM Treasury, 2006. *Stern Review: The Economics of Climate Change, Executive Summary* [online]. Available from: www.hm-treasury.gov.uk/media/4/3/Executive_Summary.pdf [Accessed 9 September 2008]

[4] Ibid, page 55

[5] UCL Environment Institute, 2008. *Climate Change – The Risks for Property in the UK* [online]. Available from: www.hermes.co.uk/pdf/Climate_Change_Report_web.pdf [Accessed 9 September 2008]

The report estimated the impact of all these identified climate change risks on the different property types. In the context of this NextGeneration report, it is alarming to note that the analysis undertaken by the Hermes report found the property type at the highest risk to be residential, especially when looked at in relation to increased risk of flooding in the face of extreme rainfall. While it is accepted that flooding is location specific, national statistics demonstrate a significant amount of new build development is undertaken on floodplains. The report states that: "The Land Use Change Database for England shows that at least 9% of the dwellings built in each year from 1996 to 2005 have been in flood risk areas; in 2003 the figure rose as high as 11%."[6]

The damaging economic, environmental and social effects of flooding were felt in summer 2007 with around 55,000 properties across Britain flooded and almost half a million people without mains water or electricity. The floods led to 165,000 insurance claims being logged with an estimated cost to the insurance industry of £3 billion. If this estimate is correct it will be "the largest single claims event in UK history"[7].

Utilities, security and supply

Energy prices have been rising dramatically since the beginning of the year as the threat of energy security becomes ever more real. In particular, oil has seen significant price hikes, and has been subject to great market volatility since the beginning of the year. Improving operational energy efficiency is possibly now most pertinent at a time when the industry is attempting to considerably reduce its costs. Measuring and reducing operational energy consumption is likely to become of comparable financial importance as measuring and reducing operational waste production and disposal currently is. Alongside this, developers operating in areas of water scarcity, notably London and the south-east, are strongly urged through the benchmark to address operational water consumption as there are substantial indications that this is the next utility likely to experience price increases in areas of shortage.

There is a strong case for homebuilders to market more aggressively the benefits of the more energy and water efficient housing they are building now. Homeowners have seen their electricity and gas bills increase considerably this year; the average household bill is now over £1,000 per annum. The costs associated with building to Code level three seen against these rises in household utility bills presents a more favourable payback period.

The government agenda

The need to address climate change adaptation and mitigation issues can be further understood by looking at the current policy agenda surrounding housing and sustainability. As outlined in NextGeneration's 2007 report, *Building a Sustainable Future*, the government has radically evolved its policy in the area of delivering sustainable communities.

During this time of turmoil for the UK housing sector, the government has remained committed to its agenda – for example, through its target for all new homes built from 2016 to be zero-carbon, a commitment being realised through incremental changes to the Building Regulations and the industry building standard, the Code for Sustainable Homes. This is paving the way for a more sustainable built environment for the future. Homebuilders need to be encouraged and supported along the way, now more than ever, if the government is to achieve its vision. The timeline below outlines some key dates for the housing sector.

[6] Ibid, page 55

[7] HM Treasury, 2006. *Stern Review: The Economics of Climate Change, Executive Summary* [online]. Available from: www.hm-treasury.gov.uk/media/4/3/Executive_Summary.pdf [Accessed 9 September 2008], page 64

In addition to government legislation to address more specific climate change issues such as energy (2007 Energy White Paper's proposed Carbon Reduction Commitment), water (Water Efficiency of Homes Directive), and waste (Sustainable Construction Strategy target of halving waste sent to landfill target by 2012), one clear driver that will affect the secondary legislation directed at the housing sector in the future is the Climate Change Bill. It was given its second reading in the House of Commons on 9 June 2008 and is expected to complete its passage through Parliament and receive Royal Assent in autumn 2008. This Bill will enshrine in law the UK's commitments to reducing carbon dioxide emissions by at least 26% by 2020, and 80% by 2050 (against a 1990 baseline).

All of this leads us to a most unfortunate confluence of events:

- A clear recognition of the severity of climate change and the significant contribution of UK housing to greenhouse gas (GHG) emissions, particularly carbon dioxide;
- The worst economic downturn in 60 years, according to the International Monetary Fund and UK treasury;
- The UK housing sector is facing the worst conditions it has seen since the early 1990s.

The housing industry and government face a major challenge in working out how they can deliver on the changes necessary to reduce the contribution of homes to climate change at this time of severe financial difficulty. Some take the view that addressing the economic and financial difficulties must take precedence and measures to tackle climate change must be delayed while this is accomplished. Equally, others take the view that climate change is a challenge that is as important, if not more so, as the downturn, and the focus on addressing it must be maintained, notwithstanding the current financial situation.

In the short term, speculation suggests that it is sustainability that will fall off the agenda in favour of deliverability and affordability. However, there is a strong business case and, arguably, moral imperative for continuing along the sustainability path laid out for the housing sector, specifically in relation to increased operational cost-efficiency, commercial understanding of legislative changes, and accountability of land acquisition and development.

Why benchmark climate change?

Even though the market is currently in a state of flux, NextGeneration believes that companies need to continue to focus on addressing the short- and long-term implications of climate change. The decision to benchmark companies' approach to addressing climate change was made last year before the downturn. With climate change moving from the fringes of public understanding to gaining global recognition as a serious issue, NextGeneration still views it as the most important individual sustainability issue that developers need to address. To this end, this year's benchmark assesses the approach taken by companies to address both adaptation and mitigation risks facing the UK housing sector.

NextGeneration believes that failing to continue to address the risks and opportunities of climate change, and the wider sustainability agenda, is not an option developers should take. In the short term, as they face severe financial constraints, companies can make cost-savings by minimising energy and water consumption, reducing waste sent to landfill and addressing the fuel use of site and office transport fleets. And while companies are struggling to find buyers at present, if they ensure that the new homes they build are protected against flood risk, increased variance in weather and subsidence, and that they are as energy and water efficient as possible, this will help to make those homes more attractive to purchasers in the long run. Customers need to be confident of the longevity of the homes they purchase and it's the housing sector's responsibility to deliver such products.

NextGeneration does not underestimate the challenging time the sector is facing. However, history proves that homebuilders have faced and emerged successfully from previous market downturns. Once the market is revived, those who ignored the signs will be disproportionately affected by the risks climate change issues present now and in the future, from a legal, financial and insurance perspective, before even addressing the moral implications of building homes that will not be adaptable to a changing climate.

Thus we feel it is valid and important to present the results of this climate change benchmark, even in the face of current difficulties, to understand the strategic approach being promoted by companies and the consequential action undertaken on the ground. In addition to understanding the corporate position of different companies, this year's benchmark aims to drill down to the key climate change issues related to homebuilders' operations and product.

This report

The contents of this report provide:

- A summary of the key factors driving homebuilders to address climate change issues;
- Detailed analysis of the findings of the NextGeneration 2008 climate change benchmark, highlighting challenges for the future;
- A series of conclusions and recommendations addressed to government, developers, planners and customers.

3 Methodology

Benchmarked companies

The NextGeneration Climate Change Benchmark covers the same group of developers as the corporate benchmark undertaken in 2007. This encompasses the top 20 homebuilders in the UK by volume, based on the number of units they completed in the financial year 2006/07. All 20 were benchmarked in phase one (based on their public reporting) and the 11 member companies were benchmarked in phase two (based on their actual performance on climate change, assessed through in-depth, face-to-face meetings).

Each year the top 20 homebuilders are offered membership of NextGeneration and this year 11 accepted. With the merger of George Wimpey and Taylor Woodrow (now Taylor Wimpey), NextGeneration welcomed Persimmon as its 11th member in 2008. Members benefit from a number of services, including greater engagement opportunities within the benchmarking process.

The following companies (in descending order of units built) were benchmarked; member companies are listed on the left-hand-side and non-members on the right:

NextGeneration members	Non-members
Taylor Wimpey	Bellway Homes
Persimmon	Gladedale Holdings
Barratt Developments	Bovis Homes Group
Redrow Group	Bloor Holdings
Miller Homes	Lovell Partnerships
The Berkeley Group	Cala Group
Crest Nicholson	Kier Residential
McCarthy & Stone	Galliford Try
Countryside Properties	Morris Group
Fairview New Homes	
Inspace Partnerships	

Criteria development

The benchmarking criteria were developed to reflect the most pertinent climate change issues facing the housing sector. Where relevant, the criteria complement those used in the 2007 full corporate benchmark.

Where appropriate, the criteria have been aligned with legislative drivers, including the government's targets for achieving various levels of the Code for Sustainable Homes, water efficiency requirements within dwellings and waste management plans to be implemented on all sites. In keeping with NextGeneration's aim to drive best practice in sustainability into the heart of the residential sector, many of the criteria assess whether the homebuilders are reaching beyond government targets and other industry standards, with maximum points being allocated to those companies able to demonstrate that they are truly leading the field. As in previous years, NextGeneration members were consulted during the climate change criteria development and provided input to their content.

Alongside the expert input from its executive committee organisations, NextGeneration also benefited greatly from consultation on this year's criteria with the Energy Saving Trust (EST). EST is a not-for-profit organisation helping industry and individuals tackle climate change issues and helping to reduce carbon emissions associated with homes.

Because the criteria are more focused (in terms of addressing climate change issues rather than the wider sustainability agenda) and have evolved, the results for individual companies are not directly comparable with those for last year's corporate benchmark. However, as the ranking shows, many companies performing well in last year's benchmark have continued to perform well this year. It is also possible to crudely align a number of criteria from the 2007 benchmark with relevant criteria for this year's benchmark, even though the detail within said criteria is not the same. However, NextGeneration is keen to report the 2008 results as a stand-alone exercise addressing the sector's approach and performance against climate change issues, which arguably present the biggest challenge to companies responsible for the built environment.

Two overarching categories were used in this benchmark: strategy, governance and risk management; and climate change commitment. The issues addressed within each are as follows:

Strategy, governance and risk management

- Strategy
- Governance
- Risk management

Climate change commitment

- Environmental management systems
- Commitment to EcoHomes
- Energy
- Water
- Waste
- Procurement
- Transport
- Assurance
- Customer engagement

See Appendix 1 for more detailed information related to each of the above criteria.

Scoring and engagement process

All 20 homebuilders were subject to phase one of the benchmarking, whether they were a NextGeneration member or not. This phase comprised an analysis of each company's publicly available information, such as corporate disclosure through annual reports or sustainability/ corporate responsibility reports, and information on company websites. Information analysed during this stage had to be publicly available before 30 April 2008. This phase therefore provides an assessment of the quality of reporting of UK homebuilders on climate change issues.

All companies were provided with a copy of their phase one analysis and score. They were then given the opportunity to respond to the analysis, query scores and highlight any additional publicly available information not captured in the initial analysis. A final score for the quality of their reporting was then allocated.

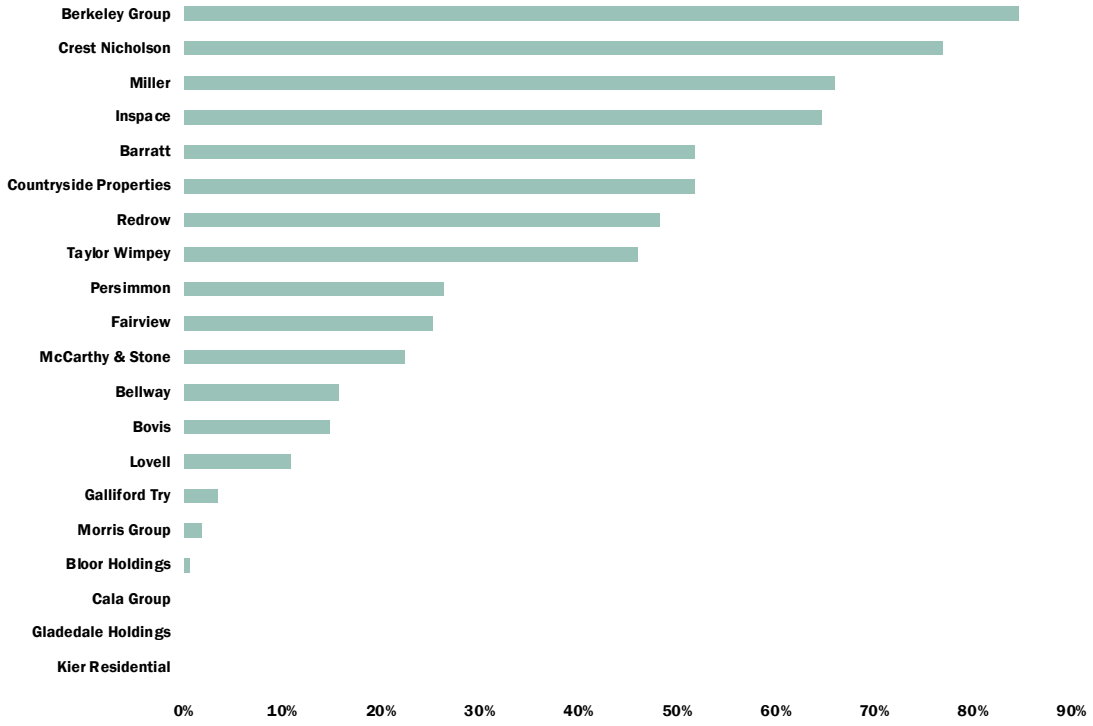
In phase two, NextGeneration members, as one of their membership services, met Upstream and selected representatives of WWF, The Housing Corporation, Insight Investment and the Bank of Scotland to discuss their phase one score and their practice on all criteria. Each company was given the opportunity to provide further evidence to support its reporting commitments to addressing climate change issues. Members then received an initial phase two report outlining their second score in light of the further information disclosed during this second tranche of the benchmarking. This phase of the process thus generated a fuller assessment of the performance of NextGeneration members on climate change issues.

4 Overall summary of benchmarking results

Company ranking

Two companies have emerged as leaders of this year's benchmark – The Berkeley Group and Crest Nicholson – achieving 84.6% and 76.9% respectively (see Figure 1). Miller Homes and Inspace also performed very well against a set of challenging criteria, scoring 66.0% and 64.6% respectively. A pack of four homebuilders including Barratt, Countryside Properties (ranked equal fifth), Redrow and Taylor Wimpey all scored within 6% of each other, ranging from 51.7% to 46.0%. Persimmon, Fairview and McCarthy & Stone all scored over 20% in the benchmark.

Figure 1: Top 20 overall performance



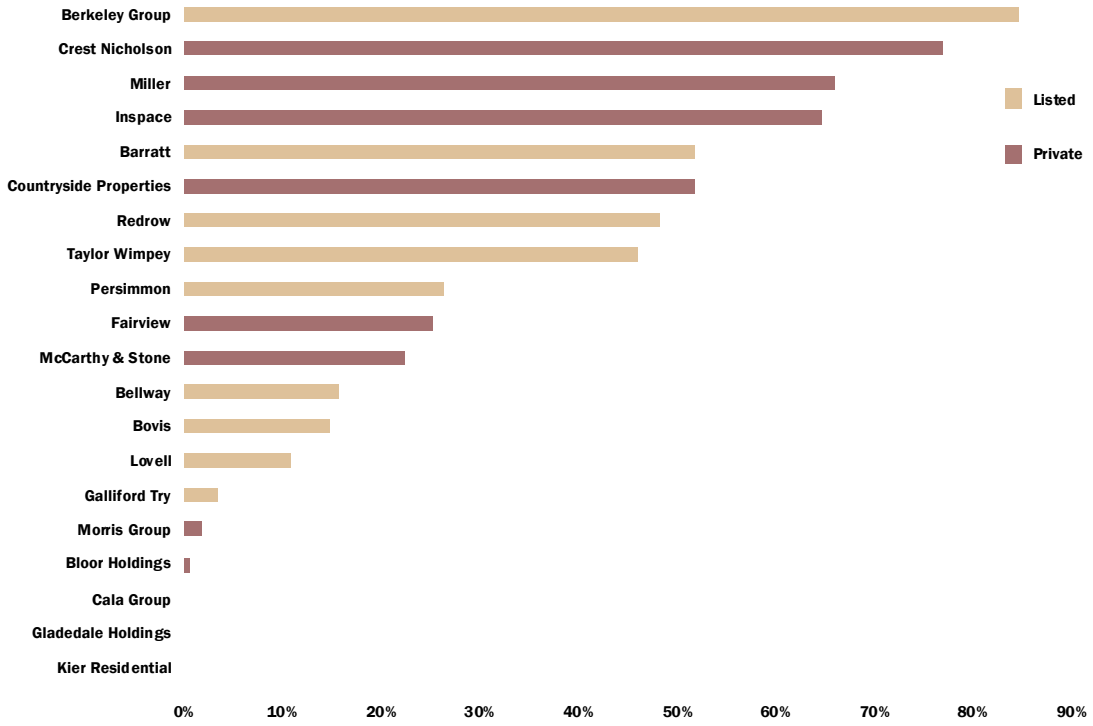
The remaining nine companies are not members of NextGeneration, which in part explains their poor performance in the benchmark. As with last year's benchmark, we would highlight that their scores may not represent actual performance, but a lack of disclosure in this area. As with any company that is not currently a member of NextGeneration, we would encourage these developers to join their peers and engage with the initiative to showcase their approach to sustainability and climate change.

Bellway, Bovis and Lovell all scored above 10% as they have some public reporting on climate change issues. However, the remaining six companies all have very limited public information on which to base their assessment. This is predominantly due to five of those six companies being privately-owned and therefore under less pressure to report on performance to investors. The difference between the listed and privately-owned companies is discussed in more detail below.

Listed vs. private

On average, listed companies performed better than private companies with scores of 36.36% and 26.64% respectively (see Figure 2). While the average score for listed companies is greater than that for the private companies, four of the top six performing companies are privately owned and not subject to the same reporting requirements, which is the likely driver of the higher average performance of listed companies. However, of the four top performing private companies, only Miller Homes has never been a listed company and is commended for its approach to addressing and reporting on climate change issues.

Figure 2: Listed vs. private

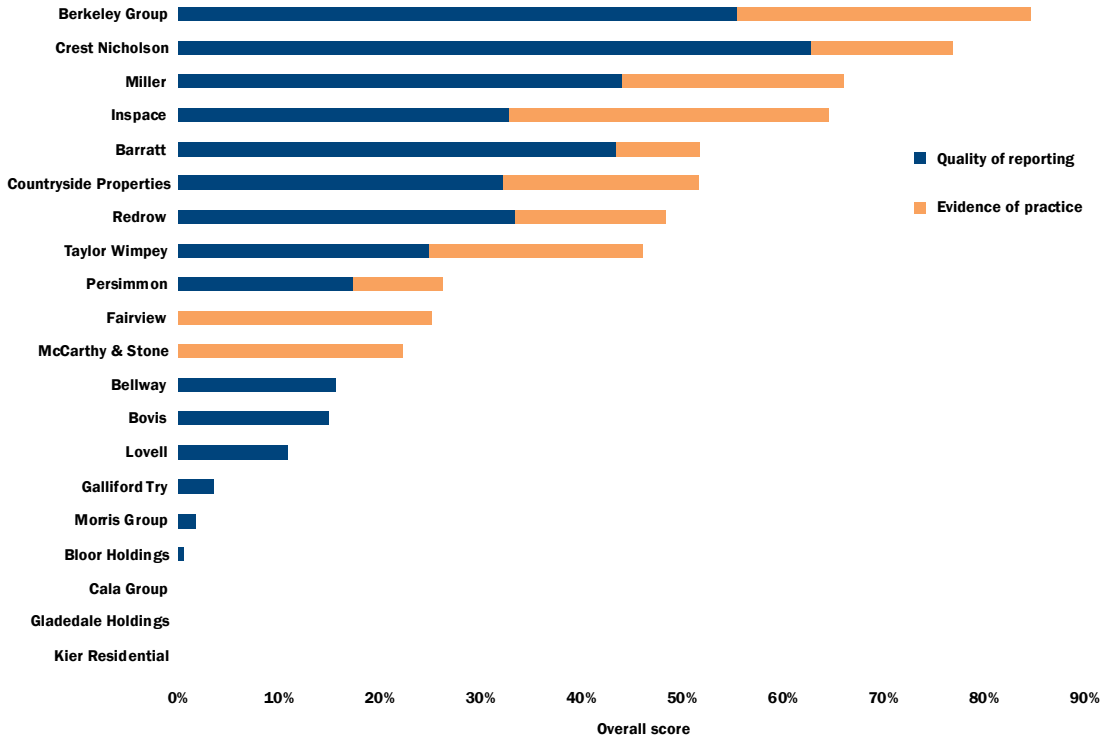


Quality of reporting vs. evidence of practice

As described previously, the NextGeneration benchmarking is undertaken in two phases; the first phase reflects the quality of companies' reporting and the second the evidence of homebuilders' practice.

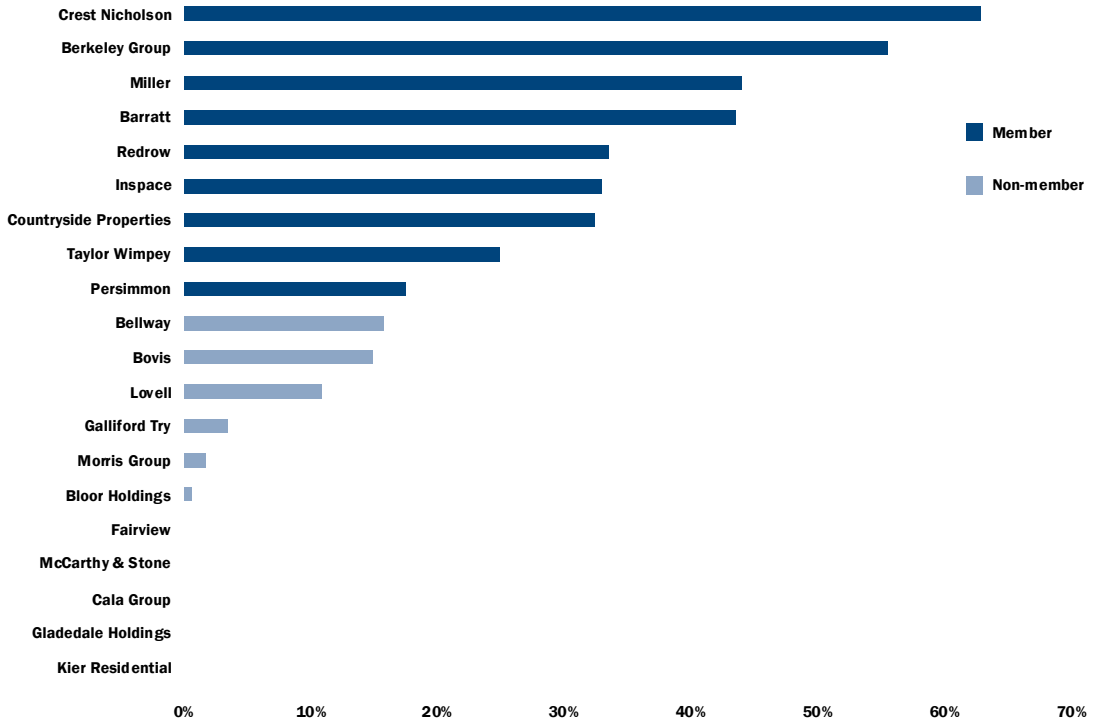
The following graph (Figure 3) shows how all companies performed in both phases of the benchmarking, where members can be distinguished from non-members by having a score for evidence in practice.

Figure 3: Quality of reporting vs. evidence of practice



The results show a wide disparity in the quality of companies' reporting. The graph below (Figure 4) plots only companies reporting scores, which further highlights the extent of companies' reporting on climate change issues.

Figure 4: Company quality of reporting



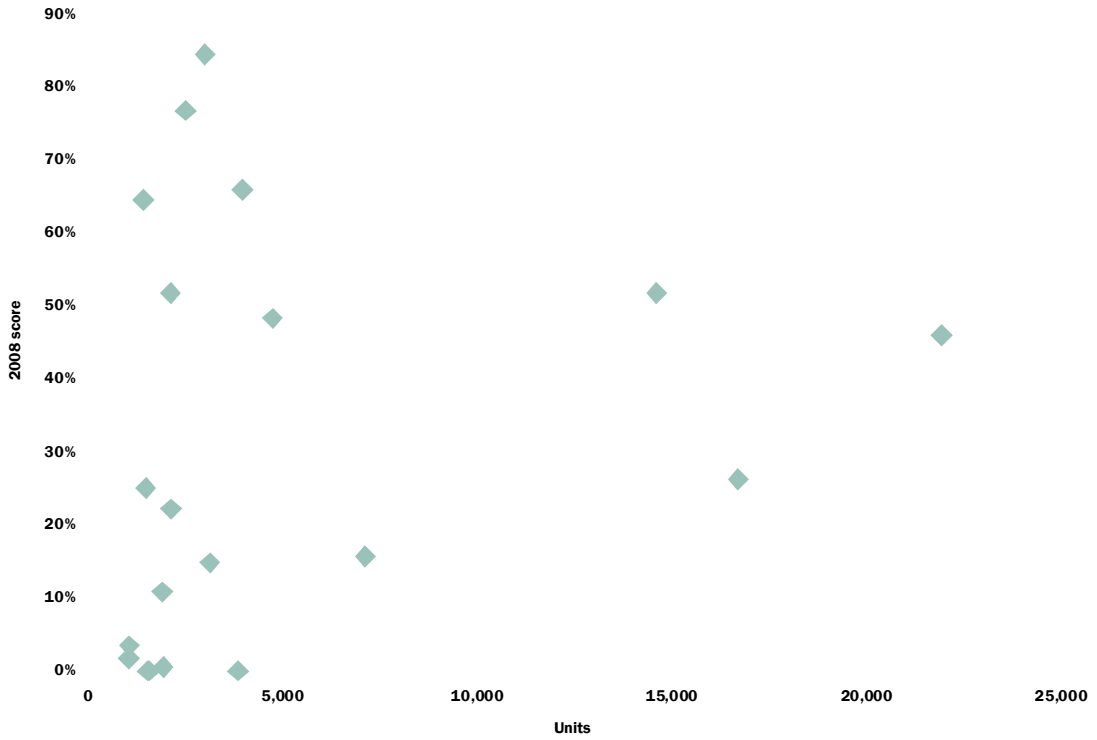
While some companies' positioning has stayed broadly the same – for example The Berkeley Group, Crest Nicholson and Miller – some of the companies who report on their sustainability performance in the public domain considerably improved their score during the second phase of the benchmark, notably Inspace and Countryside Properties.

Fairview and McCarthy & Stone also significantly improved their scores by way of providing evidence of their practices, which is wholly due to the fact that neither company is currently publicly reporting on their sustainability performance. It is interesting to note that of the 15 companies that do have information on their sustainability performance in the public domain, all nine NextGeneration members outperform the six non-members. Anecdotal feedback suggests that part of this level of performance by members is driven by the work undertaken by NextGeneration.

Volume vs. performance

Unlike in previous benchmarks, there is greater correlation between companies' performance in the climate change benchmark and their size (indicated by the volume of homes they completed in 2007). The top four performers are spread between sixth and eighteenth in terms of volume, with the first of the larger-volume builders appearing in joint fifth place – Barratt Homes. However, the connection between volume and performance in the benchmark is still quite weak (see Figure 5 below).

Figure 5:Volume vs. performance



A number of factors may have played a role in some of the large volume homebuilders not scoring as highly as their smaller counterparts, including:

- The stock market pressure felt by some has resulted in fewer resources to report and engage with NextGeneration;
- Taylor Wimpey and Barratt have undergone major restructuring programmes after mergers last year, meaning that resources and systems have needed to be aligned;
- It is arguably more difficult for volume homebuilders to commit to delivering on climate change issues across all areas of the country, as compared to smaller, niche developers operating in one area.

There are also a number of reasons for the lack of correlation between volume and performance including:

- Some companies taking a holistic approach to sustainability issues may not perform as highly in this issue-specific benchmark. This is not to say that companies won't perform well in both, as The Berkeley Group, for example, has proved.

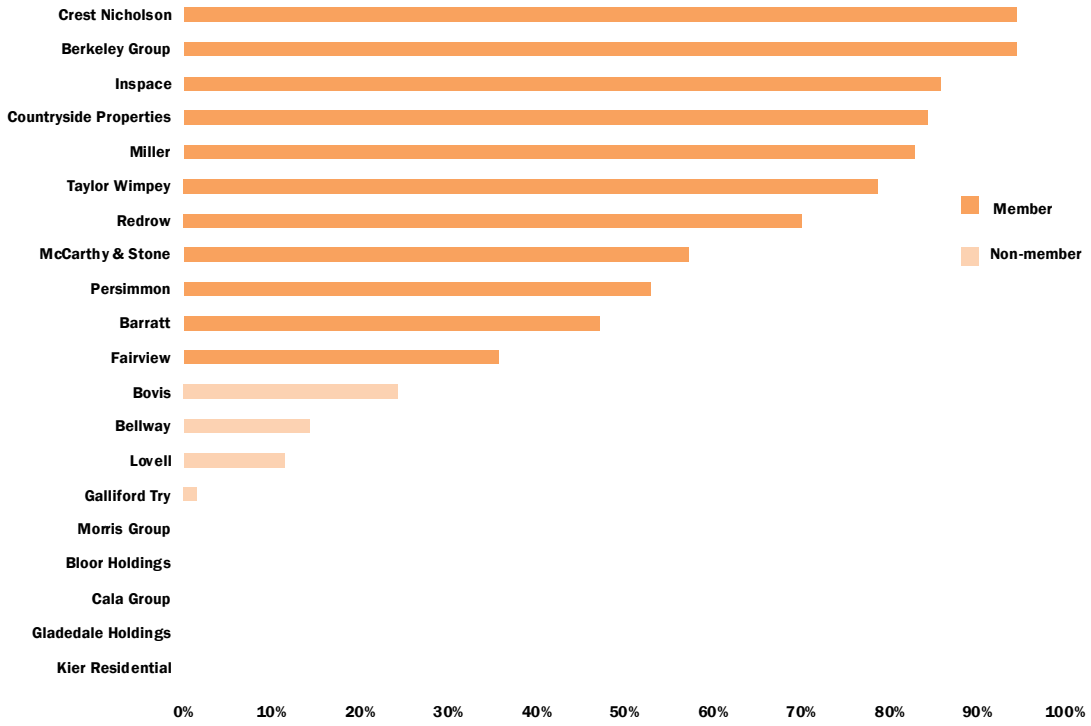
5 Strategy, governance and risk management

Results overview

The strategy, governance and risk management section assessed companies on these three areas in relation to climate change issues only. Each is discussed in more detail in the following paragraphs. In the graph below (Figure 6), it is clear to see some companies scored very highly in this section, with seven companies scoring 70% and over. Crest Nicholson and The Berkeley Group both scored 94.3% in this section, clearly demonstrating the strategic approach taken to climate change and ensuring appropriate governance structures are in place to address the related business risks.

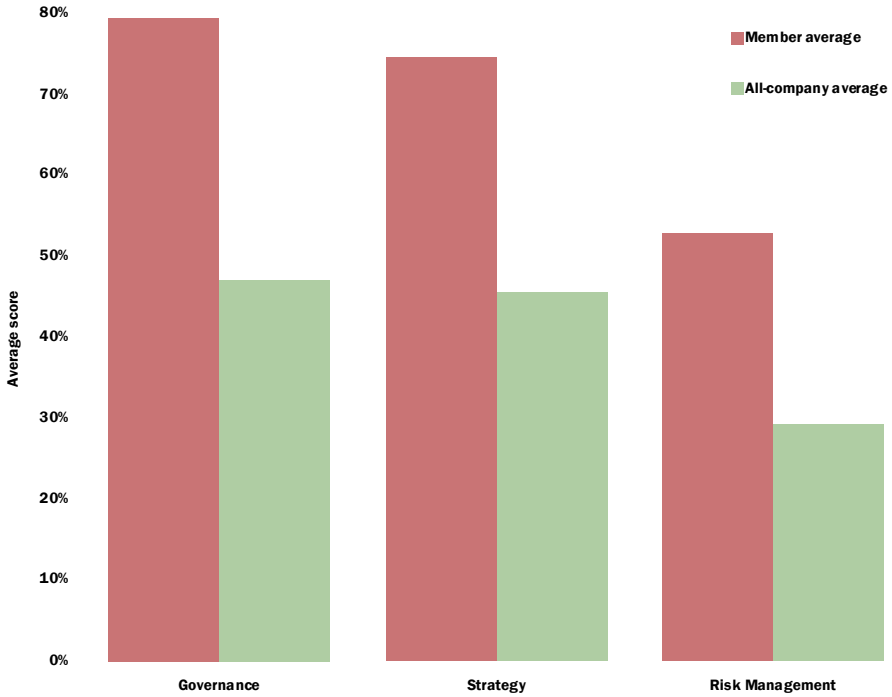
The average score across all companies was 41.7% in this section, with members outperforming non-members with average scores of 71.2% and 5.7% respectively. The all-company average for this section was higher than that for climate change commitment, showing that almost all companies could be implementing their strategic approach to climate change more effectively on the ground.

Figure 6: Company's overall score against strategy, governance and risk management



In terms of the individual criteria in this section, the all-company and member averages were both highest for governance, followed by strategy, and finally risk management. The member averages for these three were 79.5%, 74.5% and 52.7%. For all companies, the averages against these sections were 47.0%, 45.5% and 29.3% (see Figure 7). The reasoning for these differences is analysed in more detail below.

Figure 7: Breakdown of member and all-company performance against strategy, governance and risk management



Governance

To fully realise a sound corporate climate change strategy, companies need to establish the correct governance structures to ensure implementation throughout their business operations. This means disseminating information throughout the workforce, allocating appropriate responsibilities and providing training to all levels of staff on the corporate approach to addressing climate change issues.

In terms of training, it is as important to train Board members and senior executives as it is site operatives. Much of the climate change agenda is driven through companies' sustainability or corporate responsibility (or equivalent) working groups, so it is important for this function to promote the outputs of their work to all employees in the business. Businesses need Board-level buy-in to help drive changes in corporate decision-making and then for office staff and site operatives to ensure these decisions are applied on the ground.

Of the 20 companies assessed, six have training programmes in place for their Board-level and senior executive staff. Training at this level is not something that homebuilders have tended to report on, with only two examples in the public domain – Crest Nicholson (see Quote 2) and The Berkeley Group (see Quote 1). While it may not be an issue on which homebuilders report, if just 30% of companies undertake this type of training, it is quite disappointing. Given that 40% of companies have specific climate change policies in place, it would appear there is perhaps a gap between the commitments being made and how seriously they are being taken at this senior level. With climate change risks rising up the agenda, homebuilders should no longer view the issues as a bolt-on to their core business strategy.

Quote 1: Berkeley Group

Training and development

New employees receive induction training, which covers information on the company structure, history, as well as on specific issues such as health and safety and sustainability. Each of the Divisions undertakes training for employees on sustainability depending on the role and responsibilities of individuals. For example, when we developed the current sustainability targets and KPIs, extensive consultation was undertaken with senior management responsible for delivery to develop the targets.

Once finalised, training was undertaken within each of the Divisions to ensure that the targets were understood and responsibilities for delivery identified. In the past year we have undertaken a sustainability training needs analysis, to identify what sustainability training needs to be undertaken for specific roles within the company. A number of these training programmes are already in place and, over the next year, we will be completing their development and implementation.

Source: Berkeley Group Sustainability Report 2007
www.berkeleygroup.co.uk/media/adobepdf/c/0/Berkeley_Group_Sustainability_Report_2007_1.pdf

Quote 2: Crest Nicholson

A year of progress

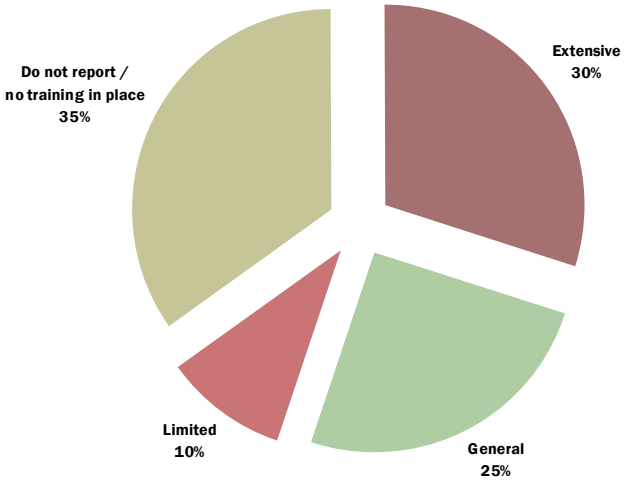
We have made good progress in delivering our corporate environmental programme. Waste recycling within our offices has increased from 9% to 21.5%, and a network of sustainability champions now shares and develops best practice. We need to have the right skills and communication processes to deliver the sustainable homes of the future. In 2007 we:

- *Held an environmental seminar for operational staff to communicate company achievements, future strategy and best practice examples within the sector.*
- *Delivered a series of training events throughout the year including an ESCO workshop for technical teams, sustainability training for sales and marketing and bespoke training on the Code for Sustainable Homes and our approach to tackling climate change.*
- *Developed an on-site sustainability induction programme and a pocket-sized best practice guide to environmental site management.*
- *Significantly increased the sustainability content of our intranet.*

Source: Crest Nicholson Sustainability Report 2007
www.crestnicholson.com/assets/pdfs/reports/CrestNicholsonSustainabilityReport2007.pdf

In addition to Board training, homebuilders were assessed on the level of training provided to both site and office workers. The pie chart (see Figure 8) shows that seven of the companies benchmarked do not provide training on climate change issues to operational staff. Of the remaining 13 homebuilders, 30% provide extensive training to staff, including the development and implementation of bespoke training on climate change issues (technical training on the Code for Sustainable Homes, or training on Site Waste Management Plans, for example). Crest Nicholson's approach stood out from its peers; it works with a range of external organisations to deliver a generic training programme (including the basics of the Code) to staff at all levels across all disciplines, as well as bespoke training for more senior staff, which includes training on climate change strategy, and corporate risks and opportunities.

Figure 8: Training on climate change issues



Strategy

Whether as part of the overarching sustainability vision, or as a stand-alone approach, a corporate strategy to address climate change should be the foundation for any company serious about these issues. In turn, to formalise the company's commitment in this area, evidence of policy, again whether referenced in other documents or stand-alone, is crucial to sending the right message internally and externally.

Last year's benchmark recognised that while 60% of homebuilders suggested climate change posed significant risks to their business operations, none had a policy specifically addressing this. This year NextGeneration has found eight out of 20 companies have developed a climate change policy, or similar, with seven of these being published. Seven of the eight are also NextGeneration members.

Persimmon's Climate Change Position Paper provides a good example of a policy that outlines the corporate commitments to addressing the climate change aspects of the wider sustainability strategy (see Quote 3). It states the overarching goal of Persimmon to minimise its contribution to climate change through developing a more energy efficient product and promoting sustainable living to customers, to build homes with the capacity to adapt to future changes in climate, and to reduce operational greenhouse gas emissions from business activities. Miller Homes also clearly communicates its approach to reducing the climate change impact of both its product and operations through its published policy (see Quote 4). Bellway provides an example of a more aspirational climate change policy, defining the position the company takes on a number of issues (see Quote 5).

Quote 3: Persimmon Homes

As the UK's leading housebuilder, Persimmon plc acknowledges that climate change is a significant issue and presents a number of risks to our business. We must ensure that we manage these risks in a pragmatic and robust manner.

We also recognise that we have a role to play in minimising our contribution to climate change. As a housebuilder, we believe that our primary responsibility is to build homes and communities that are sustainable, inherently energy efficient and which encourage our customers to live in a way that minimises their contribution to climate change.

Source: Persimmon Homes Climate Change Position Paper, December 2007
www.corporate.persimmonhomes.com/psn/csr/gpolicies/clim_chg_pos_stmt19dec07.pdf

Quote 4: Miller Homes

In order to address the causes and consequences of climate change Miller Homes will:

- *Investigate how we can minimise greenhouse gas emissions from the housebuilding process;*
- *Design and build homes in order that they will be able to operate to the satisfaction of customers in the future; and*
- *Work with our stakeholders, especially suppliers and customers, to raise awareness of climate change and its causes, consequences and responses.*

Source: Miller Homes Climate Change Policy, October 2007
www.miller.co.uk/uploaded/CSR/policies/Climate_Change_policy.pdf

Quote 5: Bellway

As a major developer of new homes we realise that we have a significant role to play in combating climate change and reducing GHG emissions. We define our position on this issue as follows:

- *We support precautionary action on climate change although we recognize that aspects of the science are still emerging and remain to be the subject of expert debate.*
- *We believe that climate change is a long-term issue and support urgent but informed action to stabilize (GHG) concentrations by achieving sustainable long-term emission reductions at the lowest possible cost.*
- *There are many potential contributors to this goal. We support an inclusive approach that acknowledges the existence of many different starting points, priorities and solutions.*
- *We believe that governments and businesses must work together to create policies that contribute towards the delivery of new homes and emission reductions, this we believe can be achieved simultaneously.*

Source: Bellway Climate Change Policy / Statement
www.bellwaycsr.co.uk/climate_change.html

Risk management

Risk management was assessed in two parts – the companies approach to addressing climate change mitigation risks and also their approach to addressing adaptation risks (see Box C for definitions). Both adaptation and mitigation issues present significant risks to companies, for example, flooding, increased variance in weather, land subsidence, renewable energy generation and legislative changes.

The risk of flooding for homebuilders in the UK is nothing new. In response to the floods of summer 2007, the Pitt Review, published in June 2008, urged fundamental changes in the way the country is adapting to the likelihood of more frequent and intense periods of heavy rain, and put forward a number of recommendations. The Review suggested that the government must drive adaptation and mitigation of the risks associated with the predicted changing conditions. The government's guidance document, PPS25, is designed to help planners and developers pay proper regard to these risks. However, policy-makers must be clear on its implementation to ensure a joined-up approach to flood prevention in the UK.

Homebuilders have historically taken a development-based approach to environmental risk management. This is true for climate change adaptation and mitigation issues, and can be demonstrated through the risk analysis approach to land acquisition (adaptation) and development of energy efficiency and renewable energy strategies (mitigation). However, not addressing pertinent climate change issues at a strategic level is becoming a commercial risk for companies. For example, measuring operational energy and fuel use, water consumption, and waste generation gives a company a strategic understanding of the costs associated with these impact areas and how greater efficiency translates into financial gains.

Most companies in the benchmark acknowledged the importance of climate change adaptation and mitigation, and indicated how they sought to manage these risks in the future. The most thorough appraisals identified inherent, residual and future risks at a development and at a corporate level, and included risk management recommendations such as 'future proofing' developments against future climate change consequences, reducing the need to adopt adaptation measures at a later time.

A quarter of companies in the benchmark demonstrated through publicly available information or through evidence submitted in phase two that they were seeking to assess and quantify in financial terms the implications of climate change adaptation and mitigation risks. Among the five companies that scored against this criterion, either through their reporting or the evidence submitted, the most common analysis undertaken was to make cost projections into building to different levels of the Code for Sustainable Homes. Research undertaken included cost analysis into renewable technologies and technical solutions such as building fabric and insulation. Rising fuel prices also featured in companies' risk analysis, with green transport initiatives being adopted to offset increased overheads.

One company did submit evidence during phase two to demonstrate its land acquisition risk analysis looks to integrate sustainability at the earliest possible stage of development, with risks and opportunities related to waste, energy, transport, water/flooding and land being assessed before acquisition.

Box C: Climate change definitions[8]

Climate change adaptation

Initiatives and measures to reduce the vulnerability of natural and human systems against actual or expected climate change effects. Various types of adaptation exist, such as anticipatory and reactive, private and public, and autonomous and planned. Examples are raising river or coastal dikes, and the substitution of more temperature shock-resistant plants for sensitive ones.

Climate change mitigation

Technological change and substitution that reduce resource inputs and emissions per unit of output. Although several social, economic and technological policies would produce an emission reduction, with respect to climate change, mitigation means implementing policies to reduce greenhouse gas emissions and enhance sinks.

[8] Intergovernmental Panel on Climate Change, 2007, *Fourth Assessment Report, Glossary* [online]. Available from: www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-annex1.pdf [Accessed 9 September 2008]

6 Climate change commitment

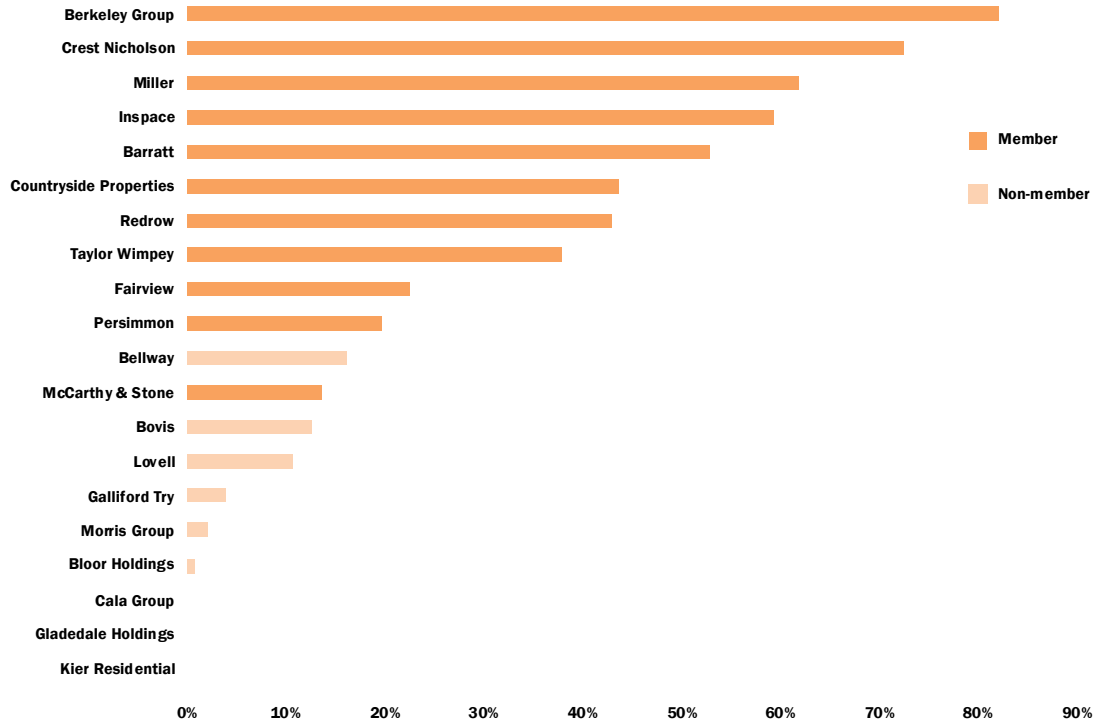
Results overview

This section on climate change commitment aimed to look deeper into how companies are addressing elements of climate change. The benchmark assessed the qualitative and quantitative targets that are being set by homebuilders and how their performance in each area is being measured. The criteria within this section also looked at which external stakeholders the companies are working with, external standards to which they are seeking relevant accreditation, and specific examples and case studies of best practice being undertaken to inform the general corporate approach and product development.

The issues analysed included environmental management systems, commitment to EcoHomes, energy, water, waste, procurement, transport, assurance and customer engagement. Each criterion is discussed in more detail in the subsequent sections.

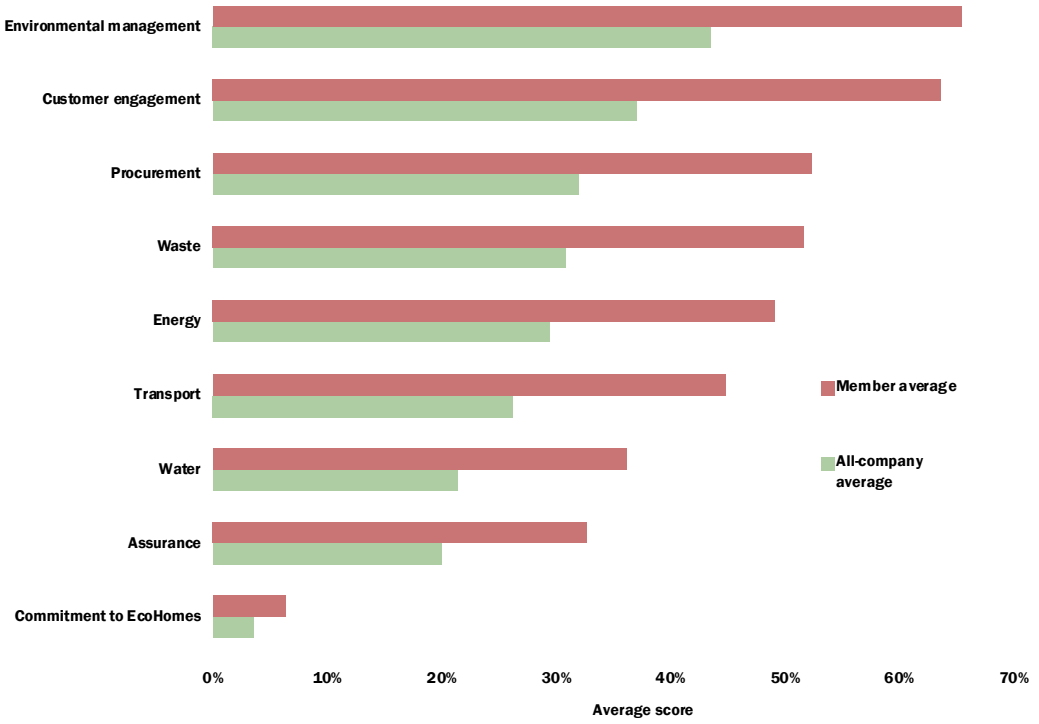
The average score across all companies was 27.7% for this section (see Figure 9). Members outperformed non-members with average scores of 46.2% and 5.1% respectively. As discussed already, the all-company average for this section was lower than that for strategy, governance and risk management.

Figure 9: Company's overall score against climate change commitment



The graph below (Figure 10) shows the all-company average and member average against each of the criteria assessed. Environmental management and customer engagement were the two highest performing sections, with average member scores above 60% and all-company average scores above 35%. Commitment to EcoHomes was by far the lowest-scoring criterion in terms of both the all-company average and member-only average, although there are specific reasons for this result. The reasons for the different scores across the criteria are looked at in more detail in the sections below.

Figure 10: Breakdown of member and all-company performance against climate change commitment



Environmental management

For companies to successfully manage climate change risks associated with business operations, they must put in place a formal system through which to develop standards and procedures for sites and offices. A key instrument in achieving this understanding of operational impacts is the development and implementation of an environmental management system (EMS). Whether undertaken internally or externally, once in place an EMS should be regularly audited to ensure standards and procedures are undertaken and adhered to. In terms of external auditing, the most frequently used accreditation standard by the homebuilders is ISO 14001. Box D outlines the standard in more detail.

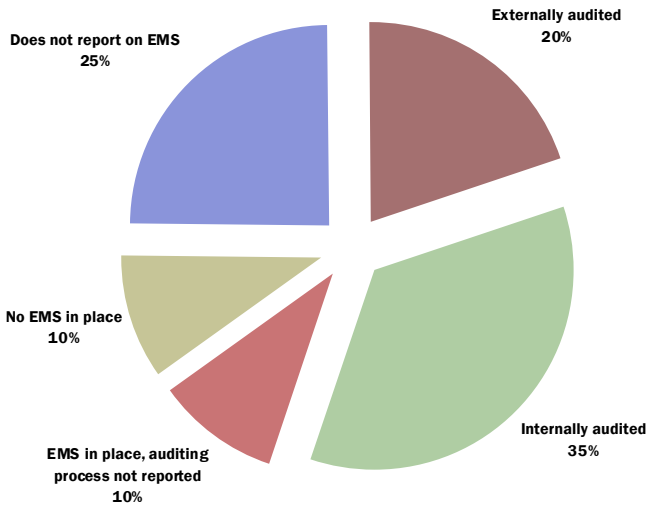
Box D: ISO 14001 environmental management systems

A formal environmental management system can provide a structured way to identify environmental impacts and legal responsibilities, set clear objectives and targets, and then implement and review changes for continual improvement.

ISO 14001 is an internationally recognised voluntary standard for EMSs. The standard specifies the actual requirements for an EMS. It applies to those environmental aspects that the company can control and over which it can be expected to have an influence. This standard is now widely recognised as an effective element in helping to sustain the environment for future generations and helping to ensure the long-term survival and prosperity of business through its three key aims of continual improvement, prevention of pollution and legal compliance.

To score points against this criterion, companies needed to demonstrate that their EMS covered key climate change-related impact areas, in addition to broader environmental issues. Figure 11 shows the number of companies in the benchmark with an EMS in place, and how this is audited. The four companies with an externally audited EMS all have full ISO 14001 certification. The majority of companies with an internally audited EMS in place operate to ISO 14001 standards, but without external certification.

Figure 11: Environmental Management Systems and auditing procedures



Energy

Aside from the environmental implications, the financial and political costs of consuming fossil fuels are high. Energy security is an international issue causing both alliances and disputes between many countries, including the UK, which became a net importer of oil in 2006[9].

The challenges that have arisen in relation to the security of supply are highlighted by declining availability of oil. Coupled with increasing global demand, this has led to rising prices across the globe. The price of a barrel of oil pushed the $100 barrier earlier this year and, while the market has begun to settle, costs associated with oil use are still presenting a significant risk to businesses.

Homeowners have also seen their electricity and gas bills rise considerably this year and the average household bill is now over £1,000 per annum. Further price hikes are predicted for future years, suggesting energy efficiency will remain high on the public agenda. This highlights the need to establish a healthy and sustainable diversity of energy supply, and prevent the spread of fuel poverty by providing affordable energy for households.

Operational

The Climate Change Bill sets out the government's target to reduce UK carbon emissions by 80% of 1990 levels by 2050. A secondary piece of legislation to this Bill is the proposed introduction of the Carbon Reduction Commitment (CRC), which is a mandatory emissions trading scheme specifically for medium- to low-energy intensive sectors such as the commercial, service and public sectors. Organisations included in the CRC are those whose annual electricity use (settled through half-hourly meters (HHM)) exceeds 6,000MWh. This is equivalent to an annual electricity bill of approximately £500,000. Organisations will have to buy emissions permits (or 'credits') at the start of each year of the scheme. Starting in January 2010, credits will be sold at a fixed price of £12 per tonne of CO_2 and this is expected to last throughout the three-year trial period. From 2013, credits will be auctioned – so the price will be determined by supply and demand factors – and the total number of credits will be reduced over time. In addition, organisations will be allowed to buy, but not sell, credits from organisations within the EU Trading Scheme.

Alongside the CRC, homebuilders will be affected by the rising utility prices outlined above in relation to their site and office operations. The rising price of oil will also increase fuel bills related to site and office transport. The business case for carefully measuring and monitoring office, site and transport energy use has arguably never been greater, especially in the current economic circumstances.

Table 1 shows those companies that are currently monitoring their energy consumption and indicates that six of these are reporting on this with varying degrees of transparency. Barratt is the only company to provide a breakdown of its energy consumption across offices, sites and transport.

[9] The Oil depletion Analysis Centre, 2007. *The UK Became Net Importer of Oil During 2006: IEA and EIA Hint Permanently* [online]. Available from: www.odac-info.org/uk-became-net-importer-oil-during-2006-iea-and-eia-hint-permanently [Accessed 9 September 2008]

Bovis, Crest Nicholson and Miller are also commended for reporting their energy consumption data for business operations and transport separately.

However, it is clear to see from the table that, similar to the waste data reported by the sector, there is little purpose in trying to draw any significant conclusions on the companies' relative performance in this area. None of the companies has normalised their data against office space, number of sites or number of vehicles (for offices, sites and transport respectively). For example, comparing Barratt with Persimmon would be fruitless as their reported energy use is very different, even though they built a similar number of units in 2006. This serves only to highlight the variance in how energy consumption data is currently measured and reported.

For companies to benefit from an understanding of their peers' performance, and for those organisations trying to benchmark company performance in this area, a greater level of detail and transparency of how these figures have been produced would need to be provided. NextGeneration is working with its members to try to gather more meaningful data so that they can understand how their peers are performing and to inform the whole sector, and interested organisations, of their progress in this area.

Table 2 shows the companies' targets for reducing their energy consumption over the next year and further into the future. Crest Nicholson, Countryside, Miller and Berkeley have all reported their target to reduce their carbon dioxide emissions by various amounts over the next year, with Berkeley setting itself the most stringent target of 20%. Countryside Properties is commended for its approach in this area and its long-term commitment to measuring operational energy consumption, with a proven track record of achieving year-on-year reductions. Crest Nicholson, Countryside, Miller and Barratt have also publicly reported their longer-term targets to achieving significant carbon dioxide emissions reductions. Crest Nicholson is commended for its commitment to reducing emissions by 25% by 2020.

Table 1: Reported operational energy use data

Operational energy use				
Company	Data reported (tonnes CO_2 unless stated otherwise)			
	Total energy consumption	Breakdown		
		Offices	Sites	Transport
Barratt	29,033	2,010	22,156	4,867[10]
Bovis	2,279[11]	1,027[12]		1,252[13]
Crest Nicholson	3,204	608.76		2,595.24
Miller	2,945	2,725[14]		220[15]
Persimmon	9,287[16]	Breakdown not provided		
Bellway	Reduction of 4,000 tonnes of CO_2 achieved (a 13% reduction in total emissions)	Breakdown not provided		
Berkeley Group	1,059 (GJ)			

[10] "Business travel (car, rail, flights)"

[11] "Offices, sites and business transport"

[12] "Total energy consumption"

[13] "Business mileage"

[14] "Offices and operations"

[15] "Business travel"

[16] "From offices, vehicle fleet, not gas from offices"

Table 2: Reported operational energy targets

Company	Short-term target	Long-term target	Relates to	Baseline used
Crest Nicholson	Stabilise over next reporting year	25% reduction by 2020	Site and office CO_2 emissions	Previous reporting year
Countryside Properties	5% annual reduction	5% annual reduction year-on-year	CO_2 emissions from office, car fleet but not site operations	Previous reporting year
Miller	Reduce by 10% by 2008	Reduce by 30% by 2012, 20% by 2010	All regions and all offices' GHG emissions	2007
Barratt	Reduce by 20% over next 3 years		CO_2 emissions from offices, transport and sites	CR Update 2007 data
Berkeley Group	Reduce by 20% by April 2008		CO_2 emissions from offices, sites and car fleet	April 2006-April 2007 data
Inspace	To undertake full carbon audit and set targets by end of 2008			

Product

With domestic housing accounting for around 27% of the nation's total carbon dioxide emissions[17], it is evident that the home-building sector has a large role to play in achieving this goal. New homes, in particular, will be in the spotlight as it is estimated that by 2050, as much as a third of the housing stock could have been built between now and then[18].

The Government is responding to this challenge through a combination of measures, including the Code for Sustainable Homes, a review of Building Regulations, and the introduction of compulsory Energy Performance Certificates, all contributing to the overall goal of zero-carbon new housing by 2016.

Code for Sustainable Homes and UK Building Regulations

The Code for Sustainable Homes is a standard for key elements of design and construction which affect the sustainability of a new home and has been introduced with the intention of driving a step-change in sustainable home building practice. The Code considers not just energy/carbon but a range of sustainability issues such as water, waste and materials.

There is currently no prescribed timetable for the implementation of the full Code for Sustainable Homes itself (i.e. all of the elements it encompasses), but since May 2008 it has been mandatory for newly built homes to be certified against the Code. This requirement to have a rating against the Code does not make it obligatory to build a Code home or to have each new home assessed against the Code. It does however mean that buyers must be made aware of the status of their home.

[17] Department for Communities and Local Government, July 2007, *Building a Greener Future: Policy statement* [online]. Available from: www.communities.gov.uk/documents/planningandbuilding/doc/Buildingagreenerfuture.doc [Accessed 9 September 2008]

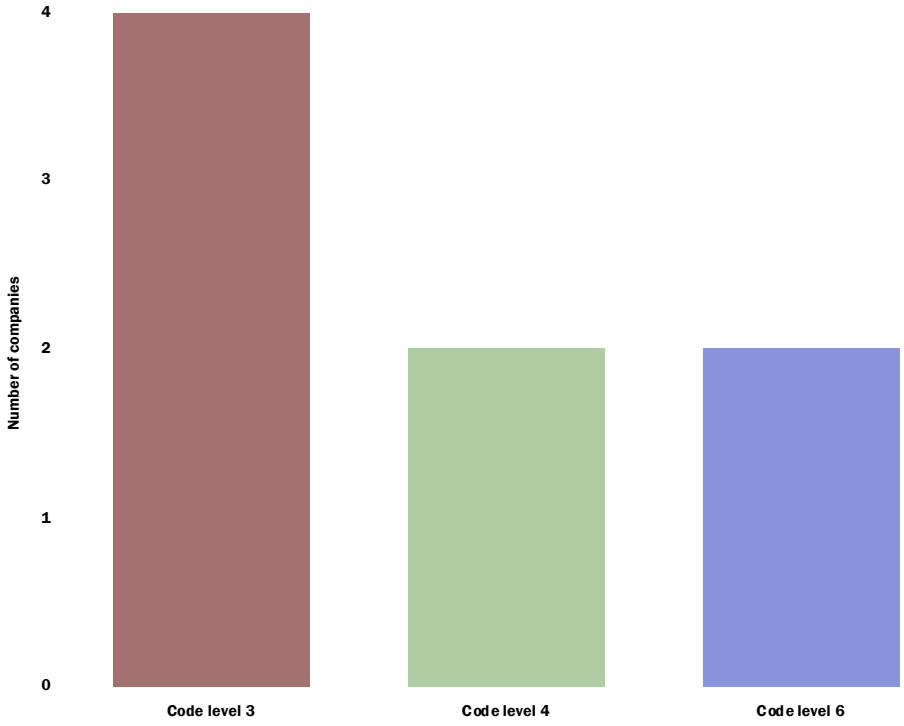
[18] Department for Communities and Local Government, July 2007, *Building a Greener Future: Policy statement* [online]. Available from: www.communities.gov.uk/documents/planningandbuilding/doc/Buildingagreenerfuture.doc [Accessed 9 September 2008]

While the Code itself is not yet mandatory, it is driving the Government's goal to progressively improve energy/carbon performance ahead of implementation of regulatory standards. Future developments of the Building Regulations in relation to carbon emissions associated with energy use in the home set a goal to achieve zero carbon new housing within 10 years, as set out in the 2007 Policy Statement, Building a Greener Future. This shows a reduction in energy use, in line with increasing levels of the Code, in three steps. Firstly a move in 2010 to a 25% improvement in the energy/carbon performance set in Building Regulations, increasing to a 44% improvement by 2013, and, finally in 2016, to zero carbon, as shown in the diagram below:

Date	2010	2013	2016
Carbon improvement as compared to Part L (Building Regulations 2006)	25%	44%	Zero-carbon
Equivalent energy/carbon standard in the Code	Code level 3	Code level 4	Code level 6

Likely changes to Building Regulations, beginning with their review in 2010 (on which consultation will start late 2008/early 2009), will include a strengthening of the requirements in relation to insulation, ventilation, air tightness, heating and light fittings.

Figure 12: Commitments made to achieving levels of the Code for Sustainable Homes



Home builder commitments to Code for Sustainable Homes

Of the top 20 homebuilders, four companies have made a commitment to achieving Code level three energy standards ahead of government deadlines, with The Berkeley Group and Barratt publicly committing to developments seeking planning permission to be Code level three compliant by January 2008 and July 2008 respectively. Many homebuilders have expressed concern about the feasibility of achieving the higher code levels, especially in relation to the potential added costs, and the specific definition of zero-carbon. This may explain the reluctance of homebuilders to commit future developments to these standards, with just two homebuilders setting internal targets for Code levels four and six (see Figure 12). All four developers with such commitments are members of Next Generation.

With consumers increasingly making environmentally-conscious purchasing decisions, and Local Planning Authorities often favouring developments that can demonstrate a certain level of renewable energy provision, or improvements against energy related Building Regulations, homebuilders setting targets ahead of the government timetable may be placing themselves at a significant advantage within the market.

Affordable Housing and the Code for Sustainable Homes – energy

Despite there being no prescribed timetable for the implementation of the Code, in some cases it is already necessary to commit developments to a certain level, with standards uniquely being driven by the affordable housing sector.

- Homes funded under the Housing Corporation's 2008-11 National Affordable Housing Programme (NAHP) must currently build to the Code for Sustainable Homes level three;
- All developments that receive funding from English Partnerships must currently reach a minimum of Code level three;
- When issuing planning permission, many Local Authorities are committing developers to a minimum standard of level three, and some require level four.

This may place strain on those companies that build government-funded units, or, more positively, may be viewed as an added impetus for research and development. Companies, such as Inspace, build primarily for the affordable market, and have scored well in aspects of the energy section of the benchmark as a result of this.

Renewable energy solutions

A variety of renewable energy solutions are being trialled by homebuilders, which is a commendable lead for the industry to be taking. However, questions still exist as to whether the impetus for increasing the take-up of alternative energy sources should come through new housing, or a government energy strategy. There is also currently a debate as to whether community-scale and off-site renewables are to be included in the definition of zero-carbon, and how they may contribute to higher levels of the Code. Following a recent court ruling in Germany, issues have also been raised over the feasibility of private-wire systems. In the German case, it was ruled that there has to be open, third-party access to energy supply systems to avoid a monopoly situation arising.

Innovative projects

In May 2008, Barratt completed the first zero-carbon home to be built by a volume homebuilder (see Image 1). The Green House, at BRE's Innovation Park in Watford, features several innovative energy solutions, including:

- Aircrete concrete wall panels and pre-cast concrete floor slabs – heavyweight concrete construction achieves high thermal mass, which mitigates peaks and troughs of temperature change within the house;
- An Air Source Heat Pump converts the energy of air from indoors or outdoors into heat, supplying the internal needs of the house;
- Clothes drying is achieved at the head of the stairs using warm air rising through the house, which avoids the need for energy intensive tumble driers;
- Automatic window shutters help prevent over-heating of the house during the summer;
- Solare PhotoVoltaic panels on the south-facing roof and the adjacent building simulate a district power supply.

Barratt will be transferring these lessons to other developments in the future and has already been selected to build the first large-scale zero-carbon community in the country. It is Preferred Developer for the former Hanham Hall Hospital site near Bristol, the first of the English Partnerships' Carbon Challenges, where all 200 units will meet level six of the Code for Sustainable Homes. The homes will be completed in 2011 and at least a third will be affordable.

Other examples of housebuilders taking an innovative approach to understanding energy solutions on site can be seen at Miller Homes' Merton Rise project (see Image 3) and Taylor Wimpey's Oxley Park development (see Images 4 and 5).

Image 1: The Barratt Green House at the BRE Innovation Park in Watford

Image source: http://www.bre.co.uk/page.jsp?id=1221

Image 2: Stamford Brook (Taylor Wimpey / Redrow)

Image source: http://www.redrow.co.uk/img/assets/developments/17/siteplan.pdf

Redrow, at Stamford Brook, has sought to use existing techniques and traditional building methods to improve energy efficiency and reduce carbon dioxide emissions (see Image 2). The majority of the 700 properties on the site are traditional brick and block cavity construction under a tiled roof and incorporate:

- Highly insulated buildings free from serious thermal bridging;
- A high level of airtightness;
- Heating and ventilation systems that minimise carbon dioxide emissions.

The development is part of the “Partners in Innovation” project, facilitated by Leeds Metropolitan University. This project is looking at improving the energy efficiency of masonry dwellings and aims to demonstrate what is achievable on a commercial scale by volume homebuilders.

Image 3: Miller Homes Merton Rise development

Image source: www.propertyfinder.com/cgi-bin/rsearch?a=o&id=503006071

Image 4: Oxley Park, Taylor Wimpey development

Image source: www.oxleywoods.com/Oxley_Woods_Lo_Res_We_1_.pdf

Image 5: Oxley Park, Taylor Wimpey development

Image source: www.oxleywoods.com/Oxley_Woods_Lo_Res_We_1_.pdf

Post-construction monitoring

Transferring lessons learned will be an important aspect of taking forward the new zero-carbon Homes agenda. Detailed post-construction and post-occupancy monitoring is an essential part of this, highlighting what works and any issues that may need to be addressed. Eight out of the top 20 homebuilders currently undertake, or have committed to, some form of post-construction monitoring.

The Barratt Green House, for example, will be the subject of rigorous scientific testing over a two year period to assess every aspect of the design, construction and materials. The Berkeley Group, too, is testing customer perception of various energy efficient technologies at the Envirohome, Kennet Island. More details on this are available in the Customer Engagement section. Further examples of monitoring within the industry include Persimmon, which is monitoring the energy efficiency of installed appliances, the majority of which are rated A or B. Miller monitors the proportion of customers who maintain their subscription to a green energy tariff, which is connected at handover.

Water

Despite heavy rainfall in certain areas, large scale drought is affecting the UK. Each person in the UK uses approximately 150 litres of water a day for cooking, cleaning, washing and flushing the toilet, yet some parts of the country have less water available per person than Sudan and Syria! Higher temperatures caused by global warming combined with population growth are likely to trigger an increased demand for water, placing yet further strain on this resource in the future.

Global warming is also likely to increase the intensity of climatic events – a phenomenon that can already be seen. In the summer of 2007, thousands of properties across Britain were flooded and almost half a million people were without mains water or electricity, highlighting a need for fundamental changes in the way the country may adapt to this.

Operational water use

While many homebuilders have recognised the costs and benefits of measuring operational energy consumption and waste generation, the same cannot be said for operational water consumption. Table 3 provides an indication of the lack of data monitoring in this area, in terms of both offices and sites. Barratt, Bellway and Crest Nicholson are all commended for their commitment to measuring water consumption and for reporting transparently on what proportion of their operations this covers. Barratt, Berkeley and Crest Nicholson are also recognised as leading in this area in light of the reductions targets set (see table 4).

Water is an expensive resource, with costs associated with usage, energy for heating and cooling, treatment and disposal. This is easily overlooked as many companies pay for their water via a standing charge. However, this situation is likely to change, as water meters become common place. As this comes into effect, the monitoring of operational water consumption will become easier to undertake as the current metering system makes it very difficult for companies to understand how much water they are actually using.

Table 3: Reported operational water consumption data

Operational water use			
Company	Data reported		
	Total water consumption	Breakdown	
		Offices	Sites
Barratt	456,200 m3		456,200[19]
	29.4 m3 /unit		29.4[20]
Bellway	11.68 l/ m2		11.68[21]
Crest Nicholson	5,632 m3	5,632	

Table 4: Reported operational water consumption targets

Reported operational water reduction targets			
Company	Target	Relates to	Baseline used
Barratt	Reduction of impact by 20% over next 3 years	Offices and sites	CR Update 2007 data
Berkeley Group	Reduction of 20% by April 2008	Offices and sites	April 2006- April 2007 data
Crest Nicholson	Stabilise consumption during next reporting year	Operational water use	Data from last reporting year

Water use in homes

Water supply is an especially pertinent issue in this year's climate change benchmark, due to the anticipated changes in precipitation that may result from climate change, alongside an increase in demand for water if temperatures increase as expected. The Housing Green Paper, "Homes for the Future: More Affordable, More Sustainable", published in July 2007, highlighted the importance of setting new minimum standards to support sustainable water use in new homes to achieve an improvement of almost 20% on current average usage and emphasised the importance of effective flood risk management.

[19] "Estimated total construction"

[20] "Water used in construction process"

[21] "Site and unit based"

Water supply and flooding

In the summer of 2007, thousands of properties across Britain were flooded and almost half a million people were without mains water or electricity. The Pitt Review, published in June 2008, examined the causes and effects of the flooding and urged fundamental changes in the way the country is adapting to the likelihood of more frequent and intense periods of heavy rain. The Review put forward 92 recommendations, including some that may impact on homebuilders, through changes to legislation, new and amended planning guidance and changes to Building Regulations.

Future Water[22], the government's Water Strategy for England, was published in February 2008 and sets out the government's vision for the water sector by 2030. It includes the overarching target of reducing domestic water usage to 130 litres per person per day, with even more stringent targets for new build housing (average current use is estimated to be around 160 litres).

The government is also currently considering ways of regulating water fittings with especially high water usage such as wet rooms. This is likely to include amending the Water Supply (Water Fittings) Regulations 1999 to make them notifiable to the local water company, and specify the compulsory fitting of water metres.

Code for Sustainable Homes and UK Building Regulations

The Code for Sustainable Homes sets minimum standards for water use at each level, with a Code level three home requiring internal potable water consumption to be no more than 105 litres per person per day, reducing to just 80 litres for a Code level five or level six home. This makes meeting the water component of the Code one of the most arduous aspects of the standard, and therefore one in which homebuilders would be wise to invest significant research resources.

The Berkeley Group, Crest Nicholson and Barratt have made public commitments to reach the Code level three water component. While six of the companies included in this year's benchmark have shown that they have, or are in the process of, carrying out research with a view to achieving the higher levels of the Code, no company has yet made a formal commitment to Code levels five or six.

Further research into water saving devices and technologies, such as rainwater harvesting and grey water recycling, is necessary. Engagement with suppliers, such as that done by The Berkeley Group and bathroom specialist Villeroy & Boch, is the key to success in this area (see the Procurement section).

Affordable Housing and the Code for Sustainable Homes – water

As is the case with energy efficiency, due to conditions associated with public money, water efficiency in new homes is also being driven by the affordable housing sector. Inspace have performed well in relation to the water section of the benchmark, possibly as a result of their focus on the affordable market. For more information on this, refer to the energy section above.

Innovative projects

At Innova Park, The Berkeley Group has built two ultra-low water use units. One includes low water-use fittings and appliances and a greywater recycling system to provide water to all non-potable applications. It is expected that this house will achieve a reduction in water use of over 40% when compared with a standard house. The other unit includes all the same water efficiency measures but replaces the greywater system with a rainwater harvesting system to again feed all non potable applications. Both units will be monitored to help understand the effectiveness of these technologies in reducing water use, and user perception.

Post-construction monitoring

Only three of the companies included in this year's benchmark are carrying out post-occupancy monitoring on water use in their properties, such as at the Berkeley development, Innova Park. This is 25% less than the number of companies that carry out investigations into post-occupancy energy use. This is essential in establishing how the issue of water efficiency may best be tackled if companies are able to ensure compliance with future initiatives and obtain the higher Code points.

[22] Defra, 2008. *Future Water: The Government's water strategy for England* [online]. Available from: www.defra.gov.uk/environment/water/strategy/pdf/future-water.pdf [Accessed 9 September 2008]

Waste

From 6 April 2008, it has been compulsory for all construction projects in England costing more than £300,000 to have a site waste management plan (SWMP). This is a live document that provides a structure for waste delivery and disposal at all stages during a construction project.

The Strategic Forum for Construction and the Construction Products Association have set targets of 50% reduction of construction, demolition and excavation waste to landfill by 2012, compared with 2008, and a 20% reduction in construction packaging waste. The 2007 Waste Strategy for England also includes much reference to the recycling of household waste, so this issue is likely to grow in relevance to homebuilders.

The management and disposal of waste contributes to the effects of climate change due to the associated GHGs. The products being disposed of, and the manner in which waste is dealt with, emit both carbon dioxide and methane gases. The latter is produced when waste is landfilled and, somewhat alarmingly, science suggests that "weight for weight methane is 21 times more powerful than carbon dioxide as a greenhouse gas"[23]. This is a clear indication of why sending waste to landfill is no longer a viable strategy for the UK, hence the legislative nature taken by the government to address this key climate change issue.

As the waste agenda is largely being driven by regulation, homebuilders must ensure that they have mechanisms in place to be fully compliant with current and forthcoming legislation. Due to this statutory nature of waste management, company examples given below are of exemplary practice in the sector, often demonstrating action throughout the entire supply chain or inventive schemes.

Construction

For the housebuilding sector, the largest impact area in terms of waste is that produced during the construction process. The construction industry in England uses around 400 million tonnes of materials every year[24] and produces approximately 1.45 tonnes of waste for every person living in the UK[25].

Good waste management has been an attribute of the housebuilding sector for some years now. However, this year's benchmark reveals a greater focus on measuring construction waste and setting reduction targets than previous surveys, probably driven by the introduction of legislation and the associated cost-savings.

The use of Modern Methods of Construction (MMC) is allowing companies to reduce the amount of on-site waste generated. Persimmon, for example, has employed an off-site prefabrication process, which has yielded estimated efficiency increases of 10% compared with traditional building techniques. The waste management procedures in place at Persimmon are allowing them to quantify the amount of waste they are recycling, compared with sending to landfill, and are encouraging on-site reuse of materials such as bricks, soil and rubble from demolition waste.

At Miller Homes' Millennium Village in Leeds, waste produced per unit has been reduced by 50%, a figure that was externally audited by English Partnerships. Miller also has a specific plasterboard recycling policy in place, in addition to an overarching waste management policy.

Ten of the 20 companies benchmarked were revealed to be measuring construction waste and are disclosing data through reporting. Table 5 shows this data and the different measurements used across the different companies collecting it. It is clear to see that currently, with the variance in the parameters for data collection and the different ways in which it is reported, it is not feasible to compare companies. For homebuilders to understand their relative performance against peers, there needs to be a shift towards more consistent data collection and reporting (this is not limited to just waste data). NextGeneration is working with its members and other organisations to promote the benefits of more consistent and reliable data collection and to provide the industry with a coherent set of indicators by which performance can be assessed.

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[23] Defra. 2008. *Climate Change and Waste Management: The Link* [online]. Available from: www.defra.gov.uk/environment/waste/wip/newtech/pdf/ClimateChange3.pdf [Accessed 9 September 2008]

[24] Department for Business, Enterprise and Regulatory Reform, 2008. *Strategy for Sustainable Construction* [online]. Available from: www.berr.gov.uk/files/file46535.pdf [Accessed 9 September 2008]

[25] NetRegs, 2008. *Site Waste – It's Criminal* [online]. Available from: www.netregs-swmp.co.uk/simple-guide-20080528.pdf [Accessed 9 September 2008]

Table 5: Reported construction waste data

Company	Construction waste reported data
Barratt	**478,000 m³** total waste **39%** of waste segregated on site for recycling **30.8 m³** waste per unit **218,291 m³** inert material reused on site
Crest Nicholson	**2,508** tonnes CO_2 emissions from construction waste produced **5,219** tonnes waste to landfill **77%** waste recycled
Countryside	**14 m³ /100 m²** waste produced **18%** decrease since last reporting period
Berkeley	**34,486** tonnes of waste
Persimmon	**150,500** tonnes of house building waste **9.5** tonnes for every home built
Taylor Wimpey	**24%** waste to landfill 5.14 tonnes waste per unit **86%** waste segregated on site
Bellway	**2,242** waste skips disposed of from sites containing hazardous materials **18,699** skips of recycled materials **9,821** skips of inert waste to landfill, 12,763 skips of general waste to landfill **3,900** tonnes of plasterboard recycled **36%** increase in on-site recycling **144,731** tonnes total material recycled
Bovis	**1000** tonnes plasterboard recycled
Inspace	**500** tonnes plasterboard recovered
Lovell	(Reporting states data on proportion of waste sent to landfill collected but it is not disclosed)

In addition to collecting data, five companies have publicly reported on their short-, medium- and long-term targets for reducing construction waste generation. These are outlined in table 6. Crest Nicholson has transparently reported its stretching targets for reducing waste sent to landfill, with a long-term goal of decreasing its impact in this area by 50% by 2011 – a year ahead of the government's 2012 target. The Berkeley Group is also commended for setting a 50% reduction target to be achieved by 2010, and therefore two years ahead of the government's schedule.

Table 6: Reported construction waste targets

Company	Construction waste targets	
	Short-term	Medium/long-term
Crest Nicholson	**10%** reduction target in waste to landfill in next reporting year	**50%** reduction in waste to landfill by 2011, zero waste to landfill by 2012
Barratt		**20%** reduction in waste impact over next 3 years
Countryside	**5%** year-on-year reduction	
Berkeley	**30%** reduction in waste to landfill in 2008/09	**50%** reduction in waste to landfill by 2010
Miller	**20%** reduction target for waste to landfill in 2008	Minimal waste to landfill by 2010

As well as using data to set reduction targets, The Berkeley Group has been monitoring its construction waste through its innovative Waste Data Tool and using this to inform cost-savings related to good waste management. It has quantified that financial savings from diverting nearly 30,000 tonnes of waste from landfill to be over £850,000, clearly demonstrating the business case for undertaking rigorous measuring techniques of operational impacts.

In addition to reducing the amount of waste generated through the construction process, Crest Nicholson is working with WRAP and its suppliers to build take-back agreements into contracts, and is looking at site storage practices to minimise spoilage of goods.

Office

While legislation and cost-savings are driving homebuilders to better manage construction waste, fewer companies are measuring the waste generated by their non-construction operations. Six have provided evidence to NextGeneration of doing so, but not all of these report on this in the public realm.

Commonly “champions” are recruited within offices to drive the agenda forward through initiatives that range from procuring ethically sourced or recycled goods, such as paper, to encouraging double sided printing, and the use of mugs and glasses, as opposed to paper cups.

Countryside Properties has already increased the amount of paper and cardboard that is recycled within its offices by 15%, and has set a target to continue to increase this by 5% annually. Crest Nicholson, too, has increased office recycling rates from 9% to 21.5% and is working to increase recycling rates by 10%, alongside reducing office waste produced to an average of 200kg per annum per employee.

Development

As well as reducing waste produced during the construction and operational processes, homebuilders are increasingly making efforts to encourage residents on their developments to reduce and recycle. The waste produced and disposed of during the occupational lifetime of a development is clearly significant and it is an issue that the average homeowner is becoming increasing aware of. This will only be heightened if suggested proposals to tax households for the waste they produce are introduced. Those buying new homes will expect provisions to be in place in order to make recycling as simple as possible.

Driven by a preference given by planners to schemes that further civic ambition, alongside wider corporate responsibility goals, developers are installing internal recycling facilities and linking new developments to Local Authority recycling schemes. For example, of 15,517 units completed by Barratt, 5,153 of these have access to a communal waste recycling facility and 1,588 have internal waste recycling facilities.

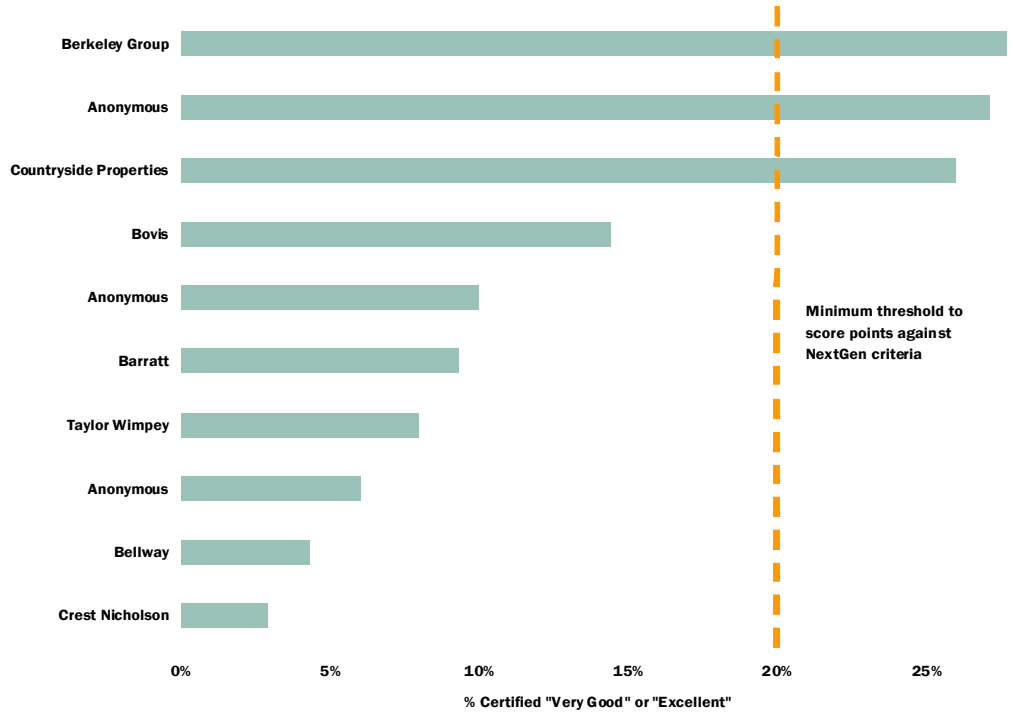
Some developers, such as Crest Nicholson and The Berkeley Group, are focusing not just on the physical fabric of the development, but are also taking a more educational role to encourage behaviour change. Through their websites and brochures, they are providing information to residents about sustainable living, including why recycling is important and where their nearest facilities are.

One project that should be noted for innovation and success is Countryside Properties' Nightingale Estate in London. Here, a Community Development Fund was set up by Southern Housing Foundation and Countryside Properties at the beginning of the project. This fund was used to support the Hackney Recycling Partnership. The purpose of the Partnership is to encourage and support community-wide recycling to deliver a sustainable quantity of biodegradable material for reprocessing. The project is community-led and has led to the creation of 11 new jobs as well as a boom in recycling in the area. It has grown to become the borough's largest recycling partnership, handling, among other materials, over 400 tonnes of park waste.

Commitment to EcoHomes

While recognised as the housing industry standard for assessing the environmental performance of homes since 1990, EcoHomes is being superseded by the Code for Sustainable Homes. As discussed in the benchmarking report last year, to date EcoHomes certification has primarily been driven by affordable housing funding and local planning requirements in the home building sector, resulting in many companies performing poorly against this criterion. The average performance (3.5%) is even poorer this year than in 2007 (8.5%), most likely due to the industry refocusing on the new standards and targets introduced to reach the levels of the Code. However, it remained as a criterion in this year's benchmark to capture data published in the last reporting year (see Figure 13).

Figure 13: Commitment to EcoHomes



While there are 10 companies with readily available EcoHomes data, of which seven publicly disclosed this information, only three scored above the minimum threshold set by NextGeneration (20% of homes to be certified to at least Very Good).

This level of performance partly reflects the housing sector's historical lack of commitment to building homes to standards above Building Regulations. It is also a result of the perceived lack of demand for more environmentally efficient homes meaning they do not command a premium. Developers are therefore not willing to absorb the additional costs associated with gaining EcoHomes certification.

While this would indicate that things do not bode well for the introduction of the Code for Sustainable Homes, UK homebuilders have really stepped up to the challenge of delivering on the government's targets and ensuring they can feedback on the technical and commercial problems of achieving certain levels, especially five and six.

Transport

Construction

Performance in relation to reducing carbon dioxide emissions from construction-related transport activities on site varied greatly. Of notable concern is the fact that non-members scored zero against the construction transport criteria.

Crest Nicholson has committed to conducting a carbon intensity study during its next reporting year. This will assess the emissions associated with building materials and construction activities, and include commuting by site workers. During the same period, the company will also establish systems to monitor carbon dioxide emissions from construction-related transport activities on site and work with contractors and suppliers to encourage the use of alternative, low-carbon fuels. Inspace, too, committed to carrying out a carbon footprinting activity covering all of its activities, including construction, during 2008.

Taylor Wimpey has been working with its key logistics company, who supply a range of products to the sites. They now source bulk materials from manufacturers, and prepare "just-in-time" delivery of buildpacks for each stage of the build process, consolidating a range of materials to a single delivery and preventing multiple site visits.

Another company, which has chosen not to report publicly on reducing the impact of construction-related transport, scored highly during the phase two analysis for its approach in this area. This developer provided evidence to show that it is working with 11 of its suppliers and logistics companies to measure delivery mileage to sites. Once these have been established, the aim is to offset related carbon emissions in the short term, and to set reduction targets going forward.

Office

Crest Nicholson and The Berkeley Group have set upper limits on the CO_2 emissions allowable for new company cars, and are monitoring this to inform reduction targets. The Berkeley Group, for example, committed to a 20% reduction in emissions during 2006/07, which included emissions from business travel. Countryside Properties is monitoring the carbon profile of its headquarters, and car fleet emissions, and has set an annual reduction target of 5%.

Several companies provided examples of initiatives that are encouraging staff to walk, cycle or use public transport to get to and from work, and on business travel. Crest Nicholson, for example, promotes car sharing, and The Berkeley Group is rolling out Green Travel Plans across all offices and sites that are operational for over six months.

Development

The Berkeley Group was the highest scoring developer in considering how to reduce CO_2 emissions from development-related transport emissions. Several Berkeley Group projects include car clubs, including an electric car club at St George Wharf and a hybrid car club at Parkwest, West Drayton. One London development will provide electric vehicle re-charging facilities. The company's development at High Wycombe is providing an allowance to each home to purchase cycle equipment and other innovative initiatives include having a travel coordinator and a sustainable travel voucher scheme.

Further examples of innovative transport solutions on developments include:

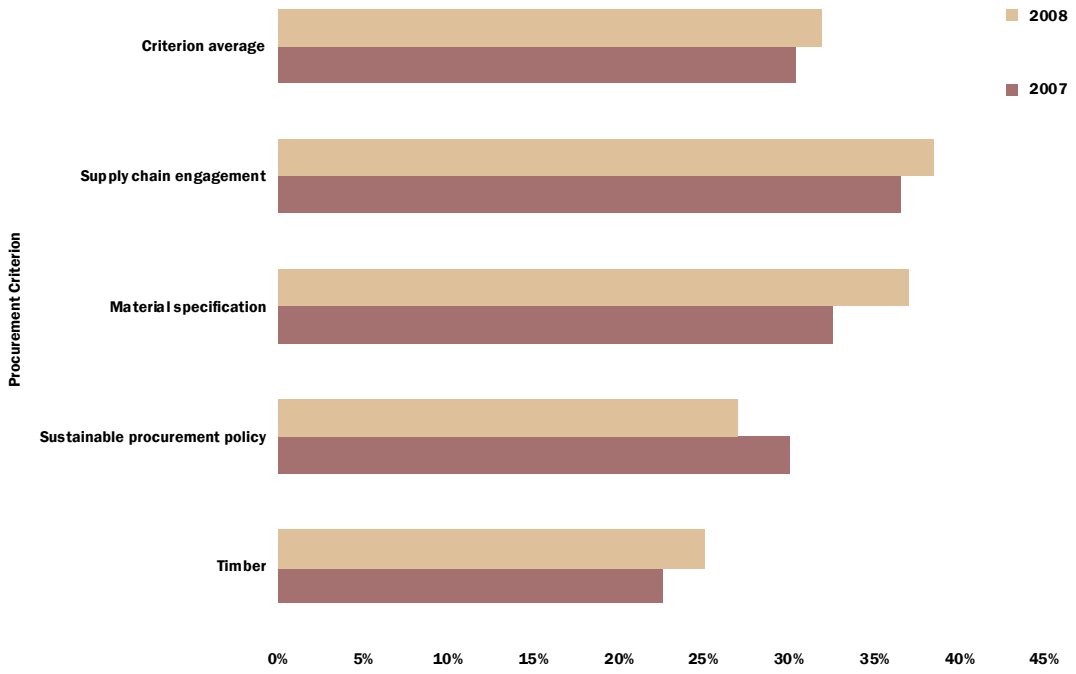
- Miller's Millennium development in Leeds, where live-work units have been constructed in line with a Green Travel Plan, to minimise the need for car use.
- Countryside Properties Space2 development in London is located within walking distance of three underground stations, and is served by numerous bus routes.
- Crest Nicholson is committed to providing cycle storage on all developments submitted for planning from 1 January 2008.

Leading developers are also making significant contributions to enhancing the local public transport infrastructure, often through Section 106 agreements. For example, The Berkeley Group is creating a new Crossrail terminal at Woolwich.

Procurement

The detail behind the procurement criteria for both the 2007 and 2008 benchmarks has stayed broadly the same; these are therefore the most comparable of all the criteria over the two years. The graph below (Figure 14) shows the year-on-year all-company average performance for the top 20 homebuilders. It shows that average performance has improved against the criteria overall from 2007 to 2008, and specifically for supply chain engagement, material specification and timber. Relative average performance for this year's benchmark was down on 2007 in relation to sustainable procurement policy. The detail of this element of the criteria did become more stringent for 2008 – companies were assessed on the auditing of their corporate sustainable procurement policies – which offers the most likely explanation for underperformance in 2008.

Figure 14: Breakdown of performance against procurement criteria for 2007 and 2008 benchmarks



The individual criteria within the procurement section are looked at in more detail in the following sections.

Sustainable procurement

The application of good procurement practice is crucially important in all corporate procurement decisions. It may, for example, contribute to reducing the overall cost of a project, ensure that projects are designed and built to fulfil their brief, and with sufficient longevity, and also help to manage risk. With specific reference to sustainability, good procurement practice reduces potential reputational risks that would arise if suppliers were found to exploit workers, or have a poor environmental compliance record, for example.

In addition, companies need to ensure that their procurement policies and practices encompass climate change considerations. This must apply to both the materials that are being procured and how they are produced, as well as how they are transported from source and to site. Issues such as embodied energy, recycled content and water consumption during material processing must be addressed.

The output of the UK construction industry is worth over £100billion a year and accounts for 8% of the Gross Domestic Product (GDP), illustrating the significant purchasing power of developers, and thus influence on suppliers of goods and services. This is recognised by the recent Strategy for Sustainable Construction[26], where it is proposed that 50% of UK buildings and construction schemes over £1million in value use stewardship and responsible sourcing principles by 2010. This is likely to drive up standards and efficiencies within the built environment, and in turn reduce the number of products which embody poor labour or environmental practices and standards.

[26] Department for Business, Enterprise and Regulatory Reform, 2008. *Strategy for Sustainable Construction* [online]. Available from: www.berr.gov.uk/files/file46535.pdf [Accessed 9 September 2008]

In terms of policy development, 35% of the top 20 homebuilders have established a sustainable procurement policy. Of these, three homebuilders are seeking external auditing of the policies and procedures in place and the remaining four are undertaking internal auditing. The depth and scope of companies' sustainable procurement policies do, however, vary markedly, with most focusing more on either social or environmental factors, as opposed to a combination of both. The Berkeley Group has established a Sustainable Procurement Forum to guide the implementation of its Sustainable Procurement Policy across its business. Once this work is complete, it will be made publicly available.

Material selection and supply chain engagement

Supply chain engagement is key to disseminating the company approach to climate change beyond its immediate impact areas. With sustainable procurement policies and procedures in place, companies can improve material specification through a more engaged approach to supply chain management. Companies need to ensure they are working with their suppliers to understand their performance in terms of climate change issues and include criteria on this during selection and renewal of contracts.

Forty-five per cent of the companies ranked by Next Generation are currently incorporating environmental criteria into their supplier selection, and 89% of these are actively monitoring the performance of their supply chain.

Several companies, including Crest Nicholson, The Berkeley Group and Redrow are setting out clear preferences for materials and services that meet minimum environmental standards, such as BRE Green Guide to Specification, for recycled products, or for products sourced from suppliers with an Environmental Management System registered to ISO 14001. Miller Homes has committed, through its 2008 targets, to its 2008 supplier audit including social and ethical issues as measured against International Labour Organisation standards, and it will study the impact of embodied energy within its supply chain.

Procurement challenges are also posed by the Code for Sustainable Homes in, for example, sourcing materials and appliances with specifications that are Code compliant. In this regard, a number of homebuilders are engaging with their suppliers in order to explore joint solutions and the possible necessity for the design of bespoke goods. Miller Homes will be assigning all major suppliers an "improver topic" to improve the sustainability credentials of their products or the way they transact with Miller. The sector is likely to see this relationship building and joint working become increasingly necessary for homebuilders as higher levels of the Code are demanded, and public awareness of ethical sourcing continues to increase.

Team members at Taylor Wimpey already hold regular performance review meetings with supply chain partners, and complete periodic online reports assessing the performance of suppliers and subcontractors. All aspects of supplier performance are covered through these processes, including cost, quality, service, health and safety and corporate social responsibility. The data from each report is then consolidated by the system for analysis and is used to manage and develop each supplier and subcontractor. Taylor Wimpey sets individual supplier targets and monitors performance against these, making comparisons with other suppliers within the same trade or undertaking a geographical comparison, and uses these reports in future supply chain decisions.

Timber

According to a recent report, the UK is the second largest importer of illegal timber products, importing £10 billion of illegally logged wood during 2007[27]. Due to the nature of the timber industry, and the quantities used in homebuilding, this issue is often singled out by homebuilders, in addition to their over-arching procurement policies. Points are available within the Materials section of the Code for Sustainable Homes, for the responsible procurement of timber.

[27] WWF, 2008. *Illegal Wood for the European Market* [online]. Available from: www.assets.panda.org/downloads/illegal_wood_for_the_european_market_july_2008.pdf [Accessed 9 September 2008]

Seven companies have publicly available timber policies, but only three of these are externally audited. This is an improvement on last year, where the 2007 Next Generation benchmark found only five companies to have a timber policy in place. Redrow remains the only full member of the WWF-UK Forest & Trade Network (WWF-UK FTN), making theirs the most robustly audited of all companies included in the benchmark. The FTN is a partnership between WWF-UK and business that promotes and progresses responsible management of the world's forests. Crest Nicholson is also working with the WWF-UK FTN to develop and ensure the implementation of its timber policy, and is committed to increasing the amount of certified timber purchased over time. All of Taylor Wimpey's bulk timber, and 90% of other timber, is currently procured from sustainable sources.

Customer engagement

More often than not, research undertaken to understand the market for sustainable homes comes to the same conclusions: customers say they want to live in more sustainable, more efficient housing, but few are willing to pay for homes built to higher environmental standards. Encouragingly for new build homebuilders, the recent Energy Savings Trust (EST) report "Hidden Value Guide"[28] has arguably bucked the trend in terms of outcomes to its research into the market for sustainable homes. The report associates the "carbon appeal", and the market's willingness and ability to pay for it, to the introduction of Energy Performance Certificates (EPCs).

However, the recent update to Cyril Sweett's "Cost Analysis of The Code for Sustainable Homes"[29] implies that the payback periods for the costs associated with building to higher levels of the Code are far beyond the average time someone spends in their home – around seven years. The worst case scenario for the increase in cost of building to Code level six is estimated to be £22,555 - £47,533, depending on house type. If these costs were fully absorbed by the customer, they would need to see annual savings of between £3,200 and £6,800 to cover the cost of this premium for a more efficient home. Even in the face of current dramatic increases in utility prices, savings of this magnitude are impossible. This highlights the issue of how increased costs of building to zero-carbon standards should not be entirely borne by the purchaser. The government must assess how to account for this in light of the significant broader societal benefits of avoiding greenhouse gas emissions, specifically carbon dioxide, associated with homes built to increasing Code standards.

There is also a strong case for homebuilders to market more aggressively the benefits of the more energy and water efficient homes they are building now (most likely meeting Code level three standards), driven by planning or corporate commitments. Home owners have seen their electricity and gas bills increase considerably this year; the average household bill is now over £1,000 per annum. The costs associated with building to Code level three against these rises in household utility bills make the payback periods seem more reasonable than those related to the higher levels of the Code.

Compared with last year's NextGeneration benchmark, an increased number of companies have shown they are engaging with their customers, with five of the 20 benchmarked performing excellently (achieving 100%) against this criteria. However, the graph below shows there is a very large discrepancy between member and non-member scores, with the non-member average for customer engagement being just 4.4%.

During the past year, seven of the top 20 homebuilders have carried out their own research into the markets for sustainable homes, demonstrating a desire to further understand the market. In addition to market research, homebuilders are using a number of other approaches and tools, outlined below, to capture demand for more sustainable housing.

In January, Miller Homes launched mymillerstreet.co.uk, an innovative website where residents on Miller developments can link up with their neighbours and learn about sustainable living (see Image 7). The site also includes useful information for residents about their homes, local amenities, transport links and environmental resources. Other companies are providing this information through online guides, such as Crest Nicholson's Guide to Greener Living (see Image 8), or via handover packs/home owner guides, such as the Redrow Homebuyer Guide, which are provided to residents on completion, or when they move in.

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[28] Energy Saving Trust, 2008. *Hidden Value Guide: Unlock the Value in your Home* [online]. Available from: www.energysavingtrust.org.uk/uploads/documents/aboutest/HVG.pdf [Accessed 9 September 2008]

[29] Department for Communities and Local Government, 2008. *Cost Analysis of The Code for Sustainable Homes: Final Report* [online]. Available from: www.cyrilsweett.com/pdfs/Cost%20Analysis%20of%20The%20Code%20for%20Sustainable%20Homes.pdf [Accessed 9 September 2008]

Another growing trend is companies making increasing use of online technologies in order to provide their customers with information on how to live more sustainable lives. Countryside Properties' Interactive House (see Image 6) and The Berkeley Group's Green Living Tool are interactive tools that allow the user to explore the various features that may be designed into a home to make it more sustainable, and also provide tips on saving resources in the home.

Image 6: Countryside Properties' Interactive House

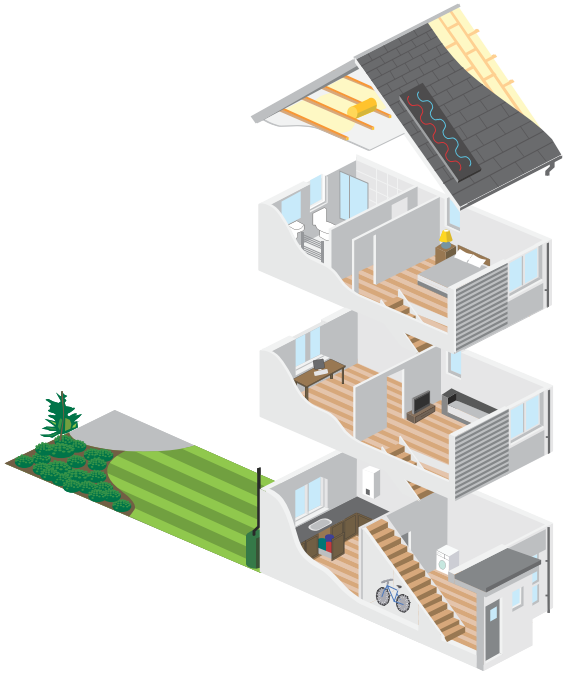

Image source: http://www.countryside-properties.com/interactive-house

Image 7: Miller Homes 'My Miller Street"

Image source: www.mymillerstreet.co.uk

Image 8: Crest Nicholson's "Giving our planet a helping hand"

Image source: http://www.crestnicholson.com/assets/pdfs/greenerlivingguide.pdf

The Berkeley Group has been researching customer attitudes towards sustainability features at its Envirohome, Kennet Island (see Image 9). Eight-one per cent of visitors said that the Envirohome had taught them more about how to conserve energy and help protect the environment in their own homes. The feedback received has allowed the company to judge which technologies would be welcomed by consumers within their other developments. What's important for participants of Next Generation is the fact that 85% of visitors said they would encourage friends and family to visit the Envirohome, showing that this type of engagement is welcomed. Redrow is also noted for offering its customers Eco Options, which include the optional installation of environmental features into homes, such as low energy lighting and motion sensors, solar collectors and advanced heating controls.

Homebuilders will find that this kind of interaction may increasingly offer a significant competitive advantage, as they will be able to identify and build the types of homes that are demanded by the market. Engagement will also be important as developers aim for higher levels of the Code, to understand what customers want, their perceptions of various energy/water saving devices, and also to educate them as to why certain features must be included and the potential benefits for them, such as cost savings from lower energy bills in more efficient buildings.

Local planning authorities, too, often demand that companies demonstrate consultation with local communities before the submission of planning applications. Those companies with tried and tested engagement mechanisms in place are likely to find this process easier and more meaningful.

Developers should take advantage of the introduction of mandatory Home Information Packs (HIPs) to ensure a joined-up approach is undertaken when engaging with customers on the performance of their homes.

Image 9: Berkeley Group "Envirohome"

Image source: http://capacitacionpedagogica.uai.edu.ar/pdf/rse/reportes/Berkeley_Group_Sustainability_Report_2007_1.pdf page 17

Assurance

For companies reporting on their climate change performance, assurance of such disclosure, whether internal or external, is critical to ensuring the validity and accountability of that information. Assurance improves the transparency of reporting, with the Global Reporting Initiative (GRI) and the AA1000 assurance standard being considered best practice standards to which companies seeking external assurance should look.

In 2007, NextGeneration reported that while a number of companies seek external assurance of their sustainability reports, this tends to be provided internally or by their sustainability consultants. The situation in 2008 has not progressed. Of the 20 companies benchmarked, 12 have sustainability or CSR reports in the public domain. Of these, three companies have their reports assured by third party independent organisations; three have them assured by their sustainability consultants (and therefore not considered independent); and five have them assured internally. One company did not disclose how its report is assured.

Of the three companies seeking assurance from third party organisations, none was undertaken to a particular standard – only Barratt sought such assurance for its reporting during the 2007 benchmark.

As suggested last year, other industries are moving towards undertaking more rigorous assurance processes for reporting, leaving the home building sector somewhat lagging in this regard. It is arguable that without the momentum from peers, homebuilders will not incur the extra cost associated with external assurance if they do not see others following suit. However, it is still important to ensure robust auditing of performance data and assessment of targets, which can only hold true integrity if assessed by someone external to the company.

7 Conclusions

In the face of an extremely difficult market, the 2008 NextGeneration climate change benchmark results prove that many developers are continuing to address sustainability issues and produce more sustainable, more efficient housing as part of their core business strategy. We hope they will maintain this commitment.

Reflections on overall performance

Two companies have emerged as leaders of this year's benchmark – The Berkeley Group and Crest Nicholson.

Miller Homes and Inspace also performed very well against a set of challenging criteria, followed closely by a group of four homebuilders: Barratt and Countryside Properties (ranked equal fifth), Redrow and Taylor Wimpey.

At the lower end of the ranking were six companies with very limited public information on which to base their assessment. Five of these six companies are privately owned. However, with the benchmark showing that three of the top four performers are also privately owned, the argument that stakeholder pressure to publicly disclose performance is confined to listed companies is weaker now than historically.

The average score across all companies for strategy, governance and risk management is higher than for climate change commitment, showing that the majority of companies could be implementing their strategic approach to climate change more effectively on the ground. The observation could be made that it is easier for companies to "talk the talk" rather than "walk the walk". NextGeneration hopes that future benchmarking finds rhetoric turning into reality.

Will the sector be able to continue on the path to sustainability in light of the current market?

What the benchmark does show is an industry that is stepping up to a challenging policy agenda set by the government. The sector has moved from asking "why" it is being targeted with this plethora of government housing policy, to figuring out solutions to "how" it can be achieved. However, behind the scenes there are still many areas where improvement could be made and questions over the ability and willingness of homebuilders to continue to embrace this agenda in light of current market projections must be asked and answered.

While some may argue the path laid for homebuilders is too challenging, the global imperative to address climate change is pressing. With housing in the UK accounting for nearly 30% of total carbon dioxide emissions, homebuilders must take responsibility for their role in reducing the long-term impacts of the homes they build.

While the government has provided much needed clarity by laying out its route-map for delivering zero-carbon housing, now more than ever before, it must be transparent about the ability of the housing sector to achieve this end goal. Homebuilders and their supply chain need to feel secure in continuing to invest in future product development to meet the standards currently set. The government needs to capitalise on the innovation undertaken to date and support further research and development in the field while homebuilders are paralysed in the short term to continue doing so themselves.

Can the government and the industry find a way of stimulating demand in the marketplace?

One of the ways in which homebuilders would feel more secure in continuing to invest in delivering sustainable housing would be to feel that there is a latent demand for these homes. This to date has not yet been exhibited in the market.

Both government and industry have a long way to go in promoting and publicising the benefits of efficient homes. Few people outside the industry are aware of the Code for Sustainable Homes or Energy Performance Certificates; therefore it is no wonder that homebuilders are not seeing the demand for a product that the market does not understand. Government should look to build on the work it has carried out to date, focusing on this issue to ensure a sea-change in public understanding and subsequent increasing demand. While location will always be the predominant factor in customers' decision-making, there is no question that rising utility prices will begin to have an effect on the homes people want to buy.

Homebuilders must play their part in promoting customer understanding and stimulating demand. NextGeneration was disappointed to find that little progress had been made in the techniques used by the sector to engage with customers on these issues. While some companies have been innovative in their approach (see Customer Engagement section), many others are not even undertaking simple marketing to highlight the cost-savings of energy and water efficient housing. Without taking action to promote the benefits of their product, the argument that homebuilders "know" customers are not interested in more sustainable and efficient housing is questionable.

These issues will only become more pertinent over time if there are more "educated consumers" in the market. Homes built to higher levels of the Code (levels five and six) are believed to be in conflict with what people currently demand (especially in relation to water provision), at a premium they are not willing to pay. They will require technologies and designs that may not be understood, or desired, by the average purchaser.

In some ways, the customer has been the overlooked element of the drive to deliver more sustainable housing. Both government and industry must work together to address this issue as a matter of significant importance. Without the buy-in of this vital part of the equation, the sums may never add up.

What does the future hold?

NextGeneration hopes that the current crisis in the housing sector does not overshadow the long-term need to address climate change issues. As history shows, homebuilders have faced and emerged successfully from previous market downturns. While it is accepted that this is a very challenging time for the industry, it is important that the momentum gained over the past two years to embrace and respond to the sustainability agenda does not fall at the first hurdle.

It is time for homebuilders to fully understand, and indeed quantify, the costs and benefits of their sustainability strategies and initiatives. It is only with this level of understanding that companies can prioritise resources and innovation, and justify investment during these difficult market conditions.

However, using this as an excuse, or a driver, to regress backwards should not be viewed as an option for the industry. Climate change, and the related issue of energy security, is a reality we face. Companies that are not willing to consider the risks and opportunities posed are likely to jeopardise future profitability and see themselves left behind by those who have adequately accounted for this.

NextGeneration does not underestimate the scale of the challenges ahead, but is heartened by the progress demonstrated in this report. It is clear that the delivery of a more sustainable built environment requires the collaboration of a wide range of stakeholders. While each has its own agenda and objectives, the outcome required must not be overlooked. Our environment depends on it.

8 Recommendations

As a result of the benchmarking exercise undertaken in 2008, NextGeneration would like to take the opportunity to provide the industry, government and planners with individual sets of recommendations. Each of the NextGeneration members has been provided with a number of bespoke recommendations to drive their performance in addressing climate change issues. The following are intended to join this up with the approach taken by other developers in the industry, the government and planners, to help ensure a more collaborative and communicative playing field.

To the industry

- Seek to gain a wider and deeper understanding of the risks associated with climate change adaptation and mitigation issues, and align this with both core business risk analysis and current sustainability risk management procedures.
- Prioritise investment in further research and development (where and when practicable) of building to higher sustainability standards.
- Implement robust data-gathering systems to measure climate change impacts associated with both operations and products, and report on these more transparently.
- Take advantage of the attributes of more efficient housing in the face of increasing energy prices when marketing homes to customers.
- Collaborate with one another at this time when sharing information to achieve solutions to long-term problems is crucial.
- Work to improve understanding of the whole-life costs and benefits of building to progressively higher levels in the Code.

To the government

- Work with industry to provide a clearer cost analysis of building to the different levels of the Code, based on real data from current projects.
- Evaluate the implications of the current market conditions on the deliverability of both its affordability and sustainability targets.
- Invest in research and development in the sector to support and foster innovation in the market and on the part of key public sector actors.
- Send clearer messages to the market with regard to future targets and any associated fiscal incentives, or otherwise, to ensure transparency and integrity of policy decisions.
- Develop fiscal incentives for homebuyers of the more efficient and sustainable homes (eg: grants), to help stimulate demand in that market segment and to encourage further R&D.
- Ensure the timetable for zero-carbon housing is clearly communicated to the homebuilders to help them ensure they can commit resources.
- Provide a definition of what is meant by “zero-carbon”.

Appendix 1

Detailed survey methodology

WWF, Insight Investment, the Housing Corporation and Upstream drew up the criteria for the 2008 NextGeneration benchmark at the end of 2007. An explanation of the process for reviewing the criteria used for the 2007 benchmark is explained in the methodology section (section three) of the main report.

The criteria review referred to a range of standards available at the time. Principal among these was the Code for Sustainable Homes, developed by the UK government in conjunction with the Building Research Establishment (BRE). Others included the Regional Development Agency's Sustainability Checklists and other various best practice guides and benchmarks.

Companies were assessed on two sets of criteria relating to their strategy, governance and risk management, and their climate change commitment. Within each section were a number of sub-sections (three for strategy, governance and risk management and 9 for climate change commitment). Within these sections were a number of individual criteria. Each of the individual criteria were scored out of 5 and assigned different weightings. The two overarching sections were weighted as follows: strategy, governance and risk management 25%; climate change commitment 75%.

The table below outlines the issues addressed by each of the criteria and the performance required to score at the highest level against each issue.

Criteria	Performance needed to meet best practice
Strategy, governance and risk management	
Strategy	Board-approved policy in place outlining the company's approach to climate change, related objectives and targets, a commitment to measuring performance and evidence of engaging with external stakeholders.
Governance	Clear governance structures in place at a management level showing Board-driven implementation of the company climate change strategy. Identification of responsibilities for implementing the climate change strategy at an operational level (both product and offices), supported by a structured training programme.
Risk Management	Core business risk analysis accounts for issues related to both climate change mitigation and adaptation and identifies the commercial implications of these.
Climate change commitment	
Environmental management	An externally certified Environmental Management System is in place covering all climate change impacts related to the business.
Commitment to EcoHomes	All private dwellings are certified to EcoHomes Very Good.
Energy	Operational energy consumption or CO_2 production is measured, short-term targets are set to improve performance and the company commits the business to aspirational long-term goals. Energy efficiency of the company's product is addressed and commitment to achieving the energy component of the Code for Sustainable Homes levels three, four and six for new homes is evidenced.
Water	Operational water consumption is measured and yearly targets are set to improve performance. Water efficiency of the company's product is addressed and commitment to achieving the water component of the Code for Sustainable Homes levels three and five for new homes is evidenced.

Waste	Construction, development and office waste is measured with targets in place committing the company to reducing waste produced or increasing recycling.
Procurement	An externally audited sustainable procurement policy is in place ensuring the company addresses its supply chain and material specification processes in relation to climate change.
Transport	Construction, development and office transport activities are measured, with targets in place committing the company to reducing the related carbon dioxide emissions.
Assurance	Reporting is supported by a third party, independent statement covering all company activities related to climate change impacts.
Customer engagement	A communication programme is developed and undertaken to provide customers with information related to sustainability issues and to understand the market demand for sustainable housing.

NEXT GENERATION

A PARTNERSHIP TO DELIVER SUSTAINABLE HOMES FOR 21ST CENTURY LIVING

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