

Supported by



Innovation and Good Practice Programme

Endorsed by



June 2003 PP6/03

Sustainable Homes

Hastoe Housing Association
7 High Street
Teddington
Middlesex
TW11 8EE

020 8973 0429
info@sustainablehomes.co.uk
www.sustainablehomes.co.uk

Printed on 100% recycled paper

A Guide to
EcoHomes

An environmental assessment method for homes



Sustainable Homes

A Guide to EcoHomes

Written by Jenny Wain
Sustainable Homes
May 2003

Endorsed by Building Research Establishment

Supported by the Housing Corporation's
Innovation and Good Practice programme.

Acknowledgements

Many thanks are given to the following housing associations, who are members of the EcoHomes Club. This was set up in 2000 by Sustainable Homes and 12 housing associations that were planning to use EcoHomes (2000) for the first time. This guide builds on their experiences to provide support to any association using EcoHomes in the future.

Anchor Housing Trust
Aragon Housing Association
CDS Housing (now Plus Housing Group)
Drum Housing Group
Ealing Family Housing Association (now Catalyst Housing Group)
Hastoe Housing Association
Marches Housing Association*
Midsummer Housing Association
Prime Focus
South Yorkshire Housing Association
Westlea Housing Association
York Housing Association*

* Schemes from these associations did not go ahead within the original research timescale.

Thanks are also given to the BRE. Much of the information provided on EcoHomes has been derived from their publications including:

EcoHomes: An Environmental Assessment Method, BRE 329
Green Guide to Housing Specification, BRE
EcoHomes Assessor Training Manual
EcoHomes Ratings Prediction Checklist.

Hastoe Housing Association set up Sustainable Homes in 1998. The Sustainable Homes team provides support and advice to housing associations to improve their sustainability and environmental performance. Sustainable Homes is funded through the Housing Corporation's Innovation and Good Practice Programme until 2005.

Please note that information and opinions have been gathered together in this document to give general guidance on EcoHomes. They are believed to be correct but Hastoe, the Housing Corporation and the other organisations participating in the project cannot accept any liability arising from them. Housing associations and others will need to obtain their own professional advice when implementing schemes or contemplating new arrangements.

Front cover photographs courtesy of Hastoe Housing Association

Contents

Executive Summary	2
-------------------	---

PART 1

1. Introduction to EcoHomes	3
<ul style="list-style-type: none">• What is EcoHomes?• What issues does it cover?• How does the assessment method work?• Who carries out the assessment?	
2. Why is EcoHomes important?	4
<ul style="list-style-type: none">• The bigger picture• What are the benefits?• What does the Housing Corporation require?• How does it fit into other requirements?	
3. The cost of EcoHomes and least cost research	6
<ul style="list-style-type: none">• Basic cost of EcoHomes• Potential cost of EcoHomes<ul style="list-style-type: none">• EcoHomes Club• Achieving Excellence	

PART 2

1. Getting started with EcoHomes	10
<ul style="list-style-type: none">• Designing for EcoHomes• Choosing your Assessor	
2. Your scheme and EcoHomes	11
<ul style="list-style-type: none">• Energy• Transport• Pollution• Material• Water• Land Use and Ecology• Health and Well Being	
3. Support for EcoHomes	21
<ul style="list-style-type: none">• Sustainability Multiplier• Sustainability Works• Construction Clients Charter	

PART 3

Further help	22
<ul style="list-style-type: none">• Finding an Assessor• EcoHomes Training• Sustainability Works• Green Guide to specification• Sustainable Homes• Routes to Sustainability• Boiler database• Useful web addresses	

APPENDICES

• EcoHomes Club Summaries	24
• Sample Energy Advice Leaflet	25

Executive Summary



1. EcoHomes is a well developed tool to assess the environmental performance of homes. It enables housing associations to measure and improve the design and specification of schemes against a nationally recognised rating. It is endorsed by the National House Builders Council, and can be applied to new and refurbished buildings.
2. All housing association schemes accessing funding from the Approved Development Programme must achieve a 'pass' rating.
3. EcoHomes should be incorporated at the start of the design and specification process. Considering its implications at the outset can reduce costs and provide solutions to support the best environmental performance within fixed cost constraints.
4. EcoHomes is scored using credits. These add up to a rating. Several EcoHomes credits are site dependent and are often beyond the influence of a housing association, e.g. a site being located within 1 km of public transport links and a range of local amenities.
5. Homes that are compliant with the Housing Corporation's Scheme Development Standards 2003 (SDS) and Building Regulations will automatically achieve several of the EcoHomes credits.
6. It is possible to achieve a 'pass' rating for housing that is SDS and Building Regulation compliant with little or no extra cost.¹ SDS 2003 now requires greater energy efficiency in buildings. This enables schemes to achieve a 'pass' easily and without relying on site dependent credits.
7. To achieve a 'good' rating more consideration needs to be given to the design and specification of a house. It is possible to achieve a 'good' rating for housing that is SDS and Building Regulation compliant at a moderate cost. A 'good' could be achieved for less than £200 per unit¹ and without relying on site dependent credits.
8. To achieve a 'very good' rating additional credits are needed. It is likely that issues of material sourcing, land use and ecology and noise reduction will have to be addressed. It could cost in the region of £1700 a unit to achieve a 'very good' rating. If site-specific credits are obtainable, costs could be reduced by £300 per unit.¹
9. To achieve an 'excellent' rating credits will have to be achieved in all categories. It could cost in the region of £3000 per unit. If site-specific credits are obtainable, costs could be reduced by £1200 per unit.¹
10. There is a cost associated with assessing a scheme and achieving certification. The minimum cost is £200 per scheme if assessed in-house. If an external assessor is used this could cost from £30 – £100 a unit.
11. The EcoHomes Club member schemes achieved a range of ratings. These were all built to SDS 2000 and before changes to Building Regulations Part L. On average the cost for achieving a 'good' was 2% extra per unit and a 'very good' 4% extra per unit than a comparable standard scheme built by the organisation.
12. Some of the extra costs incurred by the EcoHomes Club schemes are not directly associated with EcoHomes. Extra costs can often result from supply chain and market issues. These costs are likely to reduce over the next few years as demand, supply, skills and awareness increase.

¹This information provides a general indication of possible cost, based on research focussing on a least cost approach to achieving EcoHomes. It was taken from work commissioned by an EcoHomes Assessor during 2002. It takes into account the potential cost of specifying to meet certain EcoHomes credits. Costs may differ for housing associations seeking to maximise their environmental performance.

PART 1

1 Introduction to EcoHomes

What is EcoHomes?

EcoHomes is an environmental assessment method for homes. It is the domestic version of BREEAM, the Building Research Establishment's Environmental Assessment Method.

EcoHomes considers the broad environmental concerns of climate change, resource use and impact on wildlife. It balances these against the need for a high quality, safe and healthy internal environment.

It is a flexible standard that rewards positive steps taken to improve the environmental performance of housing in the UK. These steps go beyond requirements expected by current Scheme Development Standards and Building Regulations. It supports housing associations and other developers to deliver better quality living environments with lower negative impacts on the environment, and lower running costs for residents.

What issues does it cover?

EcoHomes addresses a range of environmental impacts. These are grouped together under the following issues:

- Energy
- Transport
- Pollution
- Materials
- Water
- Land Use and Ecology
- Health and Well Being

How does the assessment method work?

EcoHomes has been developed to be flexible and comprises a number of elements that are covered by the above issues. These are set out in detail in Part 2 of this guide. All of the elements are optional and you can choose the ones that most suit your circumstances and priorities for environmental improvement.



Each element, however, has a score attached to it. These scores are weighted according to the overall environmental impact of any issue, such as energy. The weighted scores form a rating. Four ratings are achievable:

Pass	☀️
Good	☀️ ☀️
Very Good	☀️ ☀️ ☀️
Excellent	☀️ ☀️ ☀️ ☀️

A rating prediction checklist is available for anyone to do a quick check on how well a scheme may perform. This only provides an *indication* of the final rating. An up to date prediction checklist is available from: www.bre.co.uk/pdf/EcoHomesChecklist.pdf.

Who carries out the assessment?

All assessments have to be carried out by a qualified assessor under license from the Building Research Establishment (BRE). BRE carries out assessor training and quality assurance for assessments. Any organisation can train its staff, through BRE, to become an EcoHomes assessor. For more on choosing an assessor, see Part 2.

2 Why is EcoHomes important?

The bigger picture

Building, maintaining and managing houses is the stock in trade of housing associations. In doing this, vast quantities of natural resources, including energy, water, materials and land are used, and large amounts of waste produced. Residents living in the houses account for even greater resource use than during construction and refurbishment. For this reason it is important that the environmental impacts of the construction, refurbishment and use of homes are considered.

The Housing Corporation, along with a growing number of local authorities, regional assemblies and regional development agencies, is encouraging housing associations to work in a more sustainable way. This means addressing environmental, economic and social impacts in a balanced way. Associations are being encouraged to develop a framework to guide such actions in the future.

The Government's White paper, "*Sustainable Communities: building for the future*", sets out its stance for future national and regional development approaches. This states the intention for new housing to be more sustainable in its use of resources.

EcoHomes is seen as one way of achieving greater sustainability in housing.

What are the benefits?

EcoHomes is a tried and tested environmental standard for housing. The standard acts as a label, advertising not only your commitment to sustainability through reduced environmental impact and improved quality of life for residents, but the credentials of the home to your residents.

By building or refurbishing your homes to a better environmental standard, associations and residents can expect to achieve a range of benefits. The greatest benefits can be achieved through addressing EcoHomes principles at the start of the design process, and through detailed specification.

Potential benefits are:

- reduced running costs through energy and water efficiency;
- achieving affordable warmth for residents;
- demonstrating a sustainability commitment to partnering organisations, residents, communities and funding bodies;
- supporting a healthy and comfortable internal environment;
- increased levels of resident satisfaction;
- reduced maintenance costs;
- developing housing that out performs market housing and could improve the reputation of an organisation in an area, and;
- developing homes that reduce reliance on private car ownership.

If you are dealing with a Section 106 site and a private developer, benefits for them using EcoHomes are to:

- demonstrate sustainability credentials to local authorities, investors and consumers;
- add value and benchmark performance against competitors;
- improve environmental performance as part of a commitment to Corporate Social Responsibility;
- improve their understanding of environmental issues;
- meet aspirations of the Government's Sustainable Communities, and;
- help improve the skills base and drive costs down.

What does the Housing Corporation require?

From April 2003 the Housing Corporation requires all associations to achieve a 'pass' rating on any new build scheme receiving finance through the Approved Development Programme. This is required through SDS2003. Associations are being encouraged to go beyond this rating; a 'good' rating continues to be recommended in



SDS. By 2005 the Housing Corporation will require a 'good' rating and recommend that 'very good' is achieved.

This requirement reflects the objectives of the Housing Corporation's Sustainable Development Strategy and Action Plan, and its Environmental Policy. Achieving EcoHomes supports an association's sustainable development strategy and action plan.

How does it fit with other requirements?

EcoHomes complements several of the other systems and standards associations need to comply with. It incorporates the Standard Assessment Procedure (SAP), which is currently used to measure the thermal performance of homes. It complements Housing Quality Indicators (HQIs). In achieving EcoHomes associations can meet HQIs for sustainability. Relevant HQIs are highlighted in www.sustainabilityworks.co.uk (for more information on this tool see Part 3). Housing associations are now also required to commit to continuous improvement of the standard and quality of new homes through the Construction Clients' Charter. Achieving EcoHomes can form part of the action plan that is required. It has been developed to support organisations committed to the continuous improvement of their environmental performance as skills, expertise and funding sources develop over time.



3 The cost of EcoHomes

Basic cost of EcoHomes

There is much debate surrounding the issue of the cost of providing environmentally friendly homes. Building homes with a greater environmental performance can be achieved without additional costs. However, it is likely that some additional costs will be experienced when achieving the higher ratings. These costs could be linked to a lack of economies of scale, lack of skills, products and materials in the market place, or standards set by associations and their residents. These costs will reduce significantly as more people engage in the agenda, and as products and skills increase in the housing sector. It is often the case that where additional capital costs arise, they are offset through reduced operational costs to associations and residents.

Sustainable Homes has been involved in researching the cost of EcoHomes since 2001. The research has involved ten housing associations and two EcoHomes assessors. It has shown that at present a 'pass' rating can be achieved with minimal additional costs, and a 'good' rating can be achieved with moderate additional costs. Even during this period the costs associated with improved environmental performance have fallen.

EcoHomes is all about continuous improvement and better environmental performance. The aim is to ensure the greatest environmental performance within any development constraints. It has been developed by BRE with the following cost indications in mind. These have largely been corroborated by independent cost research commissioned by Sustainable Homes and the findings of the EcoHomes Club.

Pass

Most developments should be able to achieve this with minor design/specification changes at minimal additional costs – elements are no or low cost to achieve.

Good

The developer needs to be able to demonstrate good practice in most areas - some elements needed to achieve the credit may cost a few hundred pounds to incorporate.

Very Good

Developments that push forward the boundaries of environmental performance will achieve this – some elements needed to achieve the credit are

likely to cost several hundred pounds to incorporate.

Excellent

Developments which demonstrate exemplary environmental performance across the full range of EcoHomes issues will achieve this – some elements are likely to involve significant costs to incorporate.

Potential cost of EcoHomes

To support the take up of EcoHomes by housing associations, an EcoHomes assessor was commissioned to research the potential least cost approach to achieving all EcoHomes ratings. This was based on a standard housing association scheme complying with SDS2003 and Building Regulations. As several of the EcoHomes credits refer to location issues, e.g. proximity to public transport and local amenities, the cost analysis considered options of achieving EcoHomes without having to achieve these credits. It was recognised that the cost to housing associations of influencing the creation of bus routes, shops etc. can be prohibitive.

The findings highlighted the following:

- Homes that are compliant with SDS2003 and Building Regulations will automatically achieve several of the EcoHomes credits.
- It is possible to achieve a 'pass' rating for housing that is SDS and Building Regulation compliant with little or no extra cost. SDS2003 require greater energy efficiency in buildings (through the fabric of the building and efficiency of lights and heating systems) which enables schemes to achieve a 'pass' more easily. This will be especially true for homes with access to gas.
- To achieve a 'good' rating more consideration needs to be given to the design and specification of a house. It is possible to achieve a 'good' rating for housing that is SDS and Building Regulation compliant at a moderate cost. A 'good' could be achieved for less than £200 per unit. These costs exclude site dependent credits.
- To achieve a 'very good' rating additional credits are needed. It is likely that issues of material sourcing, land use and ecology and noise reduction will have to be addressed. It could cost in the region of £1700 per unit to achieve a 'very good' rating. If site specific credits are included, costs could be reduced by £300 per unit.

Table 1 Credits and costs summary*

ISSUES	If achieving Site Specific credits				Without achieving site specific credits			
	Pass	Good	V. Good	Excellent	Pass	Good	V. Good	Excellent
CO ₂ reduction	18	21	23	22	16	18	19	19
Pollution	9	13	13	13	9	13	15	15
Materials	5	5	9	11	5	8	3	11
Water	0	0	6	6	0	0	6	6
Land Use & Ecology	3	3	3	5	3	3	3	7
Health & well being	4	6	9	13	4	6	9	13
EcoHomes credits	39	49	63	70	37	48	61	70
Costs	£0	£0	£1,430	£1,760	£30	£111	£1,680	£3,040

*based on EcoHomes 2002

- To achieve an 'excellent' rating credits will have to be achieved in all categories. It could cost in the region of £3000 per unit. If site specific credits are included, costs could be reduced by £1200 per unit.
- There is a cost associated with assessing a scheme and achieving certification. The minimum cost is £200 per scheme if assessed 'in house'. If an external assessor is used this could cost from £30 – £100 a unit.

Therefore associations should be able to improve the environmental performance of homes within the Total Cost Indicator framework, especially if working with an EcoHomes assessor from the outset.

The table above summarises the potential costs associated with achieving different EcoHomes ratings.

For more details on the cost research, its methodology and findings, contact Sustainable Homes or visit www.sustainablehomes.co.uk.

EcoHomes Club

The EcoHomes Club was set up with ten associations that were committed to using EcoHomes for the first time. Research was carried out during 2001 to ascertain the additional costs incurred from the association's standard schemes to achieve EcoHomes. The progress of the schemes was followed until the end of 2002. The experience of the Club provides a 'snapshot' of the reality of achieving EcoHomes, and the actual costs incurred.

However, when considering the cost results several points need to be taken into account. Many of the associations in the Club have been committed to improving the environmental performance of their stock for a number of years. This was reflected in their basic housing standard – several achieved the recommended standards set out in SDS as part of their standard specification. Also it is very difficult to extract the costs that only relate to EcoHomes. Costs were sometimes distorted due to the construction type chosen and market conditions, e.g. timber cassette systems were only available at a premium reflecting high market demand and restricted supply in 2001.

The EcoHomes Club member schemes achieved a range of ratings. These were all built to SDS2000, and several were built before changes to Building Regulations (2002). On average the cost for achieving a 'good' was 2% extra per unit and a 'very good' 4% extra per unit than a comparable standard scheme built by the organisation.

Extra costs associated with achieving a 'good' rating have reduced significantly as result of changes to SDS2003.

Club members and the scheme details are summarised in Appendix 1. Prime Focus' experience of achieving an 'excellent' rating is illustrated overleaf. Others form detailed case studies illustrating approaches to achieving EcoHomes in Part 2.

WATTON GREEN, Castle Vale Estate, Birmingham



Scheme Summary

Prime Focus provided a mixture of 11 detached and terraced houses on a brownfield site for Castle Vale Community Housing Association. The scheme formed part of the regeneration of the estate. The houses were built of timber cassettes that were manufactured off site and faced with brick, timber and a low maintenance facing board. Timber cassettes enabled additional living space to be provided in the roofs of the properties.

Rating – Excellent

Achieving Excellence

Energy – The homes were built to be so energy efficient that the operational energy requirements were reduced to less than 30kg/m²/year. Dedicated low energy lights were fitted in all habitable rooms, passive ventilation was installed along with highly efficient boilers. This achieved seven credits. Maximum credits were achieved for a 30% improvement to the Building Regulation requirements of the building envelope. This was due to high levels of insulation and high performance windows. To prove this, all SAP calculations and data from the NHER Builder for Windows spreadsheet were submitted to the assessor. Clothes lines or rotary driers were provided in each garden. An energy fact sheet was provided to all residents recommending the purchase of energy efficient white goods (a copy of which was provided to the assessor). Credits were achieved for providing external

feature and security lighting; security lighting was a maximum of 150w and was fitted with daylight and movement sensors. Again evidence of the specification and products installed was provided to the assessor.

Transport – Credits were achieved for public transport, as a bus runs through the estate, and proximity to local amenities. The bus stops and routes to amenities were identified on a map, which was submitted along with a bus timetable, and list of amenities to the assessor. Secure cycle storage (provided in the garden shed), and the provision of two electric sockets and two telephone sockets support the provision of a home office. Specification information was provided to the assessor to prove this.

Pollution – Maximum credits were achieved for reduction of HCFC emissions. The factory built timber cassette system included cellulose insulation with a zero ozone depletion potential. Serroli Arena 30C low NO_x boilers achieved maximum credits having emissions of less than 70mg/kWh. Evidence of the insulation materials used and boiler specification was provided to the assessor.

Materials – Credits were achieved for timber being procured from managed sources. Timber was cut under a Government licence scheme and covered by a comparable national scheme to the UK Woodland Association scheme. Evidence that the timber was sourced under this scheme was provided by the supplier.

Maximum credits were achieved for providing internal storage bins for recycling and the scheme being served by a local authority recycling collection scheme. A confirmation letter from the LA provided sufficient evidence of the kerbside scheme along with the location of the storage bins shown on scheme drawings.

Five out of the six building elements achieved maximum credits under the Green Guide to Housing Specification. Additional credits for the floor were not available as the scheme used a block and beam support over-laid by a concrete screed. Had the floor been over-laid by timber battens and ply, three additional credits could have been achieved. Again evidence of the material specification was provided to the assessor.



Water – The installation of 6 litre WCs, aerated taps, a standard sized bath and a garden water butt achieved credits for reducing water consumption to less than or equal to 40m³ per bedspace per year. The provision of water butts was a low cost means of achieving an additional credit as it reduced the average water consumption from 41.75m³ to 40m³. Evidence of the appliances installed and size of the water butt were provided to the assessor.

Land Use and Ecological Value – Maximum credits were achieved for carrying out a survey on this vacant brownfield site. The site was identified as having a low ecological value as it had previously been housing, and the design team consulted with an accredited expert on the enhancement of the value of the site. The recommendations for improvement were carried out. Providing native planting in gardens increased the overall ecological value of the site. The report from the expert was submitted to the assessor along with confirmation that the recommendations of the report would be carried out.

Health & Well Being – A credit was achieved for daylighting by designing in accordance with British Standard 8206 part 2. A credit was

achieved for sound insulation to party walls exceeding the levels set out by Building Regulations, and a final credit was achieved for providing private open space through rear gardens. Plans of the garden and house layout, and wall specification provided the necessary evidence to achieve these credits.

Cost

Approximately 10% in excess of a standard scheme (2001).

Lessons learned

In order to access the 'excellent' EcoHomes rating, credits were achieved for all but one element – making effective use of the building footprint. Some elements achieved maximum credits, however in others there were opportunities to achieve further credits through a change in specification. This highlights the flexibility of EcoHomes and the routes to improving a better environmental performance.

Contact

Gordon Malcolm, Contract Services Director
T. 0121 687 5000
E. gordon.malcolm@focus.org.uk



Designing and Partnering for EcoHomes

Gloucester Housing Association has carried out a review of its standard specification to ensure all schemes achieve a Pass in the future. Two members of staff are trained EcoHomes assessors and have facilitated this process. The standard specification now includes criteria that supports EcoHomes. In order to ensure contractors comply with this they provide a list of products/suppliers to achieve the EcoHomes credits.

Contact: David Nelson,
T: 01452 541808
E: nelsond@glosa.co.uk.

Aragon Housing Association carried out its first EcoHomes scheme in 2000. This achieved a Good rating without any change to their standard specification. This was aided by the scheme achieving maximum transport credits due to its location.

Since then Aragon has set up the Paragon Partnership Project. This has forged best value partnerships with Aragon and a local contractor, architects, engineers and technical advisors. The Partnership replaces the usual approach to new development through competitive tendering and has delivered 5 schemes. Importantly it has provided homes of a higher standard that might otherwise have been possible. All achieved an EcoHomes Good rating, an energy rating SAP 100 and Secured by Design. The partnering organisation's architect became a trained EcoHomes assessor to help devise a specification to achieve an EcoHomes Good rating. Each scheme accessed additional funding through the Housing Corporation's Sustainability Multiplier.

Contact: Keith Edwards
T: 01525 844419
E: keith@aragon-housing.co.uk

PART 2

1 Getting started with EcoHomes

Designing for EcoHomes

Work with the EcoHomes Club has shown that the most cost effective way of improving environmental performance and achieving the best EcoHomes rating for your budget is to design EcoHomes in at the outset. Extra costs may be incurred if extra solutions are added late on in the development process. This could happen if you commit to a certain rating at the outset without properly considering the implications of achieving the rating.

One way to design for EcoHomes is to review your standard specification to ensure that it achieves the EcoHomes rating that your association wants to achieve. It could be adapted to always secure an agreed rating. Alternatively your organisation could partner with contractors, architects and technical advisors to ensure environmental improvement and EcoHomes certification.

Design Advice can help. This is a Government sponsored scheme providing free consultancy to improve the environmental performance of schemes. To be eligible for the advice (free through a cashback scheme) all potential buildings/group of buildings must have a minimum floor area of 500m². The service applies to new-build and major refurbishment work. Eligible housing associations can access one day of general consultancy on their chosen building project. Recommendations covering energy efficiency, environmental improvements and potential commercial benefits are provided. This service is a good way to identify improvements that support EcoHomes (or even new SDS requirements). Many of the Design Advice consultants (usually locally based architects) are EcoHomes assessors too. For more information visit www.designadvice.co.uk

Designing and specifying for EcoHomes at the outset, with or without partnering, can maximise the final rating within an agreed budget.

Choosing your Assessor

External assessors could be employed to carry out an assessment, and assist in designing and specifying for EcoHomes from the start of a scheme. They can provide advice on how to

achieve the best environmental performance (and EcoHomes rating) to meet an organisation's circumstances. Using an external assessor could be a good way to improve design briefs and specifications for housing associations with little experience in environmentally friendly housing. Assessors can carry out an initial assessment of house types, the development as a whole (incorporating site and location issues), and provide advice on how the environmental credentials of the scheme can be improved.

Alternatively, training your own assessor enables you to appraise your standard specification in line with EcoHomes, certify your own schemes in the future, and avoid external assessor consultancy costs. The Housing Corporation has provided support to over 100 housing associations to train staff to become an assessor. To find out more about assessor training courses visit www.bre.co.uk/ecohomes.

With either approach, in order for the assessment to be carried out, a workbook will be provided to an association. This sets out the level of information and evidence that housing association staff will need to provide to an assessor to enable the assessment to be carried out. The assessor checks the information provided against the EcoHomes standard in order to determine the rating. An assessor's report summarising the assessment and specifying the final rating is then submitted to the housing association for information, and to BRE for quality assurance and certification. If the report meets the required standard, BRE will issue the rating certificate.

An up to date list of accredited assessors is available on BRE's website, www.bre.co.uk/ecohomes or by emailing BRE on ecohomes@bre.co.uk.

2 Your Scheme and EcoHomes

EcoHomes focuses on a range of issues that can help reduce the negative environmental impacts of the homes you build, refurbish and redevelop.

These are:

- Energy
- Transport
- Pollution
- Materials
- Water
- Land use and ecology
- Health and well being

This section highlights what is expected in order to achieve the elements of each issue category, and approaches that could be taken. These are suggestions only and are highlighted through case studies from the EcoHomes Club members. You are advised to talk to an EcoHomes assessor early on in your development process to ascertain the best approach for your scheme.

Those areas that relate to SDS requirements are highlighted



WESTLEA HOUSING ASSOCIATION

Stokes Croft, Calne, Wiltshire

Scheme Summary

Stokes Croft is a scheme of 50 houses and 4 bungalows. These were completed in 2002 as part of a redevelopment in the village of Calne. The design and specification of the homes incorporated 1NTEGER principles to ensure improved environmental performance. The timber frame units are brick or timber clad and solar hot water systems were installed to 25 units.

Rating – Good expected

Special Feature Focus – Energy

Westlea Housing Association aimed to improve the energy efficiency and reduce CO₂ emissions significantly. This was achieved through the specification of a standard heating and hot water system, energy efficient lighting and improvements to the building fabric through high levels of insulation. The properties have SAP ratings ranging from 94 to 109. Consideration was given to installing condensing boilers and accessing rebates through the Energy Efficiency Commitment, however the partnering contractor opted to provide a more standard solution.

Thermal hot water systems were fitted to 25 units. Although these units benefited from a further reduction in CO₂ emissions, extra

credits were not achieved. The CO₂ reduction is measured as an average over the site.

Washing lines were provided in all the gardens to achieve the drying space credits. As is the case with many associations, Westlea do not provide white goods in the kitchen. To access the EcoHomes credit, information was provided to residents on purchasing energy efficient white goods. The provision of low energy external lighting was met through the use of compact fluorescent light systems. This includes sensors to prevent the systems coming on during the day.

Cost

Additional costs of building this scheme are in the region of £1,500 per unit. Some of this relates to achieving EcoHomes, but it was difficult to extract the exact costs.

Lessons learned

Westlea have now set up local partnerships with contractors that are committed to achieving EcoHomes. Architects at Westlea designed the scheme and worked in partnership with contractors to develop it. Although they were not familiar with the EcoHomes standard, Westlea had no problems highlighting the issues the contractor needed to be aware of. The contractor subsequently accessed discounts through bulk purchasing, e.g. Danish timber doors. Westlea's Design Brief and Specification for all schemes is continually evolving and will incorporate environmental improvement in accordance with EcoHomes in the future. However, as many of its development projects use different construction techniques, bespoke solutions may still be needed.

Westlea have trained staff to become in-house assessors, and will aim to achieve a 'good' EcoHomes rating on all schemes in the future.

Contact

Steve Parker, Building Services Manager
T. 01249 466066
E. stephen.parker@westlea.co.uk



Energy

These credits focus on the amount of carbon emissions that can be saved through the design and specification of the building envelope and through the lights, heating systems and appliances used throughout the lifetime of the house.

Reduction in CO₂ emissions



EcoHomes calculates the amount of carbon generated in the home using the Standard Assessment Procedure (SAP) for space heating and hot water, plus that generated from lights and appliances. The assessment is carried out against the operational requirements of the home, and not the actual energy consumption. It also takes into account the primary fuel source. Homes using gas will therefore perform better than those using other fuel sources, especially electricity. The Housing Corporation requires associations to measure the energy efficiency of new buildings using the Carbon Index. In complying with this requirement housing association properties will achieve a high level of energy credits through EcoHomes.

To score these credits and determine potential carbon reductions, an assessor carries out a simple set of calculations based on SAP information. Additional information needs to be provided on the number and type of light fittings to calculate the affect of lighting. It is worth noting that the calculations for a scheme are based on worst house types and then averaged across a scheme. This can have a significant impact on schemes with a mixture of house types and energy innovation.

Additional information will need to be provided to the assessor if renewable energy or combined heat and power systems are used. Although such approaches access additional credits, the heating, lighting and insulation basics need to be considered first.

Maximum credits can be achieved for carbon neutral homes.

Improvement to fabric of building



These credits are scored against the % improvement of the building envelope and recognise the requirements of both Building Regulations 2002 and 1995. Credits can be maximised by improving levels of insulation to the roof, walls, floors, doors and the performance of the windows.

For new buildings, evidence is taken from the SAP sheets. For refurbished buildings, information on U values before and after improvement needs to be provided to the assessor.

Minimum credits are achieved for 3% improvement to Building Regulations 2002, and maximum credits are achieved for a 15% improvement.

Provision of secure drying space



Secure drying space can help reduce the use of tumble dryers. Drying provision can be internal, external or under cover. Credits can easily be achieved through the SDS requirement for the provision of a clothes line in private or communal gardens. When applying this to flats or achieving it through an indoor means the area must be well ventilated and clothes drying must be possible without compromising the main use of that space, e.g. a line on a balcony or in a bathroom. A 6m line is required for homes with 3+bedrooms. A 4m line is required for 1 and 2 bed units. Evidence to show this is planned should be provided to the assessor.

Provision for eco-labelled white goods

Once the energy demand for heating, hot water and lighting has been reduced, the next greatest saving can be made through appliance use. Many housing associations do not provide white goods in their dwellings. EcoHomes recognises this and credits can be achieved for providing information to encourage residents to purchase energy efficient or A rated electrical goods. If associations do provide white goods, credits can be achieved for supplying A rated fridges, freezers, fridge/freezers, washing machines and dishwashers, and C rated tumble dryers. A sample of your leaflet or evidence of ordering appliances should be provided to assessors.

A sample resident leaflet is contained in Appendix 2.

Provision of low energy external lighting systems



Credits can be achieved for providing low energy external lighting. All external lights need to accommodate CFLs (compact fluorescent luminaries) or fluorescent strips only. This is a requirement of SDS. Security lighting should be more than 150w and be fitted with controls to automatically switch it on and off, and prevent it coming on/off in daylight. Specification evidence should be provided to assessors.



DRUM HOUSING GROUP

Firgrove, Whitehall

Scheme Summary

Drum developed 3 two bed roomed houses on a brownfield site in a built-up area. The homes are brick and timber framed with slate roof tiles. Very high performance timber windows, gas combi boilers, high levels of insulation, passive ventilation and dedicated low energy lighting are fitted throughout. Timber is from sustainable sources.

Rating – Very Good

Special Feature Focus – Transport

The scheme is located in an urban area and achieved maximum transport credits as a result. The scheme is located within 500m of a bus stop that serves both the town and railway station (which serves London). A post box and food shop are within 500m of the scheme, and within 1km are a post office, chemist, school, medical centre, community centre and public house. A footpath is available from the site to the bus stop and the local amenities. Space is made available in the second bedroom for a home office. The wall length was sufficient and two electric and telephone points were installed. The assessor sought confirmation from the developer on the specification of the office. Secure cycle storage is provided through the provision of a garden shed of an appropriate size.

Cost

It cost around 3% more to achieve EcoHomes.

Lessons learned

Under SDS a shed is provided, usually in back gardens, however Drum found that a standard size shed may not always achieve the EcoHomes credit. A larger shed is needed to meet the requirements of a 3+ bed homes. Drum fitted a larger shed to accommodate 2 bikes and garden storage.

Contact

Paul Ciniglio, Project Surveyor
T. 01730 403055
E. pciniglio@drumhsg.co.uk

Transport

The transport section focuses on reducing the amount of pollution created due to trips made from the home to local amenities, work, community facilities etc. These credits are site related. If your site does not meet the criteria automatically, there is often little that can be done to influence an improvement.

Access to public transport

Developing homes close to public transport can provide a choice in mobility and help reduce dependence on the car.

At least 80% of the whole development site needs to be within walking distance (500m - 1km) of a public transport node to achieve these credits. A public transport node can be a railway or tube station, tram or bus stop. It needs to have at least a one hourly service from early morning to early evening throughout the week (including Saturday). Services need to connect with a local town or city centre, or major transport node. This could be more difficult to achieve in some rural and suburban locations.

Maximum credits can be achieved if the majority of the site is within 500m of the transport node. Evidence of the public transport service e.g. timetable, and the location of the node and a safe walking route (indicated on a site plan) need to be provided to the assessor.

Provision of a cycle store



Secure storage for bicycles, can help to encourage residents to cycle on short trips as an alternative to using the car.

The size of the store required depends on the size of the home. The store/shed required by SDS is likely to meet the requirements for 1 or 2 bed homes (it should be large enough to store one bicycle), but a larger shed may be needed to achieve the credit for homes with 3+ bedrooms (large enough to store two to four bicycles). The shed needs to be set on concrete with a secure anchor point for bicycles. If the shed is located in a garden it must be directly accessible from the garden. Details and a location plan should be provided to an assessor.

Secure, weatherproofed, bicycle stores and secure communal stores can achieve the credit for flats. One credit can be achieved if 50% of homes in the development have adequate storage facilities. An additional credit is available if all units comply.

Proximity to local amenities

Developing new homes close to existing amenities can help reduce dependence on the car too.

BLACK CONTRY HOUSING

Elizabeth House Bungalows, Dudley, West Midlands

Scheme Summary

The scheme involved two prototype bungalows that test out new technology as part of Black Country Housing's commitment to research and development. The scheme builds on a brownfield development at Bryce Road, Dudley, that incorporates systems conserving non-renewable resources and reducing waste and pollution through construction and use. The prototypes are replicable. BCH is on its third site and has already completed 14 units.

Rating – Very Good

Special Feature Focus - Pollution

Maximum credits were achieved for ensuring that all fabric insulation was CFC and HCFC free. Slab insulation was supplied for the floors and the Free-frame external wall panels involved pollution-free insulation panels. Prefabricated roof cassettes with Pu-slab insulation achieved the credit for the roof. There were no hot water cylinders but credits for were not claimed because HCFCs were still used in manufacture. Two additional credits were achieved through the specification of low NOx boilers. These are modulating condensing boilers (Ideal Isar) with a NOx emission of less than 100mg/kWh.

Cost

This scheme was a prototype. The premium for thermal insulation was around £580 per unit in comparison with current Building Regulations. There was no premium for specifying CFC/HCFC free insulation. Overall the scheme costs were very competitive with traditional construction, in spite of the prototype nature.

Lessons learned

The house designs can be found on www.energycells.org.uk. The SEDBUK website can help source energy efficient and low NOx boilers, see www.sedbuk.com. It is now much easier to access insulation materials that are HCFC free due to new legislation. This banned the use of HCFCs in the production and manufacture of insulating materials from January 2003. However, old stock may still have employed HCFC's in manufacture so care should be exercised in specifying for this credit.

Contact

Richard Baines, Senior Environmental Consultant.

T. 0121 561 1969

E. bainesr@bcha.co.uk

Maximum credits can be achieved if at least 80% of the site is within 500m of a food shop and post box. Additional credits are available if at least five of the following amenities are within 1km of 80% of the site, and are accessible by safe walking route(s).

- Post office
- Bank/cashpoint
- Chemist
- Medical centre
- Leisure centre
- School
- Community centre
- Public house
- Children's play area

Evidence should be provided to the assessor by indicating the type and location of the amenity on a site plan, along with a safe walking route.

Provision for home office

As job functions can be increasingly carried out in the home, the provision of a space to enable residents to set up a home office can help reduce travel from the home.

The credit can be achieved by providing two double plug sockets and two telephone points (not lines), in a room or space with access to a window or ventilation. There needs to be space for a desk, computer table and filing cabinet, and space to move around. This space should not be in the kitchen, living room, main bedroom or bathroom, except in the case of one bedroom or studio homes, where it can be in the living room or bedroom. All homes need to meet the provision in the development to achieve the credit.

Evidence should be provided to an assessor through house plans.

Pollution

EcoHomes seeks to reduce the amount of pollutants that are often associated with building materials and products.



Reducing ozone depleting substances



Ozone depleting substances such as CFCs (chlorofluorocarbons) and HCFCs (hydrochlorofluorocarbons) are not only used as refrigerants, but also in the manufacture of insulation materials. These can cause damage to the ozone layer and can exacerbate global warming. Most CFCs are already banned, and most HCFCs were banned in the manufacture of insulating products from January 2003. Care needs to be taken if products were manufactured before this time. Credits can be achieved by ensuring that materials in roof, wall and floor construction or the hot water cylinder are HCFC free.

SDS requires any products used to be CFC and HCFC free.

Specification information from product suppliers should be provided to assessors.

Specifying low NOx emitting boilers

Nitrous oxides (NOx) are associated with climate change, acid rain and the increase in atmospheric greenhouse effect, in the same way CO₂, CFCs and HCFCs are. Some boilers emit high levels of NOx, but this can be reduced through the specification of boilers with low level NOx burners. It generally follows that as energy efficiency improves, NOx emissions reduce. Credits can be achieved for low emission boilers. The cost of low NOx boilers may have been a concern in the past, but prices are falling as demand increases.

These credits cannot be achieved if homes are heated by electricity provided from the National Grid. Credits can be achieved if it is supplied by renewable sources (but not a 'green' energy tariff) or Combined Heat and Power (CHP). Specific guidance can be provided on this by your assessor.

Specification details from a supplier, along with proof of order/receipt, should be provided to an assessor.

Materials

This section focuses on the use of natural resources during construction, use, and when the life of the property is over. It encourages the use of materials with low environmental impacts. It takes into account life cycle impacts, especially for materials that are more energy intensive in their production. It considers waste issues of materials during construction and at the end of the life of the building. It also promotes the design of homes to encourage residents to recycle household waste.

CATALYST HOUSING GROUP

White City Close, London

Scheme Summary

White City Close is a mixed scheme of 20 houses and flats on a brownfield site. The scheme links with an existing housing estate, and facilitated the provision of a new community centre. It was completed in June 2002. The scheme was designed to be highly energy and water efficient.

Rating – Very Good

Special Feature Focus – Timber

The units were constructed for Catalyst by Willmott Dixon Housing Ltd using off site manufactured timber cassettes. In order to achieve materials credits, at least 75% of construction and finishing timber needed to be sourced from sustainable forests (this has changed under EcoHomes revisions 2003). The overall building elements also need to rate well in terms of overall environmental impact, as set out in the Green Guide to Housing Specification. Two credits were achieved for at least 75% of the basic building elements being sourced from suppliers covered by approved Government certification schemes. In order to achieve the credit, proof of sourcing was provided to the EcoHomes assessor. Willmott Dixon's in-house EcoHomes assessor obtained this information from all suppliers. For the windows, evidence was provided to prove the timber used for the production of the windows came from Finnish sources covered by the Pan European Forest Certification Scheme. This included an order for

Sustainably managed timber

Timber and timber products derived from managed sources are probably the only truly renewable materials used in construction. EcoHomes encourages the use of timber from properly managed plantations that support the maintenance of forests as a carbon sink, and promote balanced habitats. Alternatively, credits can be achieved if timber is re-used or from pre or post consumer waste streams.

In order to achieve credits for timber from sustainably managed forests, a commitment in the contract specification or clearly documented building evidence needs to be provided to the assessor. The evidence needs to confirm that timber is sourced from plantations that are approved by:

- Forestry Stewardship Council (FSC), or
- Pan European Forestry Council (PEFC) or equivalent scheme.



the windows, evidence of receipt on site, and certificates of the sawmill being part of the PEFC scheme. An assessment of the building materials was carried out with the matrices set out in the Green Guide to Housing Specification. An A grade was achieved.

Cost of achieving EcoHomes

In the region of £2,000 per unit.

Lessons learned

Catalyst took this opportunity to trial water efficient 6litre/4litre dual flush WCs and low flow showers in three of the units. Another three identical units are acting as a control during monitoring. Unfortunately additional credits for reduced water consumption could not be accessed as every unit has to achieve the specification to access the credit, rather than a proportion. Certain credits were not achieved, including cycle store, home office, recyclable storage, and building footprint. This highlights the flexibility of achieving EcoHomes.

Contact

Phil Thompson, Development Manager
T. 020 8621 9841
E. phil.thompson@chg.org.uk

This documentation can be secured by setting out the requirements in the contract specification and then supplied to the assessor, along with information of the certified sourcing. These credits may be more difficult to achieve.

Credits are available for the % of certified construction materials and finishing elements.

	Construction and finishing elements
30% FSC or 50% PEFC	Minimum credits
60% FSC or 80% PEFC	
75% FSC or 95% PEFC	Maximum credits

In order to achieve maximum credits, the timber that is not FSC or PEFC certified must come from temperate sources. Reused/recycled timber achieves credits in the same way as FSC.

Storage of recyclable waste

Providing dedicated space and storage containers for residents to segregate waste for recycling can help reduce the amount of domestic waste that goes to landfill. Most local authorities now provide facilities at local shops and amenity sites for recycling glass, paper, cardboard, plastic and even garden waste.

Housing associations can support resident recycling by providing internal and/or external storage containers. Three internal containers can usually be easily accommodated in kitchen cupboards. Experience shows these as cost-effective credits to achieve.

Alternatively, three large external containers can be provided within 2m of an external door, or if the local authority has a kerbside collection service the credits can be achieved with no extra cost.

Maximum credits can be achieved by providing internal and external storage containers (or where a local authority collection scheme is in place).

Information on the sizing and siting of storage, and/or evidence of a local authority kerbside scheme should be provided to the assessor.

Obtaining an A rating for materials

BRE has carried out extensive research into the lifecycle assessment and environmental impact of materials used in construction. It has established a database of Environmental Profiles of UK Construction Materials that is incorporated into the Green Guide to Housing Specification. This rates the environmental performance of materials. An A rating is best and C rating is worst. (Materials with a C rating will not achieve credits under EcoHomes). EcoHomes uses the Green Guide to determine the credits for material use.

An A rating needs to be achieved for any of the following elements to access credits.

- Roof
- External walls
- Internal walls and Floors
- Windows
- Hard landscaping
- Fencing

It is likely that many housing associations will be able to achieve the A rating for the construction elements without additional costs. In refurbishment schemes, using existing elements automatically achieves the A rating, as the environmental impact of replacing the element is greater than re-using the element.

The credits available for hard landscaping, e.g. gravel and fencing, may not be acceptable in social or maintenance terms to associations.

Specification details of the materials to be used should be provided to the assessor.



WESTLEA HOUSING ASSOCIATION

Stokes Croft, Calne, Wiltshire

Scheme Summary

Stokes Croft is a scheme of 50 houses and 4 bungalows. These were completed in 2002 as part of a redevelopment in the village of Calne. The design and specification of the homes incorporated 1NTEGER principles to ensure the improvement of their environmental performance. The timber frame units are brick or timber clad and solar hot water systems have been installed on 25 units

Rating – Good expected

Special Feature Focus – Water

Westlea Housing Association designed the scheme to be water efficient. The specification included low-flow showers over baths, spray taps to wash hand basins, and 6 litre WCs fitted as standard. An initial target included installing low volume baths with low sides and water butts to each property, however these have not been installed. Water butts might be offered to residents once they have moved in.

Cost

Very low cost.

Lessons learned

Westlea considered this a minimum cost approach to achieving EcoHomes credits. They also stress the importance of ensuring that contractors follow the specification set out as changes could impact on the final credits achievable.

Contact

Steve Parker, Building Services Manager
T. 01249 466066
E. stephen.parker@westlea.co.uk

Water

Although the UK might be experiencing milder wetter winters, water is still a scarce resource that needs to be used carefully. Water consumption has risen by over 70% in the last 30 years. One way of dealing with this growth in demand is by providing more water to homes, but this is costly and involves huge levels of infrastructure, often with environmentally degrading effects. The alternative is to help reduce the amount of water used. Improving water efficiency can also benefit residents through reduced bills.

Hastoe Housing Association's Affordable Water Action Guide and Aquaspec (www.ecde.co.uk/aquaspec) can both help determine potential water and cost savings through the specification of water saving appliances.

Credits are available for reducing water consumption by specifying water efficient appliances, introducing rainwater or greywater systems and water butts. These credits are often considered one of the hardest sets of EcoHomes credits to achieve, and many private developers seek credits from elsewhere as consumers increasingly demand power showers. It is likely that housing associations can achieve several credits relatively easily without incurring significant additional costs.

This could involve reducing the water consumption per bed space to less than 45 - 40m³ per year. The specification of spray/aerating taps on wash hand basins, low volume baths (150 litres to overflow) standard 6 litre WCs, low flow showers and water butts could help achieve this. Introducing greywater and/or rainwater recycling are currently more costly solutions to reducing water use.

Maximum credits can be achieved for reducing water consumption by less than 30m³ per year per bedspace, and minimum credits for less than 50m³.



HASTOE HOUSING ASSOCIATION

Hollister Chase, Milton Keynes

Scheme Summary

Hollister Chase is a mixed tenure development of 17 units. The site was owned by English Partnerships and was developed in accordance with their standard development brief, which required an EcoHomes 'very good' to be achieved. The scheme was part of the Amphion Consortium of housing associations supporting the development of off-site manufactured timber framed system. The timber was sustainably sourced, all windows were softwood double glazed with a low E coating. Energy efficiency was achieved through the installation of gas condensing boilers, TRV fitted radiators and an intelligent heating control system. The site was formerly grassland and bounded by a native hedge, much of which is retained in the new scheme.

Rating – Very good

Special Feature Focus – Land Use and Ecology

Hastoe Housing Association recognised the importance of developing a scheme that took into account the existing ecological value of the site. An ecological assessment was commissioned and undertaken by Land Care Associates, a member of the Association of Wildlife Trust Consultancies, as required by EcoHomes. The site was identified as naturally regenerating grassland. A detailed report of the ecological value of the site was submitted to Hastoe with a number of recommendations. Hastoe confirmed that it would act on all the recommendations outlined in the report. An existing mixed hedge was protected during development and reinforced to provide a natural boundary on three sides of the site. The audit identified that although the grassland would be lost through development, the overall species value of the site could be improved through alternative planting. Seven native tree species were recommended. In addition at least half the shrub planting was wildlife friendly.

The audit report, along with drawings, was submitted to the EcoHomes assessor in order to access the EcoHomes credits. One credit was achieved as the audit found that the land had ecological value; a second for carrying out the recommendations to promote greater diversity of plants on the site, and a third as all existing features of ecological value were to be protected during construction. A final credit was achieved for improving the ecological value of the site.

Cost

The cost of achieving EcoHomes was in the region of £900 per unit.

Contact

Elizabeth Leyland, Development Officer
T. 020 8943 4433
E. eleyland@hastoe.com

Land Use and Ecology

EcoHomes seeks to reduce negative environmental impacts on the amount and quality of land being used. At least 60% of new homes should be built on previously used land. Whether a greenfield or brownfield site, care needs to be taken to avoid using land of high ecological value and to avoid damaging important habitats that may have developed on brownfield sites.

Ecological Value of site

Credits can be achieved for building on sites with a low ecological value, and for enhancing the ecological value of a site through consultation with an accredited expert, such as the Association of Wildlife Trust Consultancies (AWTC).

Additional credits can be achieved for ensuring the protection of existing ecological features on the site during construction.

To achieve the credit for low ecological value, sites need to meet defined criteria set out in EcoHomes. Generally, if the land to be developed is either an existing building, been covered by other constructions, or requires contamination remediation, it is likely to have a low ecological value. Such sites can include up to 20% of unbuilt land, or 10% of agricultural land.

If your site does not comply with the low ecological value criteria, one credit can still be achieved by carrying out a site survey and designing within the recommendations of an AWTC, or equivalent, report. Additional costs for the site survey, around £250, and action to improve or preserve ecological value of the site could be incurred. However, it might be worth contacting the local authority to see if it has already carried out a survey on the site.

Credits are available for the following:

- land of low ecological value

- enhancing the ecological value
- protecting existing features

Evidence of these, an AWTC report and a commitment to undertake improvements or protect features needs to be provided to assessors.

Change of ecological value

Additional credits can be achieved if the development will not significantly harm or will improve the ecological value of the site. These credits are measured against the relative increase of flora by species per hectare, and are complex. For more information on this contact BRE or your assessor.

Minimum credits are possible for a minor decrease in ecological value, with maximum for significant increase in ecological value.

Building Footprint

EcoHomes encourages more effective use of land through building above two storeys. This can enable more bed spaces per building footprint. Some off-site manufacturing techniques can support this approach by enabling roof space to be used as habitable space.

Minimum credits can be achieved if 60% of the homes have a floor area over 2.5 times the size of the building footprint. Maximum credits are available if 80% of the homes on the site achieve this.

Evidence can be provided to assessors through home and site layout plans.

Health and Well Being

In this section EcoHomes focuses on the benefits that can be designed into a home to improve the quality of life for residents.

Provision of adequate daylighting

Access to natural daylight is often preferred to artificial lighting. This can help reduce energy costs (through reduced reliance on lighting) supporting passive solar gain. But a balance needs to be struck to ensure the amount of glazing does not adversely affect overheating in summer and excessive heat loss in winter.

Credits are available to provide levels of natural lighting in kitchens, dining rooms, living rooms and studies that accord with British Standards. These exceed Building Regulations. A set of calculations needs to be carried out by an assessor to determine these credits. Evidence of room and window sizing and locations should be provided to assessors.

Improved soundproofing

Noise can be a common complaint between neighbours. EcoHomes encourages developers to go beyond current Building Regulations to improve the acoustic performance of party walls and floors. Building Regulations are currently being improved to require higher levels of acoustic performance in buildings. The June 2003 EcoHomes will give credits for different levels of sound testing.

Specification details need to be provided to assessors.

CDS HOUSING **Pinehurst Estate,** **Liverpool**

Scheme Summary

This mixed development scheme of houses, flats and a bungalow was completed in 2002. The units were peppered around a transfer estate, and complemented a comprehensive refurbishment programme. CDS aimed to maximise credits through improving the all-round environmental performance of the homes. Energy efficiency, water saving measures, a healthy internal environment and general saving of resources were priority areas. The scheme was devised on the basis of a previous scheme that achieved the BRE's Environmental Award in 1998.

Rating - Very Good

Special Feature Focus - Health & Well Being

Health & Well Being credits relate to adequate day lighting, improved sound-proofing and provision of open space. To access the daylighting and soundproofing credits, standards set out in Building Regulations need to be exceeded. Although CDS did not exceed these in all homes, it did maximise daylighting through the use of sun pipes to staircases. However, this did not influence EcoHomes credits. Good levels of daylighting were provided through the sizing and location of windows. As CDS had previously built to the BRE's Environmental Standard, which took into account issues of toxicity in paints and finishes, this scheme included non-toxic paints and finishes. However, EcoHomes does not include credits for low toxicity levels. High levels of insulation added to providing a healthy environment and to ensure comfortable internal

Provision of open space

Access to open space is a minimum requirement of SDS, and also achieves EcoHomes credits.



The space can either be a secure private or shared garden for houses and flats, or a balcony or roof terrace. EcoHomes does not require a minimum size to be achieved.

Evidence of open space should be provided to assessors through site plans.

temperatures. In line with SDS all properties have private open space with strong boundaries between the public/private areas, which accessed EcoHomes credits.

Cost

To achieve the EcoHomes credits cost just under £400 per unit. Additional costs were involved to reduce the toxicity levels of the homes through linoleum flooring, ecological paints, and sunpipes. This added an additional £1,400 to each unit.

Lessons learned

The scheme is made up of a number of small sites across the estate. The dwelling types vary on each site and this can affect an overall EcoHomes rating. Some units included photovoltaics and solar hot water systems. However, as energy performance is averaged across the site, this did not increase the EcoHomes credits achieved. CDS is now working with an EcoHomes adviser to devise indicative scores and a framework that can better predict the environmental rating they choose. A guidance document has been produced for pricing, to help ensure that the whole supply chain is aware of what is required, and that CDS achieve best value.

Contact

Inger Leach, Project Manager
T. 0151 708 4628
E. inger.leach@plusgrouppltd.org.uk

3 Support for EcoHomes

Sustainability Multiplier

The Housing Corporation supports EcoHomes through SDS and the Total Cost Indicator (TCI) Framework.

As set out in Part 2, several requirements of SDS will help achieve EcoHomes credits. Housing associations can access additional funding through the Sustainability Multiplier. This is available for schemes that achieve Secured by Design and an EcoHomes (or equivalent) 'Good' rating. The amount of the multiplier varies depending on scheme size. For example on the basis of a 45m² Group E property, TCI would be £47,300, realising £946 for the sustainability multiplier (2002).

Sustainability Works

In addition to fiscal incentives for EcoHomes the Housing Corporation has supported the production of Sustainability Works. This web based tool enables housing associations to develop a sustainable construction strategy for their organisation, and staff or consultants to apply this to sites for new development. As well as providing the framework for delivering sustainability on site, it includes a library of information and, importantly, an EcoHomes prediction list.

All schemes using Sustainability Works can consider how well they might perform against EcoHomes. This will only give an indication of the final rating and associations are recommended to use an accredited assessor or trained member of staff early on in the process to ensure their schemes can achieve the best rating possible.

For more information on Sustainability Works, visit www.sustainabilityworks.org.uk.

Construction Client's Charter

EcoHomes is compatible with the need for continuous improvement as set out in the Construction Client's Charter. For more information visit www.clientsuccess.org.



PART 3

Further help

Assessors

A full list of current assessors is available from the BRE on its website, www.bre.co.uk/ecohomes/ or contact:

BREEAM Office on ecohomes@bre.co.uk, or 01923 664462

EcoHomes training

All EcoHomes schemes need to be assessed by licensed assessors. Anyone can become a licensed assessor. Several associations have already taken the opportunity to train in house assessors. For more information on the next round of assessor training contact BRE:

www.bre.co.uk/ecohomes/assessor

BREEAM Office on ecohomes@bre.co.uk, or 01923 664462

Sustainability Works

This is a fully comprehensive tool developed to help associations build homes with improved environmental performance. It enables associations to set a corporate sustainable construction policy and implement it on a scheme-by-scheme basis. It is completely compatible with EcoHomes and enables associations and their consultants to predict a possible EcoHomes rating for any scheme. Its development has been supported by the Housing Corporation to help meet its targets.

Log onto www.sustainabilityworks.org.uk to set a policy and carry out an EcoHomes prediction for all new schemes.

Green Guide to Specification

The Green Guide to Housing Specification has been developed by BRE and provides a simple reference guide for developers and specifiers on the environmental impacts of some of the most commonly used construction materials.

The BRE has developed Environmental Profiling which forms the basis of the approach. This enables designers to compare the environmental impact of different construction techniques and materials. It contains over 150 specifications commonly used in building homes.

Whole life cycle assessments have been carried out for the components. Each are judged against 12 environmental issues. These cover a range of issues including climate change, transport, waste, toxicity and extraction.

Materials for the main building components, walls, floors, and roofs, along with windows, and landscaping are rated on their environmental performance. Approaches with minimum environmental impact are A rated, and those that perform poorly are C rated. Issues around recyclability are also included.

The Guide contains a range of tables that rate the environmental performance of building materials and is easy to use. The Green Guide to Housing Specification is necessary to assess the resource use for EcoHomes.

To obtain a copy contact:

Construction Research Communications on 020 7505 6622, or crc@construct.emap.co.uk, quoting BR 390

Alternatively, contact BRE's bookshop at www.brebookshop.com

Sustainable Homes

Sustainable Homes can provide further information on achieving EcoHomes (its practicalities and costs) and other projects funded by the Housing Corporation's Innovation and Good Practice programme to support sustainable construction. Contact Sustainable Homes on 020 8973 0429 or info@sustainablehomes.co.uk or visit www.sustainablehomes.co.uk

Routes to Sustainability

Routes to Sustainability provides advice on tools to support sustainability in housing associations. It enables you to identify the best tools for you by policy or work area. Visit www.routestosustainability.org.uk

SEDBUK

For information on how well your standard boiler performs, or to select a more efficient boiler visit the SEDBUK Boiler database at www.sedbuk.com. This provides information on the seasonal energy efficiency of gas, lpg and oil boilers. The most efficient are A rated (90% efficient).

Useful Web addresses

Energy

Reducing CO2

www.bre.co.uk/services/Energy.html

www.safety.odpm.gov.uk/bregs/brads.htm

www.energy-efficiency.gov.uk/index.cfm

www.dti.gov.uk/support/eebp.htm

www.greenheat.uk.com

www.sedbuk.com

Building envelope performance

www.bre.co.uk/brecksu
www.safety.odpm.gov.uk/bregs/brads.htm
www.energy-efficiency.gov.uk/index.cfm
www.dti.gov.uk/support/eebp.htm
www.greenheat.uk.com

Provision of space heating

www.energy-efficiency.gov.uk/index.cfm

Eco-labelled goods

www.bre.co.uk/brecksu
www.saveenergy.co.uk/index.cfm
www.energy-efficiency.gov.uk/index.cfm

External lighting

www.bre.co.uk/brecksu
www.saveenergy.co.uk/howto/lighting.cfm
www.energy-efficiency.gov.uk/index.cfm

Transport

Public transport

www.highways.gov.uk
www.dft.gov.uk
www.planning.odpm.gov.uk/betrplac/

Cycle storage

www.cycle-safe.com
www.cycle-works.com
www.tuskstore.com
www.planning.odpm.gov.uk/betrplac/
www.planning.odpm.gov.uk/advice.htm

Local amenities

www.planning.odpm.gov.uk/betrplac/

Home office provision

www.planning.odpm.gov.uk/betrplac/

Pollution

HCFC emissions

www.constructionresources.com
www.securedbydesign.com
www.lindman.co.uk
www.russelldoortech.co.uk
www.fibretetekuk.co.uk
www.ecoroof.co.uk
www.sedbuk.com
www.boilers.org.uk

Low NOx emitting boilers

www.sedbuk.com
www.energy-efficiency.gov.uk/index.cfm
www.bsi-global.com
www.green-boilers.com
www.eco-hometec.co.uk
www.mtprog.com

Materials

Timber description basic building elements

www.fsc-uk.info
www.pefc.org
www.fscoax.org
www.woodforgood.com
www.goodwoodguide.com
www.forestry.gov.uk/ukwas
www.proforest.net
www.constructionplus.co.uk

Recyclable materials

www.haef.com/wastebins/welcomewastebins.html
www.straight.co.uk
www.ikea.co.uk
www.safety.odpm.gov.uk/bregs/brads.htm
www.econstruction.org
www.ciria.org/recycling

Environmental impact of materials

collaborate.bre.co.uk/envprofiles
cig.bre.co.uk/connet/mie

Water

www.safety.odpm.gov.uk/bregs/brads.htm
www.water.org.uk
www.ecde.co.uk/aquaspec/intro.htm

Land Use and Ecology

Ecological value of site

www.environment-agency.gov.uk
www.ciria.org.uk
www.bsi-global.com
www.middlemarch-environmental.com

Change of ecological value of site

www.cs2000.org.uk
www.environment-agency.gov.uk
www.planning.odpm.gov.uk/advice.htm

Building footprint

www.ciria.org.uk
www.planning.odpm.gov.uk/advice.htm

APPENDICES

Appendix 1

EcoHomes Club Summaries

Anchor Housing Trust

Childwall Heights, Liverpool
22 bungalows
Brick and block, incorporating solar thermal and PV technology
Excellent expected
Excellent achieved
Significant additional costs largely due to the use of photovoltaics, and rainwater recycling.

Aragon Housing Association

Sampshill Road, Westoning, Bedfordshire
6 houses
Brick and Block
Good expected
Good achieved on this and five additional sites.
No extra costs involved.

Black Country Housing and Community Group

Elizabeth House Bungalows,
Bryce Road, Dudley, West Midlands
2 units
Very Good expected
Very Good achieved
Extra costs difficult to identify due to innovative and research and development aspects of the scheme.

Catalyst Housing Group (Ealing Family Housing Association)

White City Close, London
20 houses and flats
Timber construction (off site manufacturing and timber cassettes)
Very Good Expected
Very Good achieved
Overall scheme cost 2% more than a standard scheme.

Plus Housing Group (CDS Housing)

Pinehurst Estate, Liverpool
27 units
Very Good expected
Very Good achieved

Drum Housing Group

Firgrove Garage Site, Whitehill, Hampshire
3 units
Traditional construction
Very Good expected
Very Good achieved
Overall scheme cost 3% more than standard.

Hastoe Housing Association

Shenley Lodge, Milton Keynes
17 houses
Timber frame, Amphion
English Partnership land
Very Good expected
Very Good achieved
Cost around £900 a unit more.

Midsummer Housing Association

Tattenhoe, Milton Keynes
12 houses
Pass expected

Prime Focus (Focus Housing Association)

Whatton Green, Castle Vale Estate, Birmingham
10 houses
Timber cassettes
Excellent expected
Excellent achieved
Overall scheme cost 5% more than a standard scheme.

South Yorkshire Housing Association

14 terraced houses in Barnsley and Sheffield.
Refurbishment of Victorian houses
Good expected

Westlea Housing Association

Stokes Croft, Calne, Wiltshire.
54 houses on brownfield site
Good expected

Appendix 2

Sample Energy Advice Leaflet for Residents



Ways to improve your energy efficiency and save money

Thinking of buying a new fridge, freezer, dishwasher, dryer or washing machine? Be sure to find out the running costs and not just the purchase price. Different models require different amounts of energy to do the same job and so will cost you different amounts of money to run.

Look out for the energy labels that are now displayed on many new domestic appliances to help you make an informed choice. They are labelled A to G. A is the most energy efficient, G is the worst. The labels also give other useful information such as energy consumption, noise levels and water consumption.

The logo can be found on lightbulbs, light fittings, refrigeration products, laundry and dishwashing appliances, as well as gas boilers and heating controls.

Even those appliances that don't have an energy label will have an energy rating, usually in watts. With a simple calculation you can work out an approximate cost to run the appliance.

Energy efficient products reduce energy wastage, save you cash on bills and help the environment. What's more, an energy efficient product doesn't necessarily cost any more to buy than its energy-leaching cousins.

NO LOGO. NO GOOD.

Illustrations courtesy of the Energy Saving Trust