



# Code for Sustainable Homes Masterclass

13 April



**CLASP.**

Delivered by



# The Code for Sustainable Homes

by

**Matt Crawford BSc MCIOB**



# The Code for Sustainable Homes

The Code for Sustainable Homes (the Code) is an environmental assessment method for rating and certifying the performance of new homes. It is a national standard for use in the design and construction of new homes with a view to encouraging improvement in sustainable home building. There are nine categories and each one includes a number of environmental issues. Each issue is a source of impact to the environment which can be assessed against a Performance target and awarded one or more credits. These performance targets are more demanding than the minimum standard needed to satisfy Building regulations or other Legislation. They represent good or best practice, are technically feasible and can be delivered by the building industry.

# The Code for Sustainable Homes

## The Nine Assessment Categories:

- Category 1: Energy
- Category 2: Water Consumption
- Category 3: Materials
- Category 4: Surface Water Runoff
- Category 5: Waste
- Category 6: Pollution
- Category 7: Health and wellbeing
- Category 8: Management
- Category 9: Ecology



# The Code for Sustainable Homes

## Dwelling Emission Rate & Fabric

- External Wall Construction
- Ground Floor Construction
- Roof construction
- Windows
- External Doors
- Boiler, cylinder and solar panel

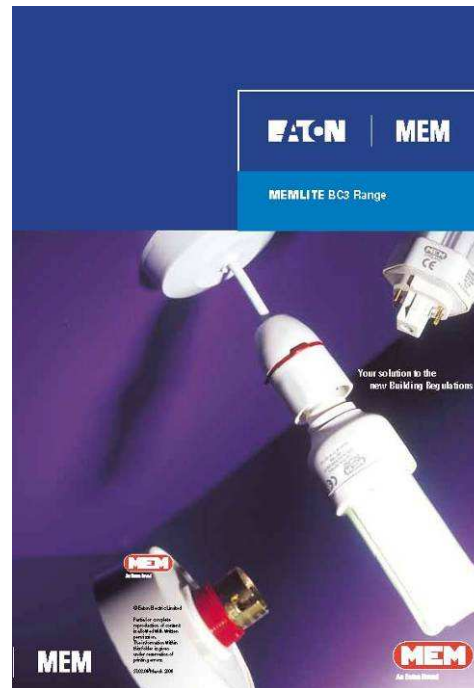


# The Code for Sustainable Homes

## Internal Lighting and External Lighting:

100% dedicated low energy fittings to all internal lights.

External space and security lighting are also dedicated low energy types with a maximum wattage of 150W, and PIR sensors and daylight sensors with 40 lumens per circuit watt are provided to every property to ensure they do not waste energy.



# The Code for Sustainable Homes

## Drying Space:

Every property will have a rotary clothes drying line concreted into place in the garden to encourage people not to use internal tumble dryers.



### 4 ROTARY DRYER TO EACH INDIVIDUAL UNIT

**2 BED UNIT = 4 linear Metres**  
**3+ BED = 6 linear Metres REQUIRED.**

**REFER TO CURRENT SITE PLAN FOR LOCATIONS OF DRYERS.**

### All external Dryers to have

- linear metre required to comply with the above.
- Be located with access from flagged area.
- Located within rear private garden spaces [rear side gates [if any] to be lockable.



# The Code for Sustainable Homes

## Energy Labelled White Goods:

White goods are not being provided within some schemes, so every property will be issued with the DEFRA leaflet regarding how to purchase white goods in the future and which rated appliances will be more economical.

**Ecotabels:**

Ecotabels usually cover a wide range of environmental impacts, across the lifetime of a product, from production and use through to disposal.

Some, like the European Ecotabel, shown below, apply to many different types of products.

**European Ecotabel**  
This is an official Europe-wide award for non-food products that minimise impacts on the environment.

Products must be independently certified, and have to meet strict criteria for all the main environmental impacts across their whole life cycle.



Defra runs the scheme in the UK, where the Flowers range excludes cleaning and detergent products, paints, toilet tissue, clothing and tourist accommodation.

[www.defra.gov.uk/environment/cons/energyprod/ecotabel](http://www.defra.gov.uk/environment/cons/energyprod/ecotabel)

<http://europas.eu.int/ecotabel>

Some countries or areas also have national schemes, like the Nordic Swan in Scandinavia and the Blue Angel in Germany shown below.

For more about ecotabels, visit the website of the Global Ecotabelling network - [www.gen.gr.jp](http://www.gen.gr.jp)

[www.ecotabel.eu](http://www.ecotabel.eu)   [www.blauer-engel.de](http://www.blauer-engel.de)

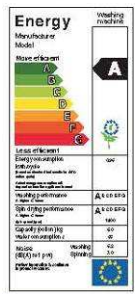
**Energy Labels**

The energy labels shown here focus on products which make the best use of energy, and so perform well while saving on running costs and helping the environment.

**European Energy Label**  
All European manufacturers and retailers must tell you about the energy efficiency of household electrical fridges, freezers, washing machines, tumble dryers, washer-dryers, dishwashers, air conditioners, ovens and light bulbs.

Products are generally rated from 'A' to 'G', with 'A' being the most efficient ('A++' and 'A+++' for the most efficient fridges and freezers).

[www.defra.gov.uk/environment/cons/energyprod/mtp](http://www.defra.gov.uk/environment/cons/energyprod/mtp)




**Energy Star**  
The Energy Star logo means that the energy consumption of an appliance is below an agreed level in 'stand-by' mode.

The logo appears on some types of office equipment, such as computers, monitors, printers and fax machines.

Within the EU, the Energy Star is a voluntary labelling scheme and its use is controlled by an agreement between the USA and European Community.

[www.energystar.org](http://www.energystar.org)




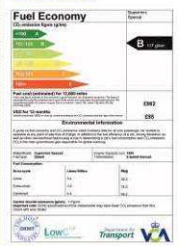
**Energy Saving Recommended**  
The Energy Saving Recommended logo endorses products that are amongst the most energy efficient available. The scheme is managed by the Energy Saving Trust.

The wide range of products covered includes appliances like washing machines and refrigeration, light fittings, gas and oil boilers, insulation, hot water cylinders and glazing.

The label shows how much carbon dioxide a car emits. Carbon dioxide is the main greenhouse gas responsible for climate change. The label also gives estimated fuel costs for 12,000 miles and the vehicle excise duty for 12 months so you can see how much these will cost before you buy. Lower carbon dioxide emissions mean lower road tax and lower running costs.

It has been introduced voluntarily by the car industry under the auspices of the Low Carbon Vehicle Partnership which was set up with Government funding. Members include car companies and environmental groups.

[www.loveco.org.uk](http://www.loveco.org.uk)

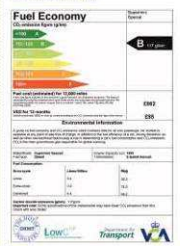
**Vehicle Labelling**

The UK Fuel Economy Label for all new cars aims to encourage reduced energy consumption and carbon emissions in the transport sector. It is similar to the European Energy label, also shown here, in order to enhance understanding about the links between energy use and climate change.

The label shows how much carbon dioxide a car emits. Carbon dioxide is the main greenhouse gas responsible for climate change. The label also gives estimated fuel costs for 12,000 miles and the vehicle excise duty for 12 months so you can see how much these will cost before you buy. Lower carbon dioxide emissions mean lower road tax and lower running costs.

It has been introduced voluntarily by the car industry under the auspices of the Low Carbon Vehicle Partnership which was set up with Government funding. Members include car companies and environmental groups.

[www.loveco.org.uk](http://www.loveco.org.uk)



**Product-Specific Labels**


These labels apply to specific types of products.

**Print: VOC Labels**  
These labels indicate the relative content of VOCs (Volatile Organic Compounds) in paints and associated products. VOCs cause air pollution and may be harmful to human health.

The industry and retailers have agreed wording and standards for the use of this voluntary label. More information is available from the British Coatings Federation. There is no standard logo, but many retailers have adopted the form of logo shown here, which was developed by BCC.


[www.coatings.org.uk](http://www.coatings.org.uk)

[www.dip.com/socialresponsibility](http://www.dip.com/socialresponsibility)



**Textiles: Oeko-Tex Standard 100**  
The Oeko-Tex Standard 100 is an international certification system for textiles and garments covering all stages of production. Labelled products are tested by independent institutes for an extensive range of harmful substances based on the latest scientific findings and legal regulations. All parts of labelled articles must meet the defined requirements.


[www.oeko-tex.com](http://www.oeko-tex.com)



**Other Symbols**


These often see symbols have a more specific meaning.

The Mobius Loop simply means that a product or part of it can be recycled where facilities are available. The inclusion of a figure shows the percentage of recycled material that has been used to make the product.



[www.biffa.co.uk/getrecycling/symbols.php](http://www.biffa.co.uk/getrecycling/symbols.php)

The Green Dot is a registered trademark. It means that a financial contribution has been paid to an authorised packaging recovery scheme. The UK is not a participating Green Dot system country.



<http://www.prose.org/>

# The Code for Sustainable Homes

## Low or Zero Carbon Technologies:

Where renewable technologies are proposed on a scheme a report can be commissioned to look at the feasibility of the different types on the market and propose the best solution for that project. The report needs to be undertaken by an independent energy specialist. Depending the Code / Sap assessor, this may be something that they can provide. On Baras a 10% reduction in carbon emissions is anticipated so 1 credit can be scored.

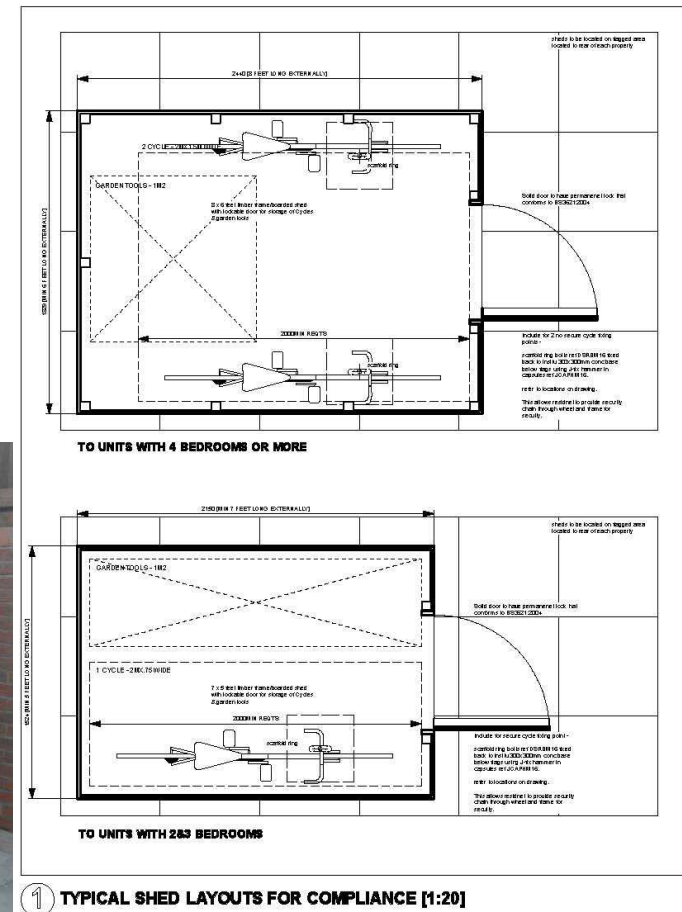
As higher levels of the code are sought these credits become easier to achieve due to more renewable technology being installed in the property.

# The Code for Sustainable Homes

## Cycle Storage:

Every property will have a cycle store by way of a garden shed. The shed has a chain that is concreted into the ground to allow cycles to be securely fixed.

- 2 beds = 4m<sup>2</sup>
- 3 beds = 4m<sup>2</sup>
- 4 beds = 6m<sup>2</sup>





# The Code for Sustainable Homes

## Internal Water Usage:

Baths need to have maximum capacity of less than 140 litres

Toilets need to be fitted with a 4/2.6ltr flush

Taps to all have flow restrictors of:  
3l/min for wash hand basins  
4l/min for kitchen sink taps

Shower to have maximum flow rate of less than 6ltr per minute



# The Code for Sustainable Homes

## External Water Usage:

Every property will have a 200l water butt fitted to include an auto overflow on a stand with a child proof lockable lid, tap and chained to the wall.



### ② WATER BUTT REQUIREMENTS EACH INDIVIDUAL UNIT

**2 BED UNIT = 150LITRE WATER BUTTS**  
**3+ BED = 200 LITRE WATER BUTTS REQUIRED.**

**REFER TO CURRENT SITE PLAN FOR LOCATIONS OF BUTTS.**

**Green** plastic water butts to have

- childproof lid
- located on a stand
- tap at base
- connected to rwp with auto overflow
- allow for access to interior of downpipe for cleaning mechanism [do not glue]
- chained to wall for stability
- positioned on conc. flags with adequate flags surrounding butt to allow for 900mm clear access around butt.



### ③ COMPOSTER

**REFER TO CURRENT SITE PLAN FOR LOCATIONS OF COMPOSTER.**

plastic composters to have

- to be located away from dwellings [generally to the rear of the gardens - see site plans]
- be located on soil area [not on flags]
- bin to be in an accessible area in the garden [walking over grassed area is satisfactory for access to composter]
- provide information leaflet indicating how composting works and why its important as well as stating examples of materials which can be composted.

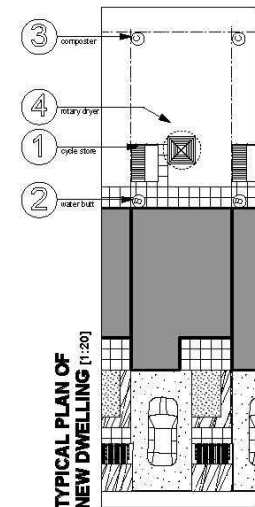
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**All external Dryers** to have

- linear metre required to comply with the above.
- Be located with access from flagged area.
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# The Code for Sustainable Homes

## Environmental Impact of Materials:

The materials used in the construction of Barras Close are scored using the Green Guide in respect to the following areas: Roof, External Walls, Internal Walls, Upper and Ground Floors and Windows.



External walls; Internal walls and partitions; Roofs  
Ground floors; Upper floors; Windows  
Insulation; Landscaping; Floor finishes

# The Code for Sustainable Homes

## Responsible Sourcing of Materials:

For Mat 2 and Mat 3, where 80% of the following basic and finishing building materials are responsibly sourced credits can be awarded. Copies of all certificates are required for these credits to be awarded.

Registration Certificate



BM TRADA certify that the PEFC Chain of Custody System of

**Alfred Hulme**  
North East Avenue  
Brimsall  
Chorley  
PR6 8RR

meets the requirements of  
Annex 4 and Annex 5 of the PEFC Council Technical Document:  
Chain of Custody Forest Based Products – Requirements ([www.pefc.org](http://www.pefc.org))  
The client agrees to maintain their Chain of Custody System to continually  
meet the requirements and use the logo and accreditation  
mark in accordance with BM TRADA and PEFC Regulations

Scope	Method	Raw Material Definition
The Purchasing, Processing, Sales and Distribution of PEFC Certified Timber and Timber Products.	Physical Separation Method	Appendix 1

**Product Groups Covered by this Certification**

- Sawn Softwood
- Machined Softwood
- Treated Softwood
- MDF Mouldings
- Panel Products
- Sheet Materials
- Flooring
- Sawn Hardwood
- Machined Hardwood

*DAVID JAMES*

Signed on behalf of BM TRADA Certification Ltd  
Stonking Lane, Hughenden Valley, High Wycombe, Buckinghamshire, HP14 4ND  
A complete list of the certified products and services available to the above scope of certification is available from  
BM TRADA at the above address or by e-mail via [www@trada.com](mailto:www@trada.com)  
This certificate remains the property of BM TRADA Certification Ltd  
to whom it must be returned on request.

Certificate Number  
BMT-PEFC-0120

Date of Initial  
Registration  
4 March 2005

Date of Last Issue  
1 April 2009

Date of Expiry  
2 March 2013



012 PEFC/16-44-002



Corporate Certificate of Registration

This is to certify that the Environmental Management System of  
**Ibstock Brick Ltd**  
Leicester Road, Ibstock, Leicestershire, LE67 6HS

Meets the requirements of  
**ISO 14001:2004**

Scope of Registration  
The Environmental Management System at Ibstock Brick Ltd for the  
Winning of Clay, Production of Clay Masonry Units, Administrative  
Office Functions and the Operation of an Inert Landfill Site.

At the Locations defined in Appendices 1 to 24.

Signed for and on behalf of CICS

*Tim Waltham*  
General Manager

Certificate No: 24494 Current Date of Issue: 19 November 2008  
Original Date of Issue: 22 November 2005 Date of Expiry: 21 November 2011  
Issue 1: 11/08



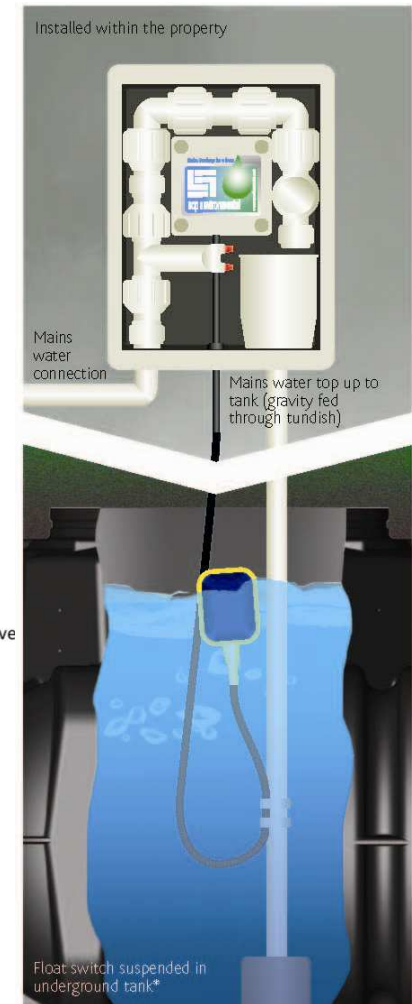
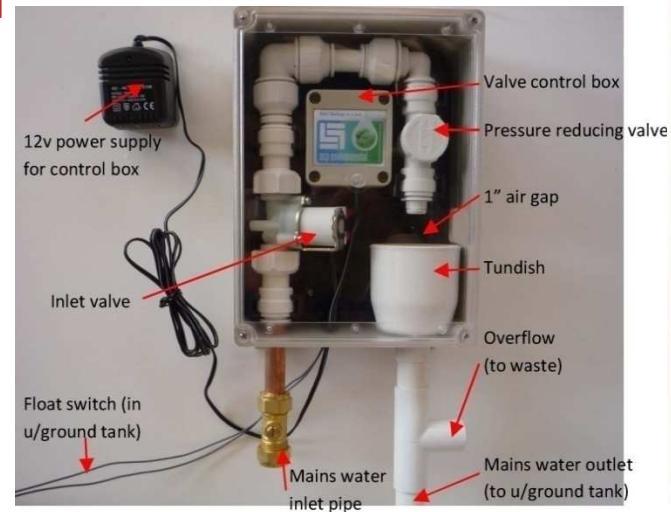
This Certificate of Registration is granted subject to conformance with the conditions of contract governing the registration.  
Further clarifications regarding the scope of this certificate and the applicability of ISO 9001:2000 requirements may be obtained by  
contacting the registrant.  
The use of the Accreditation Mark indicates accreditation in respect of those activities covered by the accreditation certificate no.006.  
Complete Integrated Certification Services Ltd, Queens Road, Fossehill, Stoke-on-Trent, ST4 7UD, England.



# The Code for Sustainable Homes

## Surface Water Runoff:

Surface Water Runoff is designed to avoid, reduce and delay the discharge of rainfall to public sewers and watercourses. Barras Close complies with the mandatory element of Surface Water Runoff through the on site drainage system and the four bed family properties being installed with a rainwater harvesting system which is recycled to flush the downstairs toilet.



# The Code for Sustainable Homes

## Flood Risk Assessment:

The flood risk assessment needs to be undertaken by the engineer for the Scheme. The aim is to try and encourage housing development in low flood risk areas, or to take measures to reduce the impact of flooding on houses built in areas with a medium or high risk of flooding.

Barras Close gains 2 credits under this section because there is a low annual probability of flooding as defined in PPS25.



# The Code for Sustainable Homes

## Storage of Waste:

3 number internal bins are being fitted within a base unit in the kitchen units along with an external storage area (either front or back) to site the type of storage that the local Council operate. By catering for both the above, the maximum 4 credits can be awarded.



# The Code for Sustainable Homes

## Construction Site Waste Management:

It is mandatory that a site waste management plan must be developed and implemented. To gain additional credits, procedures and commitments to waste and monitoring must be introduced on site or by a licensed contractor.



### Site Waste Management Plan

*Barras Close*



# The Code for Sustainable Homes

## Composting:

A compost bin is provided to every rear garden to encourage garden and food waste to be diverted from landfill. Maximum credits are awarded for providing this to every garden.



### ③ COMPOSTER

**REFER TO CURRENT SITE PLAN FOR LOCATIONS OF COMPOSTER.**

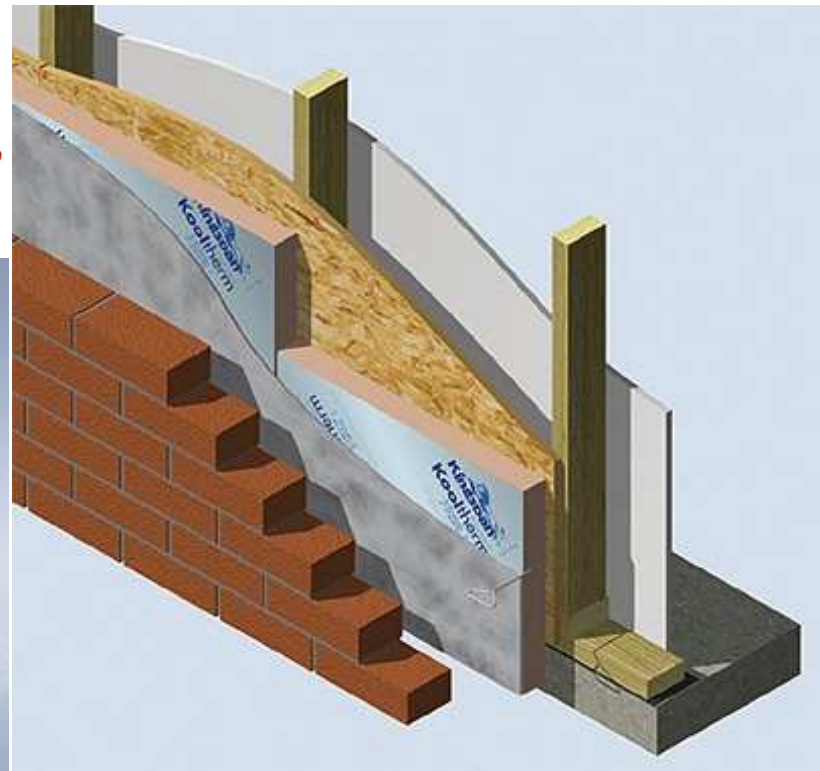
plastic composters to have

- to be located away from dwellings [generally to the rear of the gardens - see site plans]
- be located on soil area [not on flags]
- bin to be in an accessible area in the garden [walking over grassed area is satisfactory for access to composter]
- provide information leaflet indicating how composting works and why its important as well as stating examples of materials which can be composted.

# The Code for Sustainable Homes

## Global Warming Potential of Insulants:

1 credit is awarded where loft access insulation, wall insulation, floor insulation, water cylinders and stores, cold water tanks and external door insulation has a global warming potential from the blowing agent emissions of less than 5.




# The Code for Sustainable Homes


## NOx Emissions:

All boilers emit nitrogen oxide into the atmosphere. Credits are awarded on the basis of Nox emissions arising from the operation of space heating and hot water systems for each dwelling. The Potterton Promax SL boiler is fitted on Barras Close and allows the maximum of 3 credits to be awarded.


### Technical specifications




Flue lengths up to 75m – gives you siting flexibility




1 year warranty




Ultra-low NO<sub>x</sub> emissions Class 5 (the best) – helping to protect the environment



Can be situated in an unventilated cupboard



SEDBUK Band A – highest energy efficiency rating



Integral Frost Protection

	Units	Promax System 12 HE Plus	Promax System 15 HE Plus	Promax System 18 HE Plus	Promax System 24 HE Plus	Promax System 32 HE Plus
Seasonal Efficiency	%	90.1	90.2	90.2	90.2	90.1
SEDBUK Band		A	A	A	A	A
NO <sub>x</sub> Class		5	5	5	5	5
EcoHomes Credits		3	3	3	3	3





# The Code for Sustainable Homes

## Daylighting:

All rooms must achieve a certain percentage of daylight to avoid the need to use energy to light the home. The assessor will carry out an assessment on each house type and confirm whether 1, 2 or 3 credits can be awarded in this category. Barras qualifies for one credit to be awarded.

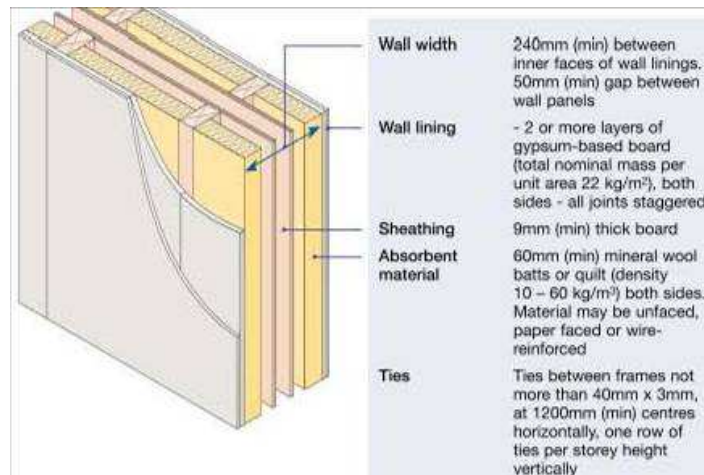




# The Code for Sustainable Homes

## Sound Insulation:

If a scheme is registered and constructed in accordance with Robust Details, then credits can be awarded. E-WT-1 is a timber frame details and allows 3 credits to be Awarded.



# The Code for Sustainable Homes

## Private Space:

Where every property on a scheme has their own secure rear garden the occupiers quality of life has been improved and under the code is eligible for 1 credit.



# The Code for Sustainable Homes

## Home User Guide:

Every property on the site will receive a home user guide which will detail how the property and fittings work, and what energy saving measures have been built into their house. It will then go on to provide information about the area they are moving into like schools, hospitals, places of worship, medical centres, recycling centres, kerb side refuse collection. In providing this document, the maximum 3 credits are achieved.



**Barras Close, Carlisle**

**Home User Guide**

Plot 1



# The Code for Sustainable Homes

## Considerate Constructors Scheme:

All Lovell sites are registered with Considerate Constructors who will visit site and score the development where there is a commitment to meet best practice 1 credit will be achieved. Where the development goes beyond best practice 2 credits can be awarded.



# The Code for Sustainable Homes

## Construction Site Impacts:

Four areas have been selected for the site to monitor and review to encourage sites to be managed in a manner to mitigate environmental

- a) Monitor, report and set targets for water consumption from site activities.
- b) Adopt best practice policies in respect of air (dust) pollution arising from site activities
- c) Adopt best practice policies in respect of water (ground and surface) pollution occurring from the site.
- d) 80% of site timber is reclaimed, re-used or responsibly sourced.



# The Code for Sustainable Homes

## Security:

Although Secured by Design Certification is not required, consulting and implementing the ALO's advice is sufficient to gain the code credits. Due to the nature of our work, the majority of schemes will achieve full Secured by Design accreditation.



04 Secured by Design Doors
16 Secured by Design Doors



**Crime Reduction and Responsibility**  
Secured by Design (SbD) is the UK police flagship initiative supporting the principles of designing out crime. Supported and managed by the Association of Chief Police Officers, the initiative has achieved significant successes as demonstrated by research carried out by Huddersfield University. This shows that residents living in SbD developments experience between 56% and 67% less crime.

All local authorities have a responsibility under Section 17 of the Crime & Disorder Act 1998 to take account of community safety and crime reduction in all aspects of their duties.

**Secured by Design Licensed Products**  
Essential to the SbD scheme are Licensed Products which are successfully tested to meet the relevant Police Preferred Specifications. The Specifications for doors are PAS 23-1:1999, which is a performance standard that certifies that a door is fit for purpose, and PAS 24-1:2007 which covers enhanced security performance requirements for door assemblies. To ensure compliance the 16 Secured by Design approved range of doors are third party accredited by the British Board of Agrement (BBA).

PAS 24-1:2007 is an attack test standard that certifies that a door, frame, lock and hardware set has withstood a series of physical tests based on common methods of burglars using defined sets of tools and attack time.

**Features and Benefits**

- High security 2 hook multipoint lock
- Laminated glass
- High security glazing cassette
- Available in Steel and GRP
- Available with letterplate security head, door chain and eye-viewer
- Secure belt through furniture
- Available with cylinder security pack



Anti-manipulation cylinder

**Secured by Design Door Styles**



**Decorative Glazing**  
16 Secured by Design approved doors are available with the full range of decorative glass options as detailed on pages 24-27. Laminated glass is used in one pane as required by the SbD specification.



**Timber Frame Sizes**

Overall Frame Size	Door Width	Sill Height	Clear Opening
847mm x 2097mm	762mm	25mm	-
881mm x 2097mm	813mm	45mm	-
922mm x 2097mm	845mm	25mm	775mm
1001mm x 2097mm	914mm	25mm	850mm
1001mm x 2097mm	914mm	25mm	850mm

None at overall size based on PAS92 frame section

**PVCu Frame Sizes**

Overall Frame Size	Door Width	Sill Height	Clear Opening
851mm x 2098mm	762mm	25mm	-
884mm x 2097mm	813mm	45mm	-
924mm x 2098mm	845mm	25mm	775mm
1002mm x 2098mm	914mm	25mm	850mm
1002mm x 2098mm	914mm	25mm	850mm

None at overall size based on PAS92 frame section

Legend:   GRP Fibreglass only  
  Original Steel only

**Notes**  
Standard SbD frames are available in either GRP or steel, as required. Other styles accredited are timber frame, design inspired lights and clear glazing, although certain restrictions apply. \*Door styles available as Original Steel only.

**“enhanced security, less crime, peace of mind...”**




# The Code for Sustainable Homes

## Ecological Value Of the Site:

To encourage development on land that has a low wildlife value and discourage the development of ecologically valuable sites. A qualified ecologist needs to write a report stating the construction zone is of low or insignificant ecological value.

## Ecological Enhancement:

By undertaking certain recommendations made by the ecologist that will positively enhance the ecology of the site, 1 credit is achieved.



**Barras Close, Carlisle**  
**Code for Sustainable Homes**  
**Ecological Assessment**

Produced for


*Lovell Partnerships Ltd*  
*Nelson House*  
*Park Road*  
*Altrincham*  
*WA14 5DL*

**DRAFT**

September 2009

Produced by

Written:	Checked:	Approved:
KS	LC	



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Genesis Centre  
Birchwood Science Park  
Warrington  
WA3 7BH  
Tel: 01925 844004  
E-mail: tep@tep.uk.com  
Web site: www.tep.uk.com

# The Code for Sustainable Homes

## Protection of Ecological Features:

The aim of this section is to provide protection to any existing ecological features from substantial damage during the clearing and construction works. The ecologist will detail the type of protection required, the extent and location in their report which will be retained for the duration of works.

## Change in Ecological Value:

The Ecologist will evaluate the landscape proposals against the ecological value of the site prior to construction and will award credits depending on the number and type species any impact on the ecological value of the site.

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Many thanks to the following for  
arranging the visit to Barras:



**Riverside**



**LOVELL**

Are there any questions?



# The Code for Sustainable Homes

