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Code for Sustainable Homes

Technical Guide November 2010 - Full Technical Guide

Pre-Assessment Report

STROMA CERTIFIED CODE ASSESSOR

ashbyenergy assessors

Report Reference:	
Site Registration:	
Site Name:	**45-47 Hinckley Road**
Assessor Number:	
Company:	**Ashby Energy**
Assessor:	**Nigel Ingham**

THE CODE FOR SUSTAINABLE HOMES

CERTIFICATION MARK

Code for Sustainable Homes

Pre-Assessment Report (Report Reference:)

Site Details	
Site Name:	45-47 Hinckley Road
Site Registration:	
Site Address:	Plot 1
	45 - 47 Hnckley Road
	Burbage
City/Town:	Hinckley
County:	Leicestershire
Postcode:	
No. of Dwellings:	1
No. of Dwelling Types:	0
Planning Authority:	Hinckley & Bosworth Borough Council
Funding Body:	

Assessor Details	
Company:	Ashby Energy
Assessor Name:	Nigel Ingham
Cert Number:	
Address:	Second Floor
	81 Market street
City/Town:	Ashby de la Zouch
County:	Leicestershire
Postcode:	LE65 1AH
Tel:	01743 861100
Email:	nigel@idea-ingham.co.uk

Client Details	
Company:	
Contact Name:	Stoke Evans Developments
Job Title:	
Email:	
Tel:	
Address:	
City/Town:	
County:	
Postcode:	

Architect Details	
Company:	Hayward Architects
Contact Name:	
Job Title:	
Email:	
Tel:	01455 635665
Address:	19 station Road
City/Town:	Hinckley
County:	Leicestershire
Postcode:	LE10 1AW

Developer Details	
Company:	
Contact Name:	
Job Title:	
Email:	
Tel:	
Address:	
City/Town:	
County:	
Postcode:	

Dwelling ID	Plot No.	Address	Social Unit
1		Plot 1 Hinckley Road Burbage	No

Development Summary & Ratings

Dwelling ID	Dwelling Type	Description	Level	Score
		Plot 1Hinckley Road	3	57.61

Deviations from Standard

No deviations from standard

Score Sheet for 45-47 Hinckley Road

	ENE									WAT		MAT			SUR		WAS			POL		HEA				MAN				ECO					Summary	
Dwelling ID	1	2	3	4	5	6	7	8	9	1	2	1	2	3	1	2	1	2	3	1	2	1	2	3	4	1	2	3	4	1	2	3	4	5	Score	Level
1	0.8	3.8	2	1	2	2	0	2	1	3	1	10	4	2	2	2	4	0	1	1	3	3	4	1	0	3	0	0	0	1	1	1	3	0	57.61	3

Summary Score Sheet

Dwelling Type: Plot 1 Hinckley Road

Dwelling ID: 1

	Credit Score	Credits Available	Score Assessment Sub Total	Credits Available	%	Weighting Factor	Points Score
Energy & CO2 Emissions							
ENE 1 Dwelling Emission Rate	0.8	10	14.6	31	47.1	36.4	17.14
ENE 2 Fabric Energy Efficiency	3.8	9					
ENE 3 Energy Display Device	2	2					
ENE 4 Drying Space	1	1					
ENE 5 Energy Labelled White Goods	2	2					
ENE 6 External Lighting	2	2					
ENE 7 Low or Zero Carbon Energy Technologies	0	2					
ENE 8 Cycle Storage	2	2					
ENE 9 Home Office	1	1					
Water							
WAT 1 Internal Water Use	3	5	4	6	66.67	9	6
WAT 2 External Water Use	1	1					
Materials							
MAT 1 Environmental Impact of Materials	10	15	16	24	66.67	7.2	4.8
MAT 2 Responsible Sourcing (Basic Building Elements)	4	6					
MAT 3 Responsible Sourcing (Finishing Elements)	2	3					
Surface Water Run-off							
SUR 1 Management of Surface Water Run-Off from Site	2	2	4	4	100	2.2	2.2
SUR 2 Flood Risk	2	2					
Waste							
WAS 1 Household Waste Storage and Recycling Facilities	4	4	5	8	62.5	6.4	4
WAS 2 Construction Site Waste Management	0	3					
WAS 3 Composting	1	1					
Pollution							
POL 1 Global Warming Potential of Insulants	1	1	4	4	100	2.8	2.8
POL 2 NOx Emissions	3	3					
Health & Wellbeing							
HEA 1 Daylighting	3	3	8	12	66.67	14	9.33
HEA 2 Sound Insulation	4	4					
HEA 3 Private Space	1	1					
HEA 4 Lifetime Homes	0	4					
Management							
MAN 1 Home User Guide	3	3	3	9	33.33	10	3.33
MAN 2 Considerate Constructors Scheme	0	2					
MAN 3 Construction Site Impacts	0	2					
MAN 4 Security	0	2					
Ecology							
ECO 1 Ecological Value of Site	1	1	6	9	66.67	12	8
ECO 2 Ecological Enhancement	1	1					
ECO 3 Protection of Ecological Features	1	1					
ECO 4 Change of Ecological Value of Site	3	4					
ECO 5 Building Footprint	0	2					
	Level Achieved: 3		**Total Points Scored: 57.61**				

Evidence for ENE 1 (Dwelling Emission Rate)

Improvement above Part L Building Regulations 2010. 0.8 credits allocated

Detailed documentary evidence confirming the TER, DER and percentage improvement of DER over TER based on design stage SAP outputs*

SAP calculation show 0.8 credits at an air test figure of 6.

Assumptions for ENE 1

SAP 2011 is more demanding, so build standards will need to be quite high in terms of U values. For Code level 3 a target of 25% improvement for DER above TER - MANDATORY

Evidence for ENE 2 (Fabric Energy Efficiency)

Detached
3.8 credits allocated

Detailed documentary evidence confirming the TER, DER and percentage improvement of DER over TER based on design stage SAP outputs*

Assumptions for ENE 2

Will need to build to go U value standard to achieve points . The figures will dependent on SAP outputsand therefore not known in advance.- only MANDATORY at levels 5 & 6

Evidence for ENE 3 (Energy Display Device)

Correctly specified display device showing current primary heating fuel consumption data.
Correctly specified display device showing current consumption data.

Detailed documentary evidence confirming:
That the correctly specified energy display device is dedicated to the dwelling
AND
The consumption data displayed by the correctly specified energy display device

Assumptions for ENE 3

Where current electricity OR primary heating fuel consumption data are displayed to occupants by a correctly specified energy display device. = 1

Where current electricity AND primary heating fuel consumption data are displayed to occupants by a correctly specified energy display device. = 2

Assume both points here

Evidence for ENE 4 (Drying Space)

Compliant internal & external drying space

For internal or external drying space, detailed documentary evidence confirming:
- The location of fixings/footings or posts
- The length of drying line

Assumptions for ENE 4

Where space and equipment are provided for drying clothes:

- For 3+ bedroom dwellings, the drying equipment must be capable of holding 6m+ of drying line

The drying space (internal or external) must be secure

Evidence for ENE 5 (Energy Labelled White Goods)

A+ rated fridge & freezers or fridge/freezer
A rated washing machine and dishwasher AND B rated washer-dryers & tumbles dryers, or EU energy efficiency labelling scheme leaflet where washing machines and/or dishwashers not provided

If any white goods are to be provided, detailed documentary evidence confirming:
The appliances to be provided with their applicable ratings under the EU Energy Efficiency Labelling Scheme

Where washer dryers or tumble dryers will not be provided and the second credit is sought, provide detailed documentary evidence as follows:
- A copy of the EU Energy Efficiency Labelling Scheme Information

AND
- Confirmation that the information will be provided to all dwellings

Assumptions for ENE 5

Assume both points selected here

Evidence for ENE 6 (External Lighting)
Compliant space lighting Compliant security lighting
Relevant drawings clearly showing the location of all external light fittings AND Detailed documentary evidence confirming: • The types of light fitting and efficacy, in lumens per circuit watt, for all lamps • The control systems applicable to each light fitting or group of fittings
Assumptions for ENE 6
Space Lighting Where all external space lighting, including lighting in common areas, is provided by dedicated energy efficient fittings with appropriate control systems. Note: Statutory safety lighting is not covered by this requirement Security Lighting Where all security lighting is designed for energy efficiency and is adequately controlled such that: All burglar security lights have: • A maximum wattage of 150 W AND • Movement detecting control devices (PIR) AND • Daylight cut-off sensors All other security lighting: • Is provided by dedicated energy efficient fittings AND • Is fitted with daylight cut-off sensors OR a time switch

Evidence for ENE 7 (Low or Zero Carbon Energy Technologies)
Credit(s) not sought or contribution of low or zero carbon technologies less than 10%
No LZC involved If LZC to be consderdclater - A copy of calculations as detailed in the assessment methodology based on design stage SAP outputs AND Detailed documentary evidence confirming that the specified low or zero carbon technologies: • Meet any additional requirements defined in Directive 2009/28/EC as applicable. And are: • Certified under the Microgeneration Certification Scheme*
Assumptions for ENE 7
It may well be beneficial to achieve compliance via the use of PV and/or solar hot water,

Evidence for ENE 8 (Cycle Storage)
2 or 3 bedroom dwelling - Storage for 2 cycles per dwelling
Detailed documentary evidence showing: • The number of bedrooms and the corresponding number of cycle storage spaces per dwelling • Location, type and size of storage • Convenient access to cycle storage • Any security measures • Details of the proprietary system (if applicable) • How the requirements of clause 35 of Secured by Design - New Homes 2010 will be met (if applicable)
Assumptions for ENE 8
Assumed storage for 2 cycles - secure point or shed

Evidence for ENE 9 (Home Office)
Compliant home office
Detailed documentary evidence showing: • Location of and sufficient space for the home office • Location and number of sockets • Location of telephone points • That adequate ventilation will be provided • That an average daylight factor of at least 1.5% is achieved • Confirmation of one of the following: - cable connection - that broadband is available at the site level (not for individual dwellings), i.e. a letter from the developer confirming that they have checked that broadband is available - two telephone points (or double telephone point)
Assumptions for ENE 9
Where sufficient space and services have been provided which allow occupants to set up a home office in a suitable room. The space dedicated for use as a home office must have adequate ventilation and achieve an average daylight factor of 1.5%.

Evidence for WAT 1 (Internal Water Use)
Internal water use less than or equal to 105 litres per person per day
Completed Water Efficiency Calculator for New Dwellings internal potable water use for each dwelling which has a different specification AND Detailed documentary evidence showing: • Location, details and type of appliances/ fittings that use water in the dwelling including any specific water reduction equipment with the capacity / flow rate of equipment. • Location, size and details of any rainwater and greywater collection systems provided for use in the dwelling Where detailed documentary evidence is not available at this stage; Completed Water Efficiency Calculator for New Dwellings internal potable water use for each dwelling which has a different specification AND A letter of instruction to a contractor/ supplier or a formal letter from the developer giving a specific undertaking, providing sufficient information to allow the water calculations to be completed
Assumptions for WAT 1
105 litres per person per day is minimum for level 3 - MANDATORY

Evidence for WAT 2 (External Water Use)
Compliant individual rainwater collection system
Detailed documentary evidence stating type, size and location of any rainwater collection systems
Assumptions for WAT 2
Assumed a water butt is used.

Evidence for MAT 1 (Environmental Impact of Materials)
Mandatory requirements met: At least 3 elements rated A+ to D, 10 credits scored
Completed Code Mat 1 Calculator Tool, showing building elements at the design stage with the relevant Green Guide element numbers AND References stating the design or specification documentation used to complete the tool Assessor will need details of construction materials
Assumptions for MAT 1
Where at least three of the following five key elements of the building envelope achieve a rating of A+ to D in the 2008 version of The Green Guide: • Roof • External walls • Internal walls (including separating walls) • Upper and ground floors (including separating floors) • Windows This is the minimum required - up to 10 points likely from a range of 1 - 15 points, based on similar assessments.

Evidence for MAT 2 (Responsible Sourcing (Basic Building Elements))
4 credits scored
Completed Code Mat 2 Calculator Tool, showing building elements at the design stage AND Detailed documentary evidence stating the materials specified in each element Assessor will need details of materials to carry out assessment
Assumptions for MAT 2
Where 80% of the assessed materials in the following Building Elements are responsibly sourced: a) Frame b) Ground floor c) Upper floors (including separating floors) d) Roof e) External walls f) Internal walls (including separating walls) g) Foundation/substructure (excluding sub-base materials) h) Staircase Additionally, 100% of any timber in these elements must be legally sourced Assumed 4 out of 6 credits

Evidence for MAT 3 (Responsible Sourcing (Finishing Elements))
2 credits scored
Completed Code Mat 3 Calculator Tool, showing building elements at the design stage AND Detailed documentary evidence stating the materials specified in each element
Assumptions for MAT 3
Assume 2 of 3 credits Where 80% of the assessed materials in the following Finishing Elements are responsibly sourced: a) Staircase b) Windows c) External & internal doors d) Skirting e) Panelling f) Furniture g) Fascias h) Any other significant use Additionally, 100% of any timber in these elements Again might have cost and time implications.

Evidence for SUR 1 (Management of Surface Water Run-Off from Site)

Mandatory Met: Peak rate of run-off and annual volume of run-off is no greater for the developed than for the pre-development. The system has also been designed for local drainage system failure.
No discharge to watercourse(s) for rainfall depth up to 5mm.
Run-off from all hard surfaces shall receive an appropriate level of treatment (as per the SudS manual) to minimise risk of pollution.

A Hydrologist's report will be required

Mandatory Elements:
Statement from the appropriately qualified professional confirming that they are qualified in line with the Code definition.
AND
The appropriately qualified professional's report containing all information necessary to demonstrate compliance with the peak rate of run-off and volume of run-off requirements. The report should include:
• Areas of permeable and impermeable surfaces on the site pre- and post- development
Where the impermeable area has increased post development the report should also include:
• Details of the permeability characteristics of the site pre- and post-development (e.g. infiltration tests etc where appropriate)
• Peak rates of run-off (l/s) calculations for the 1 year and 100 year events, pre- and post-development, including an allowance for climate change over the development lifetime
• Detailed documentary evidence showing the methods used to reduce the peak rate of run-off to pre-development rates
• The pre- development volume of run-off (m3) for the 100 year 6 hour event
• The additional volume of run-off (m3) for the 100 year 6 hour event caused by the development without mitigation measures
• The additional volume of run-off (m3) with the proposed mitigation

Assumptions for SUR 1

Hydraulic Control Criteria
The SuDS Management Train should be used as a guide to achieve the following:
1) Peak Rate of Run-off
If there is no increase in the man-made impermeable area as a result of the new development, then the peak rate of run-off criterion does not apply.
Where there is an increase in impermeable area, ensure that the peak rate of run-off over the development lifetime, allowing for climate change, will be no greater for the developed site than it was for the pre-development site. This should comply at the 1 year1 and 100 year2 return period events (see Calculation Procedures).
Where the pre-development peak rate of run-off for the site would result in a requirement for the post-development flow rate (referred to as the limiting discharge) to be less than 5 l/s at a discharge point, a flow rate of up to 5 l/s may be used where required to reduce the risk of blockage.
Note: If as a result of the new development, there is an increase in the volume of run-off discharged for the 100 year 6 hour event and section 2A cannot be met (see section 2 below), these run-off rates do not apply.

1. One credit can be awarded by ensuring there is no discharge from the developed site for rainfall depths up to 5 mm (see Calculation Procedures).
2. One credit can be awarded by ensuring that:
• The run-off from all hard surfaces shall receive an appropriate level of treatment in accordance with The SuDS Manual to minimise the risk of pollution.
Note: The SuDS Manual best practice recommendations should be followed where there is a risk to groundwater from infiltration (for example contaminated land, developments with high risk of pollution incidents)

EXTERNAL COST OF HYDROLOGIST - MANDATORY

Evidence for SUR 2 (Flood Risk)

Low flood risk - zone 1

For developments situated in Zone 1:
• A Flood Risk Assessment (prepared according to good practice guidance as outlined in PPS25 Development and Flood Risk) which shows that there is a low risk of flooding from all sources.

For medium (Zone 2) or high (Zone 3a) flood risk areas:

• A Flood Risk Assessment (prepared according to good practice guidance as outlined in PPS25 Development and Flood Risk) which shows there is a medium or high risk of flooding
AND
• Site plans indicating the design flood level, the range of ground levels of the dwellings, car parking areas and site access (lowest to highest), showing that the criteria (finished floor levels of all habitable rooms and access routes being at least 600 mm above the design flood level) are met, along with any notes explaining the function of any areas lying below the design flood level
AND
• Confirmation from the local planning authority that the development complies with PPS25 and is appropriately flood resilient and resistant, and has managed any residual risk safely.

Assumptions for SUR 2

Assuming low flood risk area - assessor needs to be advised if medium or high flood risk area

Two credits are available for developments situated in Zone 1 - low annual probability of flooding (as defined in PPS25 Development and Flood Risk) and where the site-specific Flood Risk Assessment (FRA) indicates that there is low risk of flooding from all sources.

EXTERNAL COST OF HYDROLOGIST

Evidence for WAS 1 (Household Waste Storage and Recycling Facilities)

Mandatory requirements met: Adequate storage of household waste with accessibility in line with checklist WAS 1. Local authority collection: After collection sorting with appropriate internal storage of recyclable materials

Where 4 credits are sought: Detailed documentary evidence stating: • the location of internal and external storage • the number, types and sizes of internal and external storage

AND A letter, leaflet, website or other published information from the Local Authority/waste scheme provider* describing; • the types of waste collected • the frequency of collection
• if there will be pre or post collection sorting * In the case of an automated collection system, the waste scheme operator will only need to confirm the types of waste collected and if there will be pre or post collection sorting

Assumptions for WAS 1

Storage of recyclable household waste
A combination of internal storage capacity provided in an adequate internal space, with either:
• a Local Authority collection scheme, or

Local Authority collection scheme In addition to a Local Authority collection scheme (with a collection frequency of at least fortnightly), at least one of the following requirements must be met: • Recyclable household waste is sorted after collection and a single bin of at least 30 litres is provided in an adequate internal space. • Materials are sorted before collection and at least three separate bins are provided with a total capacity of 30 litres. Each bin must have a capacity of at least 7 litres and be located in an adequate internal space. • An automated waste collection system which collects at least three different types of recyclable waste. No Local Authority collection scheme but adequate external storage capacity For houses and flats there must be at least three identifiably different internal storage bins for recyclable waste located in an adequate internal space: • with a minimum total capacity of 30 litres • with a minimum individual capacity of at least 7 litres. AND For houses, an adequate external space must be provided for storing at least three external bins for recyclable waste: • with a minimum total capacity of 180 litres • with a minimum individual capacity of 40 litres.

Assume all 4 points collected

Evidence for WAS 2 (Construction Site Waste Management)

Credit not sought

A copy of the compliant SWMP containing the appropriate benchmarks, commitments and procedures for waste minimisation and diversion from landfill in line with the criteria and with Checklists Was 2a, Was 2b and Was 2c
OR
Confirmation from the developer that the SWMP includes/will include benchmarks, procedures and commitments for minimising and diverting waste from landfill in line with the criteria and with Checklists W

Assumptions for WAS 2

Not likely to be considered for single residence

Evidence for WAS 3 (Composting)

Individual compositing facility/facilities

Detailed documentary evidence stating:
- the location and size of internal and external storage
- that an information leaflet will be supplied
- distance of storage from dwelling

AND
Completed Checklist IDP

Assumptions for WAS 3

Assumed to be used

Evidence for POL 1 (Global Warming Potential of Insulants)

All insulants have a GWP of less than 5

Completed Checklist Pol 1 showing the proposed insulation materials (or none) for each element and whether they are foamed using blowing agents or are unfoamed (from table Cat 6.1)

See attached checklist

Assumptions for POL 1

Credits are awarded where all insulating materials in the elements of the dwelling listed below only use substances that have a GWP < 5 (in manufacture AND installation):
- Roofs: including loft access
- Walls: internal and external including lintels and all acoustic insulation
- Floors: including ground and upper floors
- Hot water cylinder: pipe insulation and other thermal stores
- Cold water storage tanks: where provided
- External doors

See enclosed data for how scores are calculated

Evidence for POL 2 (NOx Emissions)

NOx emissions less than or equal to 40mg/kWh

Detailed documentary evidence describing:
- The primary and any secondary heating systems and flue type
- Dry NOX levels and/or boiler class of the primary and any secondary heating systems

SAP worksheets to provide additional evidence

Assumptions for POL 2

gas combi being used - 26mg/kwh - Ideal technical support consulted 01482 498663 consulted- 33 on biggest boiler

Dry NOX Level (mg/kWh) Boiler Class (BS EN 297: 1994) Credits
= 100 4 1
= 70 5 2
= 40 - 3

Difficult to quantify in advance but require a good boiler,.

Evidence for HEA 1 (Daylighting)

Kitchen: Average daylight factor of at least 2%
Living room: Average daylight factor of at least 1.5%
Dining room: Average daylight factor of at least 1.5%
Home office: Average daylight factor of at least 1.5%
All rooms (kitchen, living, dining and where applicable the home office) have 80% of the working plane with direct light from the sky

Copy of calculations as detailed in the methodology to demonstrate:
• Average daylight factor using the formula described in the definitions section (method described in Littlefair (1998) as set out in BS 8206-2) or computer simulation or scale model measurements
• Position of the no-sky line and percentage of area of the working plane that receives direct light from the sky
Confirmation from the developer that the calculations accurately reflect the dwelling as designed.

Calculations to be carried out by CSH assessor based on available drawings

Assumptions for HEA 1

May not gain all points - but worth aiming for all

Evidence for HEA 2 (Sound Insulation)

Detached property

Detached - no evidence as default

Assumptions for HEA 2

House is detached

Evidence for HEA 3 (Private Space)

Individual private space provided.

Detailed documentary evidence confirming:
• The number of bedrooms served by the outdoor space
• That the outdoor space meets the minimum size requirements
AND
Completed Checklist IDP (attached)

Assumptions for HEA 3

House to have its own private space

Evidence for HEA 4 (Lifetime Homes)

Credits not sought

Confirmation (if claimed) from the developer that all 16 of the Lifetime Homes design criteria are met
OR
Where an exemption from Lifetime Homes criteria 2 and/or 3 is sought:
• Confirmation from the developer that all other design criteria are met
AND
Detailed documentary evidence demonstrating access routes subject to steeply sloping gradients at pre developmen

Assumptions for HEA 4

Not assessed

Although not mandatory this could be considered, if not alternative credits can be gained from Ecology.

Evidence for MAN 1 (Home User Guide)

All criteria inline with checklist MAN 1 Part 1 - Operational Issues will be met
All criteria inline with checklist MAN 1 Part 2 - Site and Surroundings will be met

Where a home user guide will be supplied covering operational issues only:
Confirmation in the form of a letter from the developer or in the specification that the guide will be:
• Supplied to all dwellings within the development
• Be developed to the required standards (as a minimum including a list of contents showing that the guide will cover all of the issues required in Checklist Man 1 Part 1

Where a home user guide covering operational issues and issues relating to the site and surroundings will be supplied:
As above and including information covered in Checklist Man 1 Part 2

Assumptions for MAN 1

Provision of a Home User Guide, compiled in accordance with Checklist Man 1, Part 1, together with confirmation that the guide is available in alternative formats. = 1

Where the guide includes additional information relating to the site and its surroundings and is compiled in accordance with Checklist Man 1, Part 2. = 2

Assume both points are being sought.

Evidence for MAN 2 (Considerate Constructors Scheme)

Credits not sought

For Considerate Constructors Scheme:
Specification clause or other confirmation of commitment from the contractor or developer to comply with the Considerate Constructors Scheme and achieve formal certification under the scheme with either a pass score or a score of 32 points and above
AND
Confirmation that registration with the Considerate Constructor Scheme has taken place no later than the commencement of the construction phase

Assumptions for MAN 2

Unlikely that credit is to be assessed

Where there is a commitment to meet best practice under a nationally or locally recognised certification scheme such as the Considerate Constructors Scheme

Will involve some linancial cost, ideally aim for significantly above best practice, assumed as best practice only

Evidence for MAN 3 (Construction Site Impacts)

Credit(s) not sought

Completed copy of Checklist Man 3 (signed and dated) detailing the procedures that will be employed to minimise construction site impacts

Assumptions for MAN 3

Unllikely to be assesed.

Where there are procedures that cover two or more of the following items:
-Monitor, report and set targets for CO2 production or energy use arising from site activities
-Monitor and report CO2 or energy use arising from commercial transport to and from site
-Monitor, report and set targets for water consumption from site activities
-Adopt best practice policies in respect of air (dust) pollution arising from site activities
-Adopt best practice policies in respect of water (ground and surface) pollution occurring on the site
-80% of site timber is reclaimed, re-used or responsibly sourced = 1

OR
Where there are procedures that cover four or more of the items listed above. = 2
Need to visit KPI website at www.kpizone.com. There are additional financial costs

Evidence for MAN 4 (Security)

Credit not sought or no secure by design undertaken

Detailed documentary evidence showing:
• That an ALO/CPDA has been consulted with to ensure that the requirements of Section 2 - Physical Security from 'Secured by Design - New Homes' are met
• A commitment to follow the advice provided by the ALO/CPDA

Assumptions for MAN 4

Not available at the moment

An Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA) from the local police force is consulted at the design stage and their recommendations are incorporated into the design of the dwelling.
AND
Section 2 - Physical Security from 'Secured by Design - New Homes' is complied with (Secured by Design certification is not required).

No additional financial cost

Evidence for ECO 1 (Ecological Value of Site)
Land of low ecological value, achieved through checklist ECO 1. Development site has been identified as low ecological value by a suitably qualified ecologist
Where using Checklist Eco 1, provision of: • Site visit report from the design team/assessor confirming details adequate to meet Checklist Eco 1 based on plans of the site and surrounding area prior to the commencement of construction works/site clearance Where a suitably qualified ecologist is appointed; A copy of a report or letter from the ecologist highlighting the information required as set out in the 'Code for Sustainable Homes Ecology Report Template' AND Detailed documentary evidence identifying the construction zone and how any areas of ecological value outside the construction zone will remain undisturbed in accordance with the ecologist's recommendations
Assumptions for ECO 1
Where the development site is confirmed as land of inherently low ecological value EITHER By meeting the criteria for low ecological value (using Checklist Eco 1 - Land of Low Ecological Value under Checklists and Tables below) OR By being confirmed by a suitably qualified ecologist OR Where an independent ecological report of the site, prepared by a suitably qualified ecologist, confirms that the construction zone is of low or insignificant ecological value AND Any land of ecological value outside the construction zone but within the development site will remain undisturbed by the construction works. Assuming site has no trees

Evidence for ECO 2 (Ecological Enhancement)
Key recommendations and 30% additional recommendations by a suitably qualified ecologist
A copy of the ecologist's report highlighting the information required as set out in 'Code for Sustainable Homes Ecology Report Template' AND Detailed documentary evidence stating: • How the key recommendations and 30% of additional recommendations will be incorporated into the design • The planting schedule of any species to be incorporated from suitably qualified ecologists recommendations
Assumptions for ECO 2
assumed as 30% enhancement If assessed - Where a suitably qualified ecologist has been appointed to recommend appropriate ecological features that will positively enhance the ecology of the site. AND Where the developer adopts all key recommendations and 30% of additional recommendations

Evidence for ECO 3 (Protection of Ecological Features)
Ecological features will be adequately protected and maintained
Detailed documentary evidence* confirming ecological features present and how they will be protected *Where compliance with the criteria is demonstrated by the relevant documents submitted to the Planning Authority which gained planning approval, these can be used as evidence OR Where ecological features are being removed and are of low ecological value; A copy of the ecologist's report highlighting the information required as set out in the Code for Sustainable Homes Ecology Report Template
Assumptions for ECO 3
Where all existing features of ecological value on the development site potentially affected by the works are maintained and adequately protected during site clearance, preparation and construction works

Evidence for ECO 4 (Change of Ecological Value of Site)
Minor enhancement: Greater than 3 and less than or equal to 9
Copy of the calculations completed by the assessor and supported by the following detailed documentary evidence: • Proposed site layout • The pre-development site survey, clearly indicating natural and built features on both the site and land surrounding the site before the proposed development • Landscape and plot categories (in accordance with the Assessment Methodology) with a list of site areas provided for both before and after development Really need to enhance the site if at all possible

Assumptions for ECO 4
The ecological value before and after development is measured, and the overall change in species per hectare is: • Minor negative change: between -9 and less than or equal to -3 = 1 • Neutral: greater than -3 and less than or equal to +3 = 2 • Minor enhancement: greater than 3 and less than or equal to 9 = 3 • Major enhancement: greater than +9 = 4 Difficult to quantify in advance of assessment but 2 points likely ideally need to aim for major enhancement

Evidence for ECO 5 (Building Footprint)
Credit not sought
Calculation of the building footprint ratio, stating the Net Internal Floor Area (NIFA) and the Net Internal Ground Floor Area (NIGFA)

Assumptions for ECO 5
For houses, where the net internal floor area: net internal ground floor area ratio is greater than or equal to 2.5:1 - Plans suggest not possible

Assessor Declaration

I Nigel Ingham, can confirm that I have compiled this report to the best of my ability, I have based all findings on the information that is referenced within this report, and that this report is appropriate for the registered site.

To the best of my knowledge all the information contained within this report is correct and accurate. I have within my possession all the reference material that relates to this report, which is available for inspection by the client, the clients representative or Stroma Certification for Quality Assurance monitoring.

Signed:

Nigel Ingham
Ashby Energy
05 February 2012

Information about 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 continuous improvement in sustainable home building. The Code is based on EcoHomes©.

It was launched in December 2006 with the publication of 'Code for Sustainable Homes: A stepchange in sustainable home building practice' (Communities and Local Government, 2006), and became operational in England from April 2007.

The Code for Sustainable Homes covers nine categories of sustainable design. Each category includes a number of environmental issues. Each issue is a source of impact on the environment which can be assessed against a performance target and awarded one or more credits. Performance targets are more demanding than the minimum standards 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 issues and categories are as follows:

- Energy & CO2 Emissions
  - Dwelling Emission Rate
  - Building Fabric
  - Internal Lighting
  - Drying Space
  - Energy Labelled White Goods
  - External Lighting
  - Low or Zero Carbon Technologies
  - Cycle Storage
  - Home Office
- Water
  - Internal Water Use
  - External Water Use
- Materials
  - Environmental Impact of Materials
  - Responsible Sourcing of Materials - Basic Building Elements
  - Responsible Sourcing of Materials - Finishing Elements
- Surface Water Run-off
  - Management of Surface Water Run-off from the Development
  - Flood Risk
- Waste
  - Storage of Non-Recyclable Waste and Recyclable Household Waste
  - Construction Site Waste Management
  - Composting
- Pollution
  - Global Warming Potential of Insulants
  - NOx Emissions

- Health & Wellbeing
  - Daylighting
  - Sound Insulation
  - Private Space
  - Lifetime Homes
- Management
  - Home User Guide
  - Considerate Constructors Scheme
  - Construction Site Impacts
  - Security
- Ecology
  - Ecological Value of Site
  - Ecological Enhancement
  - Protection of Ecological Features
  - Change in Ecological Value of Site
  - Building Footprint

The Code assigns one or more performance requirements (assessment criteria) to all of the above environmental issues. When each performance requirement is achieved a credit is awarded (with the exception of the four mandatory requirements which have no associated credits). The total number of credits available to a category is the sum of credits available for all the issues within it.

Mandatory minimum performance standards are set for some issues. For four of these, a single mandatory requirement is set which must be met, whatever Code level rating is sought. Credits are not awarded for these issues. Confirmation that the performance requirements are met for all four is a minimum entry requirement for achieving a level 1 rating. The four un-credited issues are:

- Environmental Impacts of Materials
- Management of Surface Water Run-off from Developments
- Storage of Non-Recyclable Waste and Recyclable Household Waste
- Construction Site Waste Management

If the mandatory minimum performance standard is met for the four un-credited issues, four further mandatory issues need to be considered. These are agreed to be such important issues that separate Government policies are being pursued to mitigate their effects. For two of these, credits are awarded for every level of achievement recognised within the Code, and minimum mandatory standards increase with increasing rating levels.

The two issues with increasing mandatory minimum standards are:

- Dwelling Emission Rate
- Indoor Water Use

For one issue a mandatory requirement at Level 5 or 6:

- Fabric Energy Efficiency

The final issue with a mandatory requirement for Level 6 of the Code is:

- Lifetime Homes

Further credits are available on a free-choice or tradable basis from other issues so that the developer may choose how to add performance credits (converted through weighting to percentage points) achieve the rating which they are aiming for.

The environmental impact categories within the Code are not of equal importance. Their relative value is conveyed by applying a consensus-based environmental weighting factor (see details below) to the sum of all the raw credit scores in a category, resulting in a score expressed as percentage points. The points for each category add up to 100.

The weighting factors used in the Code have been derived from extensive studies involving a wide range of stakeholders who were asked to rank (in order of importance) a range of environmental impacts. Stakeholders included international experts and industry representatives.

It is also important to note that achieving a high performance in one category of environmental impact can sometimes result in a lower level of performance for another. For instance, if biomass is used to meet heating demands, credits will be available for performance in respect of energy supplied from a renewable source, but credits cannot be awarded for low NOX emission. It is therefore impossible to achieve a total percentage points score of 100.

The Code uses a rating system of one to six stars. A star is awarded for each level achieved. Where an assessment has taken place by where no rating is achieved, the certificate states that zero stars have been awarded:

Code Levels	Total Points Score (Equal to or Greater Than)
Level 1 ★☆☆☆☆☆	36 Points
Level 2 ★★☆☆☆☆	48 Points
Level 3 ★★★☆☆☆	57 Points
Level 4 ★★★★☆☆	68 Points
Level 5 ★★★★★☆	84 Points
Level 6 ★★★★★★	90 Points

Formal assessment of dwellings using the Code for Sustainable Homes may only be carried out using Certified assessors, who are qualified 'competent persons' for the purpose of carrying out Code assessments.

Energy & CO2 Emissions
ENE 1: Dwelling Emission Rate **Available Credits:**10 **Aim:**To limit CO2 emissions arising from the operation of a dwelling and its services in line with current policy on the future direction of regulations.
ENE 2: Fabric Energy Efficiency **Available Credits:**9 **Aim:**To improve fabric energy efficiency performance thus future-proofing reductions in CO2 for the life of the dwelling.
ENE 3: Energy Display Device **Available Credits:**2 **Aim:**To promote the specification of equipment to display energy consumption data, thus empowering dwelling occupants to reduce energy use.
ENE 4: Drying Space **Available Credits:**1 **Aim:**To promote a reduced energy means of drying clothes.
ENE 5: Energy Labelled White Goods **Available Credits:**2 **Aim:**To promote the provision or purchase of energy efficient white goods, thus reducing the CO2 emissions from appliance use in the dwelling.
ENE 6: External Lighting **Available Credits:**2 **Aim:**To promote the provision of energy efficient external lighting, thus reducing CO2 emissions associated with the dwelling.
ENE 7: Low or Zero Carbon Technologies **Available Credits:**2 **Aim:**To limit CO2 emissions and running costs arising from the operation of a dwelling and its services by encouraging the specification of low and zero carbon energy sources to supply a significant proportion of energy demand.
ENE 8: Cycle Storage **Available Credits:**2 **Aim:**To promote the wider use of bicycles as transport by providing adequate and secure cycle storage facilities, thus reducing the need for short car journeys and the associated CO2 emissions.
ENE 9: Home Office **Available Credits:**1 **Aim:**To promote working from home by providing occupants with the necessary space and services thus reducing the need to commute.

Water
WAT 1: Indoor Water Use **Available Credits:**5 **Aim:**To reduce the consumption of potable water in the home from all sources, including borehole well water, through the use of water efficient fittings, appliances and water recycling systems.
WAT 2: External Water Use **Available Credits:**1 **Aim:**To promote the recycling of rainwater and reduce the amount of mains potable water used for external water uses.

Materials
MAT 1: Environmental Impact of Materials **Available Credits:**15 **Aim:**To specify materials with lower environmental impacts over their life-cycle.
MAT 2: Responsible Sourcing of Materials - Basic Building Elements **Available Credits:**6 **Aim:**To promote the specification of responsibly sourced materials for the basic building elements.
MAT 3: Responsible Sourcing of Materials - Finishing Elements **Available Credits:**3 **Aim:**To promote the specification of responsibly sourced materials for the finishing elements.

Surface Water Run-off
SUR 1: Management of Surface Water Run-off from developments **Available Credits:**2 **Aim:**To design surface water drainage for housing developments which avoid, reduce and delay the discharge of rainfall run-off to watercourses and public sewers using SuDS techniques. This will protect receiving waters from pollution and minimise the risk of flooding and other environmental damage in watercourses.
SUR 2: Flood Risk **Available Credits:**2 **Aim:**To promote 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.

Waste
WAS 1: Storage of non-recyclable waste and recyclable household waste **Available Credits:**4 **Aim:**To promote resource efficiency via the effective and appropriate management of construction site waste.
WAS 2: Construction Site Waste Management **Available Credits:**3 **Aim:**To promote resource efficiency via the effective and appropriate management of construction site waste.
WAS 3: Composting **Available Credits:**1 **Aim:**To promote the provision of compost facilities to reduce the amount of household waste send to landfill.

Pollution
POL 1: Global Warming Potential of Insulants **Available Credits:**1 **Aim:**To promote the reduction of emissions of gases with high GWP associated with the manufacture, installation, use and disposal of foamed thermal and acoustic insulating materials.
POL 2:NOx Emissions **Available Credits:**3 **Aim:**To promote the reduction of nitrogen oxide (NOX) emissions into the atmosphere.

Health & Wellbeing
HEA 1: Daylighting **Available Credits:**3 **Aim:**To promote good daylighting and thereby improve quality of life and reduce the need for energy to light the home.
HEA 2: Sound Insulation **Available Credits:**4 **Aim:**To promote the provision of improved sound insulation to reduce the likelihood of noise complaints from neighbours.
HEA 3: Private Space **Available Credits:**1 **Aim:**To improve quality of life by promoting the provision of an inclusive outdoor space which is at least partially private.
HEA 4: Lifetime Homes **Available Credits:**4 **Aim:**To encourage the construction of homes that are accessible and easily adaptable to meet the changing needs of current and future occupants.

Management
MAN 1: Home User Guide **Available Credits:**3 **Aim:**To promote the provision of guidance enabling occupants to understand and operate their home efficiently and make the best use of local facilities.
MAN 2: Considerate Constructors Scheme **Available Credits:**3 **Aim:**To promote the environmentally and socially considerate, and accountable management of construction sites.
MAN 3: Construction Site Impacts **Available Credits:**2 **Aim:**To promote construction sites managed in a manner that mitigates environmental impacts.
MAN 4: Security **Available Credits:**2 **Aim:**To promote the design of developments where people feel safe and secure- where crime and disorder, or the fear of crime, does not undermine quality of life or community cohesion.

Ecology
ECO 1: Ecological value of site **Available Credits:**1 **Aim:**To promote development on land that already has a limited value to wildlife, and discourage the development of ecologically valuable sites.
ECO 2: Ecological enhancement **Available Credits:**1 **Aim:**To enhance the ecological value of a site.
ECO 3: Protection of ecological features **Available Credits:**1 **Aim:**To promote the protection of existing ecological features from substantial damage during the clearing of the site and the completion of construction works.
ECO 4: Change in ecological value of site **Available Credits:**4 **Aim:**To minimise reductions and promote an improvement in ecological value.
ECO 5: Building footprint **Available Credits:**2 **Aim:**To promote the most efficient use of a building's footprint by ensuring that land and material use is optimised across the development.

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