Greenhill Construction

Code for Sustainable Homes

Pre-assessment Specification

Version 1, 10th December 2013

Herbert Road; Newport

Issue Status

Date	Issue	Reason
10/12/13	1	Issued to support Planning Application.

Contents

Introduction

This report details the strategy for the development to achieve Code Level 3+; i.e. A total score of 57% or more, including at least 1 credit for Ene 1. In order to achieve 1 credit for Ene 1 each dwelling must achieve an 8% improvement on the Target Emission Rate (TER).

As the code is based on singular plots it is highly probable on any development that different numbers of points will accrue depending on different forms of dwelling. This is particularly relevant within Ene 2 where the credits will now be awarded against the Fabric Energy Efficiency Standard. Other potential examples include:

- Detached dwellings achieve all 4 sound insulation credits by default
- Differing water specifications, e.g. flats for the disabled may require a different approach.
- Different types of tenure may or may not achieve Lifetime Home compliance
- Some house types may target additional credits such as daylight, home office, in order to supplement the overall score

The following broad dwelling types were identified by the design team as a basis for ensuring that all dwelling types would achieve the requisite code level:

- 3bed Greenhill End terrace / semi-detached houses (BASE SPECIFICATION)
- 3bed Greenhill Mid-terrace houses
- 3bed Seren houses
- 2bed Greenhill Mid-terrace houses
- 2bed Seren houses
- 1and 2 bed Greenhill flats
- 1 and 2 bed Seren flats
- 2bed Greenhill luxury flats

Throughout the next section of this report the base specification is assumed for all dwellings UNLESS alternatives are highlighted within the table.

This report will:

- Outline the credits targeted by the Design team
- Describe how the above credits will be scored

This report cannot take the place of the Code Technical Guidance in terms of fully describing the required measures for credit compliance. All members of the design team should at least read those sections of the guidance that are relevant to their roles.

This project will be registered under the November 2010 edition of the Code.

***IMPORTANT:* The rating given in this report is for guidance only. Predicted ratings are likely to differ from those obtained through a formal Code assessment.**

Code for Sustainable Homes Strategy

The following Table describes those credits that the Design Team feels are most likely to be achieved by the current designs.

SEE APPENDIX 1 for a summary by dwelling type

Credit Ref	Credit Title	Base Specification	Credit Estimate	Divergent Spec	Divergent Credit Estimate
Ene 1	Energy and CO_2 emissions	Each dwelling must achieve an 8% improvement upon 2010 Part L1a so that the requirements of TAN 22 will be met. Until full construction drawings are provided and Design Stage SAP calculations are signed off the minimum 1 credit is assumed.	1	Nil	
Ene 2	Fabric Energy Efficiency (FEE)	Preliminary SAP calculations have been done indicating that the houses achieve varying scores between 6 and 7.7. **See summary score sheet** for details Full Design Stage calculations will need to be undertaken to confirm scores	6.3	The flats are averaged in blocks and achieve between 4.5 and 6. **See Summary score sheet**	various
Ene 3	Energy Display Devices	2 credits are assumed for devices monitoring electricity and primary fuel. GMS signal strength must be checked for ability to support smart meters	2	Nil	

Ene 4	Drying space	Rotary dryers for houses are to be provided to the gardens. These will easily exceed the amount of line required. Lines to be set into concrete footings.	1	The apartments will use internal lines in bathrooms, which will be ventilated to the required standard.	1
Ene 5	Energy Labelled White Goods	Energy labelling information is assumed to all dwellings for 1 credit.	1	The Greenhill luxury flats will be provided with a full suite of white goods with the following energy ratings: Fridge/freezers …… A+ Washing machines/dishwashers……. A Tumble dryers/washer dryers ……B	2
Ene 6	External lighting	Both space AND security lighting will be specified and will be Code compliant.	2	Nil	
Ene 7	Renewable Technologies	Credits not targeted	0	Nil	
Ene 8	Cycle Storage	Greenhill houses will not target these credits	0	Cycle storage that meets the requirements for 1 credit is assumed for all flats Storage for 2 cycles is assumed for all Seren houses. These are to be stored within timber sheds supplied with SECURE entrance locks and secure fixings.	1 2
Ene 9	Home Office	Credit not targeted	0	Home offices will be provided to the 2bed mid-terrace Greenhill houses and the 2bed Greenhill luxury flats. Daylight calculations and furniture layouts will be required to confirm the criteria for the credit are met.	1

Wat 1	Indoor water use	The developer wishes generally to achieve 3 credits for this issue. **See Appendix 2** for a suggested specification to achieve this. NB if water using white goods (washing machine or dishwasher) are supplied to the Greenhill luxury flats then these must use no more water than the default values assumed within the calculation.	3	The standard Greenhill flats will target 4 credits **See summary score sheet**	4
Wat 2	External water use	All houses to have water butts. 2 bed houses 150 litres 3+ bed houses 200 litres Architect to add a note that corresponds to the "correctly specified" definition on page 107 of the code	1	It is assumed that each block of flats will utilise a shared water butt providing storage capacity of capacity of 1l/m^2 of land or a minimum of 200l.	1
Mat 1	Environmental impact of materials	Greenhill houses are to be traditional construction and are estimated to achieve 12 credits **See Appendix 3**	12	All Seren houses will be timber frame and are estimated to achieve 12 credits. The Greenhill luxury flats and all Seren flats will be timber frame and are estimated to achieve 13 credits. All standard Greenhill flats will be masonry and are estimated to achieve 8 credits. **See summary score sheet and Appendix 3**.	12 13 8
Mat 2	Responsible Sourcing – Basic Building elements	6 credits are being assumed for all dwelling types	6	Nil	

Mat 3	Responsible Sourcing – finishing elements	As above for 3 credits.	3	Nil	
Sur 1	Surface water run-off	Mandatory requirements must be met for the site as a whole. These requirements mean that the following conditions must be met: 1. No increase in the peak rate of surface water run-off 2. No increase in the volume of surface water run-off SUDs techniques will be implemented to mitigate these figures therefore 1 credit is assumed for pollution minimisation.	1	Nil	
Sur 2	Flood Risk	These credits are not targeted	0	Nil	
Was 1	Storage of non-recyclable and recyclable household waste	The mandatory requirements for waste storage volumes and accessibility to the disabled will be met. AND All dwellings are to have internal recycling bins within kitchen cupboards. These will be coupled with the compliant council run kerbside scheme	4	Nil	

Was 2	Construction site Waste Management	The developer will commit to the following: 1. Establishing a SWMP that contains A> target benchmarks for resource efficiency; B> Procedures and commitments to minimise non-hazardous waste at design stage and specify waste minimisation techniques relating to 3 waste groups; C> Procedures for minimising hazardous waste AND D> Monitoring, measuring and reporting of hazardous and non-hazardous waste production. 2. Establishing a SWMP that contains procedures and commitments to sort and divert waste from landfill and achieve at least a 85% reduction of waste sent to landfill The above will score 3 credits.	3	Nil	
Was 3	Composting	Home composting bins will be provided to all houses. Bins will be located in a dedicated accessible position and a kitchen waste caddy will be provided in a dedicated position within the kitchen. Tenants will be provided with information on how composting works.	1	The flats are to utilise Newport City Council's Kitchen Waste Scheme.	1
Pol 1	Insulant GWP	All insulants to have a GWP of less than 5	1	Nil	
Pol 2	NOx emissions	All boilers to achieve less than 40mg NOx/kWh. No secondary heating is to be provided	3	Nil	

Hea 1	Daylighting	2 credits are assumed at this stage. View of sky and average daylight factor calculations will need to be undertaken to confirm.	2	Different dwelling types achieve various scores. Calculations will need to be undertaken to confirm. **See summary score sheet**	various
Hea 2	Sound Insulation	All masonry houses are to be specified with Robust Detail E-WM-20 for separating walls. This scores 3 credits for this issue.	3	The masonry flats will use the same detail for separating walls and a 3-credit Robust Detail for the separating floors. Timber frame houses will use E-WT-2 for 1 credit. Timber frame flats will use E-FT-3 so score no credits	3 1 0
Hea 3	Private space	All houses will have their own private garden that exceeds the minimum space requirements and is accessible to the disabled.	1	Most flats have a communal garden space that is of an adequate size to meet the criteria. 3 of the blocks of Greenhill 2bed flats will have no private external space	1 0
Hea 4	Lifetime Homes	Credits not targeted for Greenhill dwellings	0	Seren dwellings only will be compliant with Lifetime Homes and achieve the 4 credits.	4
Man 1	Home user guide	Best practice user guide for all dwellings	3	Nil	

Man 2	Considerate Constructors Scheme	Greenhill will commit to 2 credits by registering the site with the CCS prior to the onset of construction activities and achieve a minimum score of 35 points - no individual score being below 7.	2	Nil	
Man 3	Construction Site Impacts	4 items will be targeted for 2 credits: • Monitor, report and set targets for CO2 production from commercial transport to and from the 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 pollution arising from site activities	2	Nil	
Man 4	Security	Secure by Design Certification is being sought for the development. Therefore the developer will liaise with an ALO and implement any recommendations they make.	2	Nil	

Eco 1	Ecological value	This credit is not targeted**.**	0	Nil	
Eco 2	Ecological Enhancement	The developer has retained an ecologist who will recommend appropriate ecological features for implementation.	1	Nil	
Eco 3	Protection of Ecological features	It is assumed that all features of ecological value will be protected as specified by the ecologist.	1	Nil	
Eco 4	Change in Ecological value	A score of 1 credit for a minor negative change in value will be targeted. A detailed planting plan will need to be developed in collaboration with the ecologist to ensure this is achieved	1	Nil	
Eco 5	Building footprint	Not achievable with this design	0	Nil	

Conclusions

The targeted credit score for the identified dwelling types is as follows:

Dwelling Type	% Score	Code Level
3bed Greenhill End terrace / semi-detached houses (BASE SPECIFICATION)	58.67%	3
3bed Greenhill Mid-terrace houses	58.31%	3
3bed Seren houses	62.66%	3
2bed Greenhill Mid-terrace houses	58.33%	3
2bed Seren houses	60.78%	3
1and 2 bed Greenhill flats	58.03%	3
1 and 2 bed Seren flats	58.61%	3
2bed Greenhill luxury flats	58.05%	3

A score of 57% or more is required for Code Level 3

All dwellings, as specified, would achieve Level 3 compliance.

Information about the Code for Sustainable Homes

Background

The Code for Sustainable Homes is an environmental assessment method for rating and certifying the performance of new homes. It is used in the design and construction of new homes with a view to encouraging continuous improvement in sustainable home building.

The implementation of the Code is managed by BRE Global under contract to the Department for Communities and Local Government. It was initially based upon the EcoHomes operating system and methodology.

Unlike EcoHomes the Code introduces mandatory criteria that must be met for any level of the Code. For example a level 3 dwelling must achieve a 25% improvement on Building Regulations for carbon emissions and ensure that internal water use achieves 105 litres/person/day or less.

Issues

The issues assessed by the Code are grouped into the nine category areas listed below:

- **Energy**: Operational energy and CO_2
- **Water**: Consumption issues.
- **Materials**: Environmental implications of materials selection, recyclable materials
- **Surface water run-off**: Management of flood risk
- **Waste**: Household and construction site waste management
- **Pollution:** Insulant properties and NOx emissions from heating sources
- **Health and Well-Being**: Internal and external issues relating to health and comfort
- **Management**: Construction site impacts and home security issues.
- **Ecology and Land Use**: Ecological value of the site, planting and landscaping

Scoring System

Credits are available for each issue meeting the specified levels of performance. Each of the scores in the nine category areas has a weighting factor applied before the final percentage score is calculated.

The Code Level is derived from the total percentage points according to the table below:

Total % Score	Code Level
36	Level 1 (*)
48	Level 2 (**)
57	Level 3 (***)
68	Level 4 (****)
84	Level 5 (*****)
90	Level 6 (******)

Each Code level is represented on the certificate by the number of stars from 1 to 6.

Disclaimer

Disclaimer

Eco-futures shall not be liable whether in Contract or in Tort or otherwise for any loss or damage sustained as a result of using or relying on the information contained in this report.

Appendix 1: Proposed Credit Strategy

GREENHILL_HERBERT RD_Code Points by Dwelling Type_v1

			Credits Available	2 bed Seren (Brecon, Presilli)	2 bed mid Greenhill (666)	3 bed end/semi Greenhill (799, 877, 910)	3 bed Seren (Tryfan)	3 bed mid Greenhill (799)	1 bed flats Greenhill	1 and 2 bed flats Seren	2 bed flats Greenhill luxury	2 bed flats Greenhill	2 bed elderly flats Seren
Energy and CO2 Emisisons	Ene 1	Energy and CO2 Emissions	10	1	1	1	1	1	1	1	1	1	1
	Ene 2	Fabric Energy Efficiency	9	6.1	7	6.3	7.7	6	4.5	5	4.5	4.5	6
	Ene 3	Energy Display Devices	2	2	2	2	2	2	2	2	2	2	2
	Ene 4	Drying Space	1	1	1	1	1	1	1	1	2	1	1
	Ene 5	Energy Labelled White Goods	2	1	1	1	1	1	1	1	2	1	1
	Ene 6	External Lighting	2	2	2	2	2	2	2	2	2	2	2
	Ene 7	Low and Zero Carbon Technologies	2	0	0	0	0	0	0	0	0	0	0
	Ene 8	Cycle Storage	2	2	0	0	2	0	1	1	1	1	0
	Ene 9	Home Office	1	0	1	0	0	0	0	0	1	0	0
		Credit Total	31	15.1	15	13.3	16.7	13	12.5	13	15.5	12.5	13
		Weighting	1.1741	1.1741	1.1741	1.1741	1.1741	1.1741	1.1741	1.1741	1.1741	1.1741	1.1741
		Category Percentage	36.40	17.73	17.61	15.62	19.61	15.26	14.68	15.26	18.20	14.68	15.26
Water	Wat 1	Indoor water Use	5	3	3	3	3	3	4	3	3	4	3
	Wat 2	External Water Use	1	1	1	1	1	1	1	1	1	1	1
		Credit Total	6	4	4	4	4	4	5	4	4	5	4
		Weighting	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
		Category Percentage	9.00	6.00	6.00	6.00	6.00	6.00	7.50	6.00	6.00	7.50	6.00
Materials	Mat 1	Environmental Impact of Materials	15	12	12	12	12	12	8	13	13	8	13
	Mat 2	Responsible Sourcing - Basic Building elements	6	6	6	6	6	6	6	6	6	6	6
	Mat 3	Responsible Sourcing - Finishing Elements	3	3	3	3	3	3	3	3	3	3	3
		Credit Total	24	21	21	21	21	21	17	22	22	17	22
		Weighting	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
		Category Percentage	7.20	6.30	6.30	6.30	6.30	6.30	5.10	6.60	6.60	5.10	6.60
Surface Water run-off	Sur 1	Management of surface Water Run-off	2	1	1	1	1	1	1	1	1	1	1
	Sur 2	Flood Risk	2	0	0	0	0	0	0	0	0	0	0
		Credit Total	4	1	1	1	1	1	1	1	1	1	1
		Weighting	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
		Category Percentage	2.20	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Waste	Was 1	Storage of non-recyclable waste and Recyclable	4	4	4	4	4	4	4	4	4	4	4
	Was 2	Construction Site Waste Management	3	3	3	3	3	3	3	3	3	3	3
	Was 3	Composting	1	1	1	1	1	1	1	1	1	1	1
		Credit Total	8	8	8	8	8	8	8	8	8	8	8
		Weighting	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
		Category Percentage	6.40	6.40	6.40	6.40	6.40	6.40	6.40	6.40	6.40	6.40	6.40
Pollution	Pol 1	GWP of Insulants	1	1	1	1	1	1	1	1	1	1	1
	Pol 2	Nox Emissions	3	3	3	3	3	3	3	3	3	3	3
		Credit Total	4	4	4	4	4	4	4	4	4	4	4
		Weighting	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		Category Percentage	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80
Health & Wellbeing	Hea 1	Daylighting	3	0	0	2	0	2	3	1	2	3	1
	Hea 2	Sound Insulation	4	1	3	3	1	3	3	0	0	3	0
	Hea 3	Private Space	1	1	1	1	1	1	1	1	1	0	1
	Hea 4	Lifetime Homes	4	4	0	0	4	0	0	4	0	0	4
		Credit Total	12	6	4	6	6	6	7	6	3	6	6
		Weighting	1.167	1.167	1.167	1.167	1.167	1.167	1.167	1.167	1.167	1.167	1.167
		Category Percentage	14.00	7.00	4.67	7.00	7.00	7.00	8.17	7.00	3.50	7.00	7.00
Management	Man 1	Home User Guide	3	3	3	3	3	3	3	3	3	3	3
	Man 2	Considerate Constructors Scheme	2	2	2	2	2	2	2	2	2	2	2
	Man 3	Construction Site Impacts	2	2	2	2	2	2	2	2	2	2	2
	Man 4	Security	2	2	2	2	2	2	2	2	2	2	2
		Credit Total	9	9	9	9	9	9	9	9	9	9	9
		Weighting	1.111	1.111	1.111	1.111	1.111	1.111	1.111	1.111	1.111	1.111	1.111
		Category Percentage	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Ecology	Eco 1	Ecological Value of Site	1	0	0	0	0	0	0	0	0	0	0
	Eco 2	Ecological Enhancement	1	1	1	1	1	1	1	1	1	1	1
	Eco 3	Protection of Ecological Features	1	1	1	1	1	1	1	1	1	1	1
	Eco 4	Change in Ecological Value of Site	4	1	1	1	1	1	1	1	1	1	1
	Eco 5	Building footprint	2	0	0	0	0	0	0	0	0	0	0
		Credit Total	9	3	3	3	3	3	3	3	3	3	3
		Weighting	1.333	1.333	1.333	1.333	1.333	1.333	1.333	1.333	1.333	1.333	1.333
		Category Percentage	12.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
		Total Score	100.00	60.78	58.33	58.67	62.66	58.31	59.19	58.61	58.05	58.03	58.61

Appendix 2: Suggested Internal Water Specifications

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Job no:	
Date:	
Assessor name:	
Registration no:	
Development name:	**3 or 4 Credit Specification**

WATER EFFICIENCY CALCULATOR FOR NEW DWELLINGS - (BASIC CALCULA

	House Type:	Type 1		Type 2		Type 3		Typ
	Description:	**3 Credits**		**4 Credits**				
Installation Type	**Unit of measure**	Capacity/ flow rate	Litres/ person/ day	Capacity/ flow rate	Litres/ person/ day	Capacity/ flow rate	Litres/ person/ day	Capacity/ flow rate
Is a dual or single flush WC specified?		**Select option:**		**Select option:**		**Select option:**		**Select**
WC	Full flush volume	6	8.76	4	5.84		0.00	
	Part flush volume	3	8.88	2.6	7.70		0.00	
Taps (excluding kitchen and external taps)	Flow rate (litres / minute)	4	7.90	4	7.90		0.00	
Are both a Bath & Shower Present?		**Bath & Shower**		**Bath & Shower**		**Select option:**		**Select**
Bath	Capacity to overflow	175	19.25	130	14.30		0.00	
Shower	Flow rate (litres / minute)	8	34.96	6	26.22		0.00	
Kitchen sink taps	Flow rate (litres / minute)	8	13.88	8	13.88		0.00	
Has a washing machine been specified?		**No**		**No**		**Select option:**		**Select**
Washing Machine	Litres / kg		17.16		17.16		0.00	
Has a dishwasher been specified?		**No**		**No**		**Select option:**		**Select**
Dishwasher	Litres / place setting		4.50		4.50		0.00	
Has a waste disposal unit been specified?		**No**	0.00	**No**	0.00	**Select option:**	0.00	**Select option:**
Water Softener	Litres / person / day		0.00		0.00		0.00	
	Calculated Use		115.3		97.5		0.0	
	Normalisation factor		0.91		0.91		0.91	
Code for Sustainable Homes	**Total Consumption**		**104.9**		**88.7**		**0.0**	
	Mandatory level		**Level 3/4**		**Level 3/4**		**-**	
Building Regulations 17.K	External use		5.0		5.0		5.0	
	Total Consumption		**109.9**		**93.7**		**0.0**	
	17.K Compliance?		**Yes**		**Yes**		**-**	

Appendix 3: Material Specifications

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November 2010 version - Revision 00

Job no:	GREENHILL STANDARD SPEC
Assessment date:	
Assessor name:	
Registration no:	
Development name:	TIMBER FRAME HOUSE
Issue Date:	

Are all specification types listed in the Green Guide? Yes

Please enter the specification details and the associated Green Guide Element number

Mat 1 Calculator Tool

Element	Type	Specification	% elemental area	Green Guide Rating	Points
Roof	Type 1	Timber trussed rafters and joists with insulation, roofing underlay, counterbattens, battens and concrete plain tiles 812410017	100.00%	A+	Element A+ to D Rated
	Type 2				
	Type 3				
	Type 4				
		Total:	100.00%		3.00
External Walls	Type 1	Brickwork, cement mortar, OSB/3 sheathing, timber frame with insulation, vapour control layer, plasterboard on battens, paint 806190047	50.00%	A+	Element A+ to D Rated
	Type 2	Cement render, aircrete blockwork outer leaf, cement mortar, insulation, timber frame, vapour control layer, plasterboard on battens, paint 806480134	50.00%	A+	
	Type 3				
	Type 4				
	Type 5				
	Type 6				
		Total:	100.00%		3.00
Internal Walls	Type 1	Timber stud, plasterboard, paint 809760003	60.00%	A+	Element A+ to D Rated
	Type 2	Robust Detail E-WT-2: Twin timber frames with 50mm min. between sheathing and 240mm min. between wall linings; to each side 9mm OSB sheathing, 60mm mineral wool (10-60kg/m3) between studs, 2 or more layers gypsum based board (22kg/m²) and emulsion paint 818570065	40.00%	A+	
	Type 3				
	Type 4				
		Total:	100.00%		3.00
Floor - Upper & Ground	Type 1	Powerfloated in situ concrete slab, over insulation on polyethylene dpm laid on blinded virgin aggregate sub-base 820100202		C	Element Not A+ to D Rated
	Type 2	Chipboard decking on timber I joists 807280024	50.00%	A+	
	Type 3	Screed on insulation laid on in situ concrete floor on polyethylene DPM on blinded virgin aggregate sub-base 820100009	50.00%	E	
	Type 4				
		Total:	100.00%		1.50
Windows	Type 1	PVC-U window with steel reinforcement, double glazed 813100009	100.00%	A	Element A+ to D Rated
	Type 2				
	Type 3				
	Type 4				
		Total:	100.00%		2.00

Total Number of Points	**12.50**
Total Credits Achieved	**12 of 15**

Minimum Entry Level Requirements have been met

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THE CODE FOR SUSTAINABLE HOMES
CERTIFICATION MARK

November 2010 version - Revision 00

Job no:	GREENHILL STANDARD SPEC
Assessment date:	
Assessor name:	
Registration no:	
Development name:	TMBER FRAME FLATS
Issue Date:	

Are all specification types listed in the Green Guide? Yes

Please enter the specification details and the associated Green Guide Element number

Mat 1 Calculator Tool

Element	Type	Specification	% elemental area	Green Guide Rating	Points
Roof	Type 1	Timber trussed rafters and joists with insulation, roofing underlay, counterbattens, battens and concrete plain tiles 812410017	100.00%	A+	Element A+ to D Rated
	Type 2				
	Type 3				
	Type 4				
		Total:	100.00%		3.00
External Walls	Type 1	Brickwork, cement mortar, OSB/3 sheathing, timber frame with insulation, vapour control layer, plasterboard on battens, paint 806190047	68.00%	A+	Element A+ to D Rated
	Type 2	Cement render, aircrete blockwork outer leaf, cement mortar, insulation, timber frame, vapour control layer, plasterboard on battens, paint 806480134	32.00%	A+	
	Type 3				
	Type 4				
	Type 5				
	Type 6				
		Total:	100.00%		3.00
Internal Walls	Type 1	Timber stud, plasterboard, paint 809760003	65.00%	A+	Element A+ to D Rated
	Type 2	Robust Detail E-WT-2: Twin timber frames with 50mm min. between sheathing and 240mm min. between wall linings; to each side 9mm OSB sheathing, 60mm mineral wool (10-60kg/m3) between studs, 2 or more layers gypsum based board (22kg/m²) and emulsion paint 818570065	35.00%	A+	
	Type 3				
	Type 4				
		Total:	100.00%		3.00
Floor - Upper & Ground	Type 1	Foundation 1	17.00%	B	Element A+ to D Rated
	Type 2	Foundation 2	17.00%	C	
	Type 3	Robust Detail E-FT-2: Floating Floor Treatment (FFT1 with chipboard and gypsum based board with 60mm (min.) mineral wool quilt between battens on 11mm (min.) OSB/3 decking) on solid timber joists (220mm min at 400mm centres (max) with Ceiling Treatment B. 829910207	66.00%	A+	
	Type 4				
		Total:	100.00%		2.24
Windows	Type 1	PVC-U window with steel reinforcement, double glazed 813100009	100.00%	A	Element A+ to D Rated
	Type 2				
	Type 3				
	Type 4				
		Total:	100.00%		2.00

Total Number of Points	**13.24**
Total Credits Achieved	**13 of 15**

Minimum Entry Level Requirements have been met

breglobal

THE CODE FOR SUSTAINABLE HOMES
CERTIFICATION MARK

November 2010 version - Revision 00

Job no:	GREENHILL STANDARD SPEC
Assessment date:	
Assessor name:	
Registration no:	
Development name:	MASONRY HOUSES
Issue Date:	

Are all specification types listed in the Green Guide? Yes

Please enter the specification details and the associated Green Guide Element number

Mat 1 Calculator Tool

Element	Type	Specification	% elemental area	Green Guide Rating	Points
Roof	Type 1	Timber trussed rafters and joists with insulation, roofing underlay, counterbattens, battens and concrete plain tiles 812410017	100.00%	A+	Element A+ to D Rated
	Type 2				
	Type 3				
	Type 4				
		Total:	100.00%		3.00
External Walls	Type 1	Brickwork outer leaf, insulation, aircrete blockwork inner leaf, cement mortar, plaster, paint 806170028	50.00%	A+	Element A+ to D Rated
	Type 2	Cement rendered aircrete blockwork cavity wall, insulation, cement mortar, plaster, paint 806180024	50.00%	A+	
	Type 3				
	Type 4				
	Type 5				
	Type 6				
		Total:	100.00%		3.00
Internal Walls	Type 1				Element A+ to D Rated
	Type 2	Timber stud, plasterboard, paint 809760003	72.00%	A+	
	Type 3	Robust Detail E-WM-3: Twin leaf 100mm solid dense aggregate blocks (1850-2300kg/m³) with 75mm min. cavity, type A wall ties, 8mm sand:cement render, gypsum based board (8 kg/m²) on dabs and paint to each side 818190017	28.00%	D	
	Type 4				
		Total:	100.00%		2.23
Floor - Upper & Ground	Type 1	Screed on insulation laid on grouted beam and medium dense solid block flooring (GGRef 820140031)	50.00%	B	Element A+ to D Rated
	Type 2	OSB-2 decking on timber I joists 807280044	50.00%	A+	
	Type 3				
	Type 4				
		Total:	100.00%		2.00
Windows	Type 1	PVC-U window with steel reinforcement, double glazed (GG Ref 813100009)	100.00%	A	Element A+ to D Rated
	Type 2				
	Type 3				
	Type 4				
		Total:	100.00%		2.00

Total Number of Points	**12.23**
Total Credits Achieved	**12 of 15**

Minimum Entry Level Requirements have been met

breglobal

THE CODE FOR SUSTAINABLE HOMES
CERTIFICATION MARK

November 2010 version - Revision 00

Job no:	GRENHILL STANDARD SPEC
Assessment date:	
Assessor name:	
Registration no:	
Development name:	MASONRY FLATS
Issue Date:	

Are all specification types listed in the Green Guide? Yes

Please enter the specification details and the associated Green Guide Element number

Mat 1 Calculator Tool

Element	Type	Specification	% elemental area	Green Guide Rating	Points
Roof	Type 1	Timber trussed rafters and joists with insulation, roofing underlay, counterbattens, battens and UK produced fibre cement slates GGRef 812410008	100.00%	A+	Element A+ to D Rated
	Type 2				
	Type 3				
	Type 4				
		Total:	100.00%		3.00
External Walls	Type 1	Brickwork outer leaf, insulation, aircrete blockwork inner leaf, cement mortar, plasterboard on battens, paint GGRef 806170615	88.00%	A+	Element A+ to D Rated
	Type 2	Cement rendered medium dense solid blockwork outer leaf, insulation, aircrete blockwork inner leaf, cement mortar, plasterboard on battens, paint GGRef 806180038	12.00%	A+	
	Type 3				
	Type 4				
	Type 5				
	Type 6				
		Total:	100.00%		3.00
Internal Walls	Type 1	Robust Detail E-WM-20: Twin leaf 100mm min. solid medium dense blocks (1350-1600kg/m³), with 100mm min. cavity including proprietary glass wool acoustic roll, type A wall ties, with gypsum-based board (9.8kg/m²) on dabs and paint to each side 1118190007	50.00%	C	Element A+ to D Rated
	Type 2	Timber stud, plasterboard, paint GGRef 809760003	50.00%	A+	
	Type 3				
	Type 4				
		Total:	100.00%		1.75
Floor - Upper & Ground	Type 1	Screed on insulation laid on grouted beam and medium dense solid block flooring GGRef 820140031	50.00%	B	Element A+ to D Rated
	Type 2	Robust Detail E-FC-11: 40mm min. proprietary screed (80kg/m²) onto Proprietary Resilient Layer D on precast prestressed hollow planks (150mm min, 300 kg/m² min) with Ceiling Treatment (CT0/1 metal ceiling system) 929550009	50.00%	C	
	Type 3				
	Type 4				
		Total:	100.00%		0.75
Windows	Type 1				Element Not A+ to D Rated
	Type 2				
	Type 3				
	Type 4				
		Total:	0.00%		0.00

Total Number of Points	**8.50**
Total Credits Achieved	**8 of 15**

Minimum Entry Level Requirements have been met