DISCONS.

Code for Sustainable Homes

Technical Guide November 2010 - Technical Guidance Note 2

Pre-Assessment Report

STROMA CERTIFIED CODE ASSESSOR

C:80 SOLUTIONS

Report Reference:	**714**
Site Registration:	
Site Name:	**17 Marigold Drive**
Assessor Number:	**STRO007283**
Company:	**C80 Solutions**
Assessor:	**Max Campbell**

THE CODE FOR SUSTAINABLE HOMES

CERTIFICATION MARK

Site Details	
Site Name:	17 Marigold Drive
Site Registration:	
Site Address:	17 Marigold Drive
	Burbage
City/Town:	Hinckley
County:	Leicestershire
Postcode:	LE10 2SJ
No. of Dwellings:	1
No. of Dwelling Types:	0
Planning Authority:	Hinckley & Bosworth Borough Council
Funding Body:	

Assessor Details	
Company:	C80 Solutions
Assessor Name:	Max Campbell
Cert Number:	STRO007283
Address:	Suite 2 Enterprise House
	249 Low Lane
	Horsforth
City/Town:	Leeds
County:	West Yorkshire
Postcode:	LS18 5NY
Tel:	01132588445
Email:	max@c80solutions.co.uk

Client Details	
Company:	PAtkinson Builders
Contact Name:	Paul Atkinson
Job Title:	
Email:	
Tel:	07734 714 109
Address:	45 Marsden Lane
City/Town:	Aylestone
County:	Leicester
Postcode:	LE2 8LS

Architect Details	
Company:	P Atkinson Builders
Contact Name:	Paul Atkinson
Job Title:	
Email:	
Tel:	07734 714 109
Address:	45 Marsden Lane
City/Town:	Aylestone
County:	Leicester
Postcode:	LE2 8LS

Developer Details	
Company:	P Atkinson Builders
Contact Name:	Paul Atkinson
Job Title:	
Email:	
Tel:	07734 714 109
Address:	45 Marsden Lane
City/Town:	Aylestone
County:	Leicester
Postcode:	LE2 8LS

Dwelling ID	Plot No.	Address	Social Unit
1	1		No

Development Summary & Ratings

Dwelling ID	Dwelling Type	Description	Level	Score
			3	58.29

Deviations from Standard

No deviations from standard

Score Sheet for 17 Marigold Drive

	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	3	0	2	1	2	2	0	2	1	3	1	10	0	0	0	2	4	3	1	1	3	2	4	1	0	3	1	2	2	1	1	1	2	0	58.29	3

Summary Score Sheet
Dwelling Type:

Dwelling ID: 1

	Score Assessment						
	Credit Score	Credits Available	Sub Total	Credits Available	%	Weighting Factor	Points Score
Energy & CO2 Emissions							
ENE 1 Dwelling Emission Rate	3	10	13	31	41.94	36.4	15.26
ENE 2 Fabric Energy Efficiency	0	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	10	24	41.67	7.2	3
MAT 2 Responsible Sourcing (Basic Building Elements)	0	6					
MAT 3 Responsible Sourcing (Finishing Elements)	0	3					
Surface Water Run-off							
SUR 1 Management of Surface Water Run-Off from Site	0	2	2	4	50	2.2	1.1
SUR 2 Flood Risk	2	2					
Waste							
WAS 1 Household Waste Storage and Recycling Facilities	4	4	8	8	100	6.4	6.4
WAS 2 Construction Site Waste Management	3	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	2	3	7	12	58.33	14	8.17
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	8	9	88.89	10	8.89
MAN 2 Considerate Constructors Scheme	1	2					
MAN 3 Construction Site Impacts	2	2					
MAN 4 Security	2	2					
Ecology							
ECO 1 Ecological Value of Site	1	1	5	9	55.56	12	6.67
ECO 2 Ecological Enhancement	1	1					
ECO 3 Protection of Ecological Features	1	1					
ECO 4 Change of Ecological Value of Site	2	4					
ECO 5 Building Footprint	0	2					
	Level Achieved: 3		**Total Points Scored: 58.29**				

Evidence for ENE 1 (Dwelling Emission Rate)
Improvement above Part L Building Regulations 2010. 3 credits allocated
STANDARD ASSESSMENT CRITERIA - MANDATORY ELEMENT Credits are awarded based on the percentage improvement in the Dwelling Emission Rate (DER), (estimated carbon dioxide emissions in kg per m2 per annum arising from energy use for heating, hot water and lighting for the actual dwelling), over the Target Emission Rate (TER) (the maximum emission rate permitted by Building Regulations), for the dwelling where DER and TER are as defined in the SAP 2009 calculations. DEVELOPMENT DESIGN REQUIREMENTS To achieve Code Level 3 compliance with Building Regulations Part L 2010 is required. This achieves 0 credits out of a possible 10. However credits can be awarded if there is a % improvement in the DER over the TER (e.g. 8% = 1 credit, 16% = 2 credits etc). For a breakdown of credits awarded based on % improvement achieved please see page 32 of the Code for Sustainable Homes Technical Guide November 2010. I have assumed for the purposes of this report that the dwelling will achieve 25% improvement over Part L 2010 which equates to 3 credits. However, this can be reviewed once the SAP calculations are prepared at design stage.
Assumptions for ENE 1

Evidence for ENE 2 (Fabric Energy Efficiency)
Semi Detached 0 credits allocated
STANDARD ASSESSMENT CRITERIA Credits in this category are awarded based on the Fabric Energy Efficiency (FEE) of the dwelling, taken from the SAP 2009 Calculations. FEE is the energy demand for space heating and cooling expressed in kWh/m2/year. Credits are awarded on a sliding scale ranging from 3 to 9 and the scale is based on increments of 0.1 credits, distributed equally. The number of credits awarded also depends on the dwelling type. Please see page 40 of the Code for Sustainable Homes Technical Guide November 2010 for a table of benchmarks and credits. DEVELOPMENT DESIGN REQUIREMENTS Since SAP calculations have not been completed at this stage in the project it is unknown what the FEE of the dwelling is. However, for the purposes of this report I have assumed that the dwelling will achieve a FEE of more than 60 kWh/m2/year which equates to 0 credits. This can be reviewed at the design stage when the full SAP calculations will be provided.
Assumptions for ENE 2

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.
STANDARD ASSESSMENT CRITERIA Credits are awarded for specifying equipment that displays energy consumption data of the dwelling, thus empowering dwelling occupants to reduce energy use. 1 credit is awarded where current electricity OR primary heating fuel consumption data are displayed to occupants by a correctly specified energy display device. 2 credits are awarded where current electricity AND primary heating fuel consumption data are displayed to occupants by a correctly specified energy display device. DEFAULT CASE - Where electricity is the primary heating fuel and current electricity data is displayed to occupants by a correctly specified energy display device - 2 credits can be achieved. CORRECTLY SPECIFIED ENERGY DISPLAY DEVICE This is a system comprising a self-charging sensor fixed to the incoming mains to measure and transmit energy consumption data to a visual display unit. As a minimum the unit must be capable of displaying the following information: - Local time - current mains energy consumption (kW and kWh) - current emissions (g/kg CO2) - Current tariff - Current cost (pounds and pence) (real time data for pre-payment customers and on a monthly basis for credit paying customers) - display accurate account balance information (in credit or debit) - visual presentation of data (non-numeric) to allow consumers to easily identify high and low level of usage. - historical consumption data so that consumers can compare their current and previous usage in a meaningful way. DEVELOPMENT DESIGN REQUIREMENTS The client has committed to providing a correctly specified energy display device to be installed in the property and that it will display current electricity consumption data and current primary heating fuel consumption data. In this regard 1 credit will be achieved in this category.
Assumptions for ENE 3

Evidence for ENE 4 (Drying Space)
Compliant external drying space
STANDARD ASSESSMENT CRITERIA A credit is awarded based on the provision for drying space for each dwelling type as follows: • Where space with posts and footings or fixings capable of holding 4m+ of drying line for 1-2 bed dwellings, and 6m+ of drying line for 3+ bed dwellings, is provided for drying clothes. The space (internal or external) should be secure. For internal drying spaces it should be a heated space with adequate, controlled ventilation, which complies with Part F of Building Regulations. Rooms that commonly meet these requirements are a bathroom or utility room. An example of an internal fixing would be a retractable clothes dryer installed over the bath in the bathroom. An example of an external fitting would be a rotary dryer located in an enclosed space only accessible to the residents of the dwelling(s). DEVELOPMENT DESIGN REQUIREMENTS The client has committed to providing a compliant external drying space in the garden, therefore 1 credit will be achieved.
Assumptions for ENE 4

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
STANDARD ASSESSMENT CRITERIA Credits are awarded where information is provided relating to the provision of energy efficient white goods, or where energy efficient white goods are supplied as follows: · 1 credit where fridges and freezers or fridge-freezers have an A+ rating under the EU Energy Efficiency Labelling Scheme · Plus a second credit where washing machines and dishwashers have an A rating under the EU Energy Efficiency Labelling Scheme AND EITHER · washer-dryers or tumble dryers have a B rating OR · where washer-dryers or tumble dryers are not provided, information on the EU Energy Efficiency Labelling Scheme is provided to each dwelling Please note: where washer dryers are provided it is not necessary to provide a washing machine to obtain the second credit. If no (or not all) white goods are provided but information on the EU Energy Efficiency Labelling Scheme of efficient white goods is provided to each dwelling then 1 credit is obtained. DEVELOPMENT DESIGN REQUIREMENTS The client has committed to providing A+ rated fridges and freezers or fridge freezers, an A rated washing machine and dishwasher and either B rated washer dryers and tumble dryers or an EU energy efficiency labelling scheme leaflet to be provided to the dwelling in the home user guide (see MAN1), therefore the full 2 credits will be achieved in this category.

Assumptions for ENE 5

Evidence for ENE 6 (External Lighting)
Compliant space lighting Compliant security lighting
STANDARD ASSESSMENT CRITERIA Where all external lighting within the development is provided by dedicated energy efficient fittings, as follows: · Space lighting: 1 credit where all external space lighting, including lighting in the common areas, is provided by dedicated energy efficient fittings (40 lumens per watt) with appropriate control systems (daylight sensor) · Security Lighting: 1 credit where all security light fittings are designed for energy efficiency and are adequately controlled such that: - All burglar security lights: a. Have a maximum wattage of 150W AND b. Have movement detecting control devices (PIR) AND c. Have daylight cut-off sensors - All other security lighting: a. Has dedicated energy efficient fittings AND b. Is fitted with daylight cut-off sensors OR timers · If no security lighting is installed then the security lighting credit can be awarded by default provided all the conditions for the space lighting credit have been met. · Dual lamp luminaires with both space and security lamps can be awarded both credits provided they meet the above criteria for energy efficiency FOR HOUSES Fittings serving the following areas should be included in the assessment of space and security lighting: · External door, front porch, steps/pathways, patio, garage, garden, carports and any other outbuildings. DEVELOPMENT DESIGN REQUIREMENTS As electrical layout drawings are not available I have assumed that all external space lighting shall be dedicated energy efficient fittings(luminous efficacy greater than 40 lumens per circuit Watt) and will have a daylight cut-off sensor AND that EITHER no security lighting will be installed OR that all security light fittings will be energy efficient (Max 150W for burglar lights) and will have adequate controls (PIR and daylight cut-off sensors). This will achieve 2 credits in this issue.

Assumptions for ENE 6

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%

STANDARD ASSESSMENT CRITERIA
Credits are awarded based on the percentage reduction in total carbon emissions that result from using Low or Zero Carbon (LZC) Energy Technologies for each dwelling using the ENE7 calculation method with credits awarded as detailed below:

Where energy is supplied from renewable or low carbon energy technologies:
- 1 credit is awarded where there is a 10% reduction in carbon emissions as a result
- 2 credits are awarded where there is a 15% reduction in carbon emissions as a result

Examples of LZC's are: Solar Hot Water, Photovoltaics, wind turbines, Biomass, CHP, air source heat pumps, ground source heat pumps.

DEVELOPMENT DESIGN REQUIREMENTS
SAP calculations are not available at this stage, therefore it is unknown whether LZC technology will be required to achieve the Target Emission Rate. For the purposes of this report I have assumed that 0 credits wil be achieved in this category. This may be subject to change once design stage SAP calculations and a detailed building specification are prepared.

Assumptions for ENE 7

Evidence for ENE 8 (Cycle Storage)

2 or 3 bedroom dwelling - Storage for 2 cycles per dwelling

STANDARD ASSESSMENT CRITERIA
Credits are awarded where individual or communal cycle storage is provided that is adequately sized, safe, secure, convenient and weather-proof for the following number of cycles:
1 credit where:
- Studios or 1 bedroom dwellings have storage for 1 cycle for every two dwellings
- 2 and 3 bedroom dwellings have storage for 1 cycle per dwelling
- 4 bedrooms and above have storage for 2 cycles per dwelling

2 credits where:
- Studios or 1 bedroom dwellings have storage for 1 cycle per dwelling
- 2 and 3 bedroom dwellings have storage for 2 cycles per dwelling
- 4 bedrooms and above have storage for 4 cycles per dwelling

For specific details on adequately sized, safe, secure, convenient and weather-proof storage please refer to page 74 of the code for sustainable homes technical guide November 2010. If all these details are not complied with then the credits cannot be awarded.

DEVELOPMENT DESIGN REQUIREMENTS
The client has committed to installing a cycle shed in the garden with storage for two cycles and that this will be compliant and secure, therefore 2 credits will be achieved.

Assumptions for ENE 8

Evidence for ENE 9 (Home Office)

Compliant home office

STANDARD ASSESSMENT CRITERIA
1 credit is awarded where sufficient space and services have been provided which allow the occupants to set up a home office in a suitable quiet room.

The space needs to satisfy the following requirements:

Sufficient services:
- Two double power sockets
- Two telephone points or one telephone point where broadband is available at the address.
- Window: the room must have a daylight factor of at least 1.5%
- Adequate ventilation: an openable window with an openable casement of a minimum of 0.5m2.

Sufficient space: at least 1.8m wall length
Suitable room:
- For dwellings with 3 or more bedrooms, a suitable room is a room other than the kitchen, living room, master bedroom or bathroom
- For dwellings with 1 or 2 bedrooms, a suitable room may be in the living room, one of the bedrooms or any other suitable area e.g. hall, dining area.

DEVELOPMENT DESIGN REQUIREMENTS
I have assumed that a home office will be provided with sufficient space and services in a suitable room. A suitable room would be bedroom 2 provided this achieves a daylight factor of 1.5%, has windows with an openable casement of at least 0.5m2, has a wall length of at least 1.8m and broadband is available for the postcode LE10 2SJ. Two double power sockets and one telephone point would need to be installed in this room to satisfy the services requirements for a code compliant home office.

Assumptions for ENE 9

Evidence for WAT 1 (Internal Water Use)

Internal water use less than or equal to 105 litres per person per day

STANDARD ASSESSMENT CRITERIA - MANDATORY ELEMENT
Up to 5 credits are available for performance which reduces the amount of potable water used in the dwelling. Credits are awarded based on a whole house assessment of the efficiency of internal water fittings against a benchmark figure. The assessment is measured in litres per person per day using the Water Efficiency Calculator for New Dwellings. For a breakdown of credits awarded based on water consumption (litres/person/day) please see page 82 of the Code for Sustainable Homes Technical guide November 2010.

DEVELOPMENT DESIGN REQUIREMENTS
To achieve Code Level 3 a mandatory maximum water consumption of 105 l/p/d is required from the Water Efficiency Calculator and this achieves 3 credits out of a possible 5. Additional credits can be awarded if the water consumption is lower (e.g. 90l/p/d = 4 credits and 80l/p/d = 5 credits). An example of a code level 3 compliant specification which achieved 105l/p/d would be as follows:

- Dual flush WC's: 4 litre full flush volume, 2.6 litre part flush volume
- Wash Hand Basin taps: 6 litres/min flow rate
- Kitchen sink taps: 6 litres/min flow rate
- Shower: 9 litres/min flow rate
- Bath capacity: 145 litres
- Washing machines and dishwashers: none specified (use default figures)
- No rainwater harvesting or greywater recycling

No water calculation is available at this stage however the client has committed to providing a maximum water usage of 105 litres/person/day. Therefore 3 credits will be achieved in this category

Assumptions for WAT 1

Evidence for WAT 2 (External Water Use)

Compliant individual rainwater collection system

STANDARD ASSESSMENT CRITERIA
1 credit is awarded where a correctly specified and sufficient sized system to collect rainwater for external/internal irrigation use has been provided to a dwelling with a garden, patio or communal garden space (examples of such systems include rainwater butts and central rainwater collection systems).

If no individual or communal garden spaces are specified or if only balconies are provided, the credit can be awarded by default.

The water butt needs to satisfy the following requirements:

- Sufficient size (for homes with private gardens, patios and terraces)
- terraces and patios - 100 litres minimum
- 1-2 bedroom home with private garden - 150 litres minimum
- 3+ bedroom home with private garden - 200 litres minimum
(The above volume requirements can be halved if there is no planting provided and the whole of the external space is covered by a hard surface).
- Correctly specified
- Provision of a childproof lid
- Provision of a tap for drawing off water
- Connection to the rainwater downpipes with an automatic overflow into the conventional rainwater drainage system
- A means of detaching the downpipe to enable cleaning of the interior
- Stable and adequately supported
- Container shall be durable and opaque to sunlight

DEVELOPMENT DESIGN REQUIREMENTS
The client has committed to providing a rainwater butt to be installed in the rear garden and that it will satisfy the above requirements in terms of size and correct specification. In order to satisfy the criteria in this category a water butt of minimum size 150l will need to be provided.

Assumptions for WAT 2

Evidence for MAT 1 (Environmental Impact of Materials)

Mandatory requirements met: At least 3 elements rated A+ to D, 10 credits scored

STANDARD ASSESSMENT CRITERIA - MANDATORY ELEMENT
There is a mandatory requirement with no available credits to achieve a Green Guide rating of between A+ and D for at least three of the following five elements of the building envelope:
- Roof
- External Walls
- Internal Walls (including separating walls)
- Upper and Ground Floors (including separating floors)
- Windows

Between 1 and 15 credits are available depending on the Green Guide ratings and relative distributions of different materials across the above five main elements of the building envelope. Credits are awarded on the basis of the rating as follows:
- A+ rating = 3 credits
- A rating = 2 credits
- B rating = 1 credit
- C rating = 0.5 credits
- D rating = 0.25 credits
- E rating = 0 credits

DEVELOPMENT DESIGN REQUIREMENTS
I have estimated the number of credits that will be achieved in this issue based on previous assessments. A MAT1 calculation will be carried out during the design stage assessment.

Assumptions for MAT 1

Evidence for MAT 2 (Responsible Sourcing (Basic Building Elements))

Zero credits or credits not sought

STANDARD ASSESSMENT CRITERIA
Credits are awarded where 80% of the assessed materials in the following key building elements are responsibly sourced:
- Frame
- Ground floor
- Upper floors (including separating floors)
- Roof
- External walls
- Internal walls (including separating walls)
- Foundation/substructure (excluding sub-base materials)
- Staircase

Responsible sourcing is demonstrated through third party certification schemes such as;
Timber - FSC, CSA, SFI, CoC, PEFC, MTCC, TFT (see page 120 of code technical guide for definitions)
Other materials - BES 6001:2008 (see <http://www.greenbooklive.com/page.jsp?id=169> for an up to date list of certified products) and EMS (Environmental Management System)

Once a breakdown of volumes and/or percentages of materials for each element present is provided and the responsible sourcing certification is established, the code assessor performs a MAT2 calculation to establish the number of credits achieved.

DEVELOPMENT DESIGN REQUIREMENTS
It is advisable to not target this issue unless it is necessary to pick up extra credits. This is due to the amount of administration required in order to provide evidence for compliance. Also the weighting of the Materials category is the lowest at 0.3 points per credit.

Assumptions for MAT 2

Evidence for MAT 3 (Responsible Sourcing (Finishing Elements))

Zero credits or credits not sought

STANDARD ASSESSMENT CRITERIA
Credits are awarded where 80% of the assessed materials in the following finishing Elements are responsibly sourced:
- Stair
- Window
- External & internal door
- Skirting
- Panelling
- Furniture
- Fascias
- Any other significant use

Once a breakdown of volumes and/or percentages of materials for each element present is provided and the responsible sourcing certification of each material is established, the code assessor performs a MAT3 calculation to establish the number of credits achieved.

DEVELOPMENT DESIGN REQUIREMENTS
It is advisable to not target this issue unless it is necessary to pick up extra credits. This is due to the amount of administration required in order to provide evidence for compliance. Also the weighting of the Materials category is the lowest at 0.3 points per credit.

Assumptions for MAT 3

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.
Credits not sought, water quality criteria not met/sought.

STANDARD ASSESSMENT CRITERIA - MANDATORY ELEMENT (NO CREDITS)
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 year and 100 year return period events.
Where the pre-development peak rate of run-off for the site would result in a requirement for the post-development flow rate 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.

2. VOLUME OF RUN-OFF
If there is no increase in the man made impermeable area as a result of the new development, then the volume of run-off criteria does not apply.
If the developed site would otherwise discharge, over the development lifetime allowing for climate change, a greater volume of rainwater run-off than the pre-development site for the 100 year 6 hour event, then criterion A applies. If A cannot be satisfied then B applies:
A: Ensure that the post development volume of run-off, allowing for climate change over the development lifetime, is no greater than it would have been before the development. The additional predicted volume of run-off for the 100 year 6 hour event must be prevented from leaving the site by using infiltration or other SUDS techniques.
OR B: If A cannot be satisfied (full justification must be provided) then reduce the post development peak rate of run-off to the limiting discharge.

The limiting discharge is the pre-development flow rate equivalent to the 1 year peak flow rate, mean annual flood flow rate (Qbar) or 2 l/s/ha, whichever is the highest flow rate.

For the 1 year peak flow rate the 1 year return period event criterion in section 1 above, applies. For all other events up to the 100 year return period event, the peak rate of run-off for the developed site must not exceed the limiting discharge.

Where the limiting discharge flow rate would require a flow rate of 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.

3. DESIGNING FOR LOCAL DRAINAGE SYSTEM FAILURE
Demonstrate that the flooding of property would not occur in the event of local drainage system failure (caused by either extreme rainfall or a lack of maintenance).

WATER QUALITY CRITERIA (CREDITS AVAILABLE)
1. One credit can be awarded by ensuring there is no discharge from the developed site for rainfall depths up to 5mm.
2. One credit can be awarded by ensring 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.

DEVELOPMENT DESIGN REQUIREMENTS
The code requires a report from an appropriately qualified professional (engineer, hydrologist) who understands the site's particular surface water management needs and has knowledge and experience in using SUDS to influence the development's drainage design.
The report needs to contain the following information to demonstrate compliance with the peak rate of run-off and volume of run-off requirements:
- 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)
- Peak rates of run-off (l/s) calcs for the 1 year and 100 year events, pre and post development, including an allowance for climate change over the development lifetime.
- 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.
- Information to demonstrate that the hierarchical approach to reducing the additional volume of run-off was followed.
- Information on the calculation methods used, as well as summary results.
- Drawings showing the pre-development drainage for the site (natural or constructed)
- Drawings showing the proposed drainage solution, system failure flood flow routes, potential flood ponding levels and ground floor levels.
- confirmation that local drainage system failure would not cause an increase in the risk of flooding within dwellings either on or off site.
Where credits are sought:
- The report also must contain the design specifications, calculations and drawings to support the awarding of the credits.

A Flood Risk Assessment (in accordance with PPS25) confirming the risk of flooding from all sources must also be prepared. This may be contained within the above report.

Looking at the site on Google maps it appears that the impermeable area will increase post development therefore peak rate of run-off and volume of run-off calculations will need to be provided to show that peak rate and annual run off is no greater than pre development, I have assumed no credits will be sought in this category

Assumptions for SUR 1

Evidence for SUR 2 (Flood Risk)

Low flood risk - zone 1

STANDARD ASSESSMENT CRITERIA

Two credits are available for developments situated in Zone 1 - low annual probability of flooding and where the site specific flood risk assessment (FRA) indicates that there is a low risk of flooding from all sources.

OR

One credit is available for developments situated in Zones 2 and 3a - medium and high annual probability of flooding where the finished ground floor level of all habitable parts of dwellings and access routed to the ground level and the site, are placed at least 600mm above the design flood level of the flood zone.

DEVELOPMENT DESIGN REQUIREMENTS

From searching the Environment Agency's flood maps it appears that the site (LE10 2SJ) is located in a low flood risk zone, therefore 2 credits should be awarded in this issue. However a Flood Risk Assessment (prepared according to good practice guidance as outlined in Development and Flood Risk: A practice guide companion to PPS25) which shows that there is a low risk of flooding from all sources is required to prove compliance. This is because the Environment Agency's flood maps only cover flooding from rivers and the sea. Flooding can occur at any time and in any place from sources such as rising ground water levels, burst water mains, road drains, run-off from hillsides, sewer overflows etc.

Assumptions for SUR 2

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

STANDARD ASSESSMENT CRITERIA - MANDATORY ELEMENT

STORAGE OF HOUSEHOLD WASTE - MANDATORY (NO CREDITS)
An adequate external space should be allocated for waste storage and sized to accomodate containers according to the largest of the following two volumes:

- The minimum volume recommended by BS 5906: 100 litres for a single bed dwelling with a further 70 litres for each additional bedroom.

- The total volume of the external waste containers provided by the Local Authority.

Storage space must provide inclusive access and usability (checklist IDP). Containers must not be stacked.

STORAGE OF RECYCLABLE HOUSEHOLD WASTE (CREDITS AVAILABLE)
Where there is no (or insufficient) dedicated external storage capacity for recyclable waste and no Local Authority collection scheme 2 credits are available where:
• At least 3 internal storage bins are provided and located in an adequate internal space
• With a minimum total capacity of 60 litres

Where there is a Local Authority Collection Scheme (with a collection frequency of at least fortnightly), 4 credits are available where at least one of the following is met:
• where recyclable household waste is sorted AFTER collection and at least a single 30 litre bin is provided in an adequate internal space.
• where materials are sorted BEFORE collection and at least 3 separate bins are provided with 30 litres total capacity. Every 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 3 different type of recyclable waste.

Where there is no Local Authority collection scheme but adequate external storage capacity is provided, 4 credits are available providing that:
• For houses and flats, there is at least 3 identifiably different internal storage bins for recyclable waste, located in an adequate internal space:
- with a minimum total capacity of 30 litres
- where every bin has at least 7 litres capacity
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 no bin smaller than 40 litres

Internal recycling bins should be fitted inside a kitchen/utility cupboard close to the non-recyclable waste bin. Free standing recycling bins placed directly on the floor or in a cupboard do not comply.

DEVELOPMENT DESIGN REQUIREMENTS
Hinckley and Bosworth council run a recycled waste collection scheme and provide the following bins/containers:
- 240l wheeled bin
- 55l caddy

I have assumed the client will include in the design a refuse storage area thats large enough to accomodate the above bins/boxes. Therefore the madatory element of WAS1 will be satisfied. Also accessibility and usage needs to be in accordance with checklist IDP.

As the council operate a recycling collection scheme which is post collection sorting 4 credits can be achieved by providing a single bin with a minimum capacity total capacity of 30 litres in an adequate internal space. Please note these need to be securely fitted inside a kitchen cupboard to achieve the credits.

Assumptions for WAS 1

Evidence for WAS 2 (Construction Site Waste Management)

Compliant site waste management plant containing benchmarks, procedures and commitments for the minimizing and diverting 80% waste from landfill in line with the criteria and with Checklist WAS 2a, 2b & 2c

STANDARD ASSESSMENT CRITERIA

MINIMISING CONSTRUCTION WASTE
1 credit is awarded where there is a compliant SWMP that contains:

- Target benchmarks for resource efficiency, i.e. m3 of waste per 100m2 of tonnes of waste per 100m2 set in accordance with best practice.
- Procedures and commitments to minimize non-hazardous construction waste at design stage. Specify waste minimisation actions relating to at least 3 waste groups and support them by appropriate monitoring of waste.
- Procedures for minimising hazardous waste.
- Monitoring, measuring and reporting of hazardous and non-hazardous site waste production according to the defined waste groups (according to the waste streams generated by the scope of works)

DIVERTING WASTE FROM LANDFILL
Where there is a compliant SWMP including procedures and commitments to sort and divert waste from landfill, through either:

- Re-use on site (in situ or for new applications)
- Re-use on other sites
- Salvage/reclaim for re-use
- Return to the supplier via a take back scheme
- Recovery and recycling using an approved waste management contractor
- Compost

according to the defined waste groups (see page 164 of the Code Technical Guide Nov 2010)

AND One of the following has been achieved:

- 2 credits where at least 50% by weight or by volume of non-hazardous construction waste generated by the project has been diverted from landfill.

OR

- 3 credits where at least 85% by weight or by volume of non-hazardous construction waste generated by the project has been diverted from landfill.

DEVELOPMENT DESIGN REQUIREMENTS
The client has committed to preparing a compliant Site Waste Management Plan (SWMP) including procedures and commitments to sort and divert waste from landfill and at least 85% by weight or volume of non-hazardous construction waste generated by the project will be diverted from landfill.
SMARTWaste is a software tool for preparing, implementing and reviewing SWMP. SMARTWaste manages all aspects of creating SWMPs and measuring waste generated on projects. See www.smartwaste.co.uk

Assumptions for WAS 2

Evidence for WAS 3 (Composting)

Individual compositing facility/facilities
Local authority green waste collection scheme

STANDARD ASSESSMENT CRITERIA
1 credit is awarded where one of the following criteria is satisfied:
• Individual home composting facilities: Space for a kitchen waste container (7 litres min) in the home and for an exterior composter.
OR
• A local communal or community composting service, which the Local Authority runs or where there is a management plan in place. Space for a container in the home (7 litres min) and for an exterior composter.
OR
• A Local Authority green/kitchen waste collection system (this can include an automated waste collection system). Space for a container in the home (7 litres min) and external storage space, with a local/green kitchen waste collection scheme in operation.

External composting facilities and storage need to be located within a maximum distance of 30m from the entrance door of the dwelling or building (if block of flats).

All facilities must:
• be in a dedicated position
• meet the requirements of Checklist IDP
• have a supporting information leaflet provided to each dwelling

The leaflet must provide information on:
• how composting works and why it is important
• the materials that can be composted (e.g. raw vegetable peelings and fruit, shredded paper, teabags etc.)
AND
• Where home composting facilities are provided, troubleshooting information (e.g. what to do if the compost gets too dry or too wet)
AND
• for communal schemes, details of the operation and management plan for the scheme
• where a green / kitchen waste collection scheme is in operation, the information leaflet provided by the Local Authority is sufficient to meet the information leaflet criteria

DEVELOPMENT DESIGN REQUIREMENTS
The client has committed to providing a compliant individual composting bin in the garden for this dwelling.

Assumptions for WAS 3

Evidence for POL 1 (Global Warming Potential of Insulants)

All insulants have a GWP of less than 5

STANDARD ASSESSMENT CRITERIA
1 credit where all foamed thermal and acoustic insulating materials in the elements of the dwelling listed below use blowing agents that have a GWP (global warming potential) of less than 5 for their 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

Insulation materials that aren't manufactured or installed using blowing agents e.g. mineral wool do not need to be assessed in this issue. Examples of compliant blowing agents are: air, Carbon Dioxide, Isobutene, Pentane (iso-pentane, cyclopentane, n-pentane)

DEVELOPMENT DESIGN REQUIREMENTS
I have assumed that all insulation used in the elements above will have a GWP of less than 5. Most large insulation manufacturers/suppliers use blowing agents that have a GWP of less than 5 e.g. Kingspan, Celotex.

Assumptions for POL 1

Evidence for POL 2 (NOx Emissions)

NOx emissions less than or equal to 40mg/kWh

STANDARD ASSESSMENT CRITERIA
Credits are awarded on the basis of NOx emissions arising from the operation of space heating and hot water systems for each dwelling, as follows:

- 1 credit where the boiler has NOx emissions of less than or equal to 100 mg/kWh (this is equivalent to boiler class 4).
- 2 credits where the boiler has NOx emissions of less than or equal to 70 mg/kWh (this is equivalent to boiler class 5).
- 3 credits where the boiler has NOx emissions of less than or equal to 40 mg/kWh.

DEVELOPMENT DESIGN REQUIREMENTS
The client has committed to providing a boiler that will emit less than or equal to 40mg/kWh of dry NOx emissions at 0% oxygen. This equates to 3 credits in this category. Examples of boilers with less than 40 mg/kWh are a Valliant ecoTEC plus combi 824, ecoTEC Pro 28 and Baxi Platinum Combi 24 HE. Please note that these are just generic boiler examples and the actual boiler will need to be specified based on the specific heating requirement for the dwelling.

Assumptions for POL 2

Evidence for HEA 1 (Daylighting)

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

STANDARD ASSESSMENT CRITERIA
Credits are awarded for the dwelling meeting the criteria below:

- 1 credit where kitchens achieve a minimum average daylight factor of at least 2%.
- 1 credit where all living rooms, dining rooms and studies achieve a minimum average daylight factor of at least 1.5%
- 1 credit where 80% of the working plane in each kitchen, living room, dining room and study receives direct light from the sky

DEVELOPMENT DESIGN REQUIREMENTS
Since daylight factors are not currently available 2 credits have been assumed in this category. This is based on previous assesments and will be reviewed at the design stage assesment.

Assumptions for HEA 1

Evidence for HEA 2 (Sound Insulation)

Detached property

STANDARD ASSESSMENT CRITERIA
Credits are awarded for achieving higher standards of sound insulation than those given in Approved Document E of the Building Regulations and demonstrating it by either using pre-completion testing or Robust Details as follows:

- 1 credit where airbourne and impact sound insulation values are at least 3dB better than Building Regulations
- 3 credits where airbourne and impact sound insulation values are at least 5dB better than Building Regulations
- 4 credits where airbourne and impact sound insulation values are at least 8dB better than Building Regulations
- 4 credits by default for detached dwellings
- 3 credits by default where separating walls or floors only occur between non habitable rooms.

Where sound testing will be carried out this has to be done by organisations/individuals who have UKAS accreditation or are registered with the Association of Noise Consultants (ANC) Registration Scheme.

For a list of Robust Details and their corresponding code credits please see <http://www.robustdetails.com/index.php?id=4904>

DEVELOPMENT DESIGN REQUIREMENTS
The property is detached therefore 4 credits are achieved by default.

Assumptions for HEA 2

Evidence for HEA 3 (Private Space)

Individual private space provided

STANDARD ASSESSMENT CRITERIA
1 credit is achieved where outdoor space (private or semi-private) has been provided that is:
- of a minimum size that allows all occupants to sit outside
- provided with inclusive access and usability (Checklist IDP)
- accessible only to occupants of designated dwellings

Outdoor space:
- a private garden
- a communal garden or courtyard
- balconies
- roof terraces
- patios

Minimum space requirements:
- Private space: 1.5 m2/bedroom
- Shared space: minimum 1m2/bedroom

Accessible only to occupants of Designated dwellings:
- The space must be designed in a way that makes it clear that the space is only to be used by occupants of designated dwelling(s). This could be achieved by using the buildings themselves, fencing, planting or other barrier to seal off the space.

DEVELOPMENT DESIGN REQUIREMENTS
The proposed drawings show that a private outdoor space will be provided that is at least 1.5m2 per bedroom. In order to obtain the credit in this category the space needs to satisfy the criteria on checklist IDP and be accessible only to the occupants of the dwelling.

Assumptions for HEA 3

Evidence for HEA 4 (Lifetime Homes)

Credits not sought

STANDARD ASSESSMENT CRITERIA
- 4 credits are awarded where all 16 principles of Lifetime Homes, applicable to the dwelling being assessed, have been complied with.

- 3 credits are awarded where an exemption from Lifetime Homes criteria 2 and/or 3 is applied to selected pathways subject to a steeply sloping plot gradient, but all other principles of Lifetime Homes, applicable to the dwelling being assessed, have been complied with.

Useful guidance can be found on www.lifetimehomes.org.uk/codeassessors

DEVELOPMENT DESIGN REQUIREMENTS
I have assumed the client will not want to seek credits in this category.

Assumptions for HEA 4

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
STANDARD ASSESSMENT CRITERIA Credits are awarded for the provision of a simple user guide which covers information relevant tenant/owner on the operation and environmental performance of their home, as follows: • 2 credits where the Home User Guide is compiled using Checklist Man 1 Part 1 (operational issues) together with information that the guide is available in alternative accessible formats. • 1 additional credit where the guide also covers information relating to the site and its surroundings, compiled using Checklist Man 1 Part 2. DEVELOPMENT DESIGN REQUIREMENTS The client has committed to providing a home user guide to the dwelling and that it will cover items in checklist MAN 1 part 1 and 2. See checklists for what items need to be covered to achieve the full 3 credits in this issue.
Assumptions for MAN 1

Evidence for MAN 2 (Considerate Constructors Scheme)
Considerate constructors scheme: Best practise only, a score of between 24 and 31.5 and at least a score of 3 in every section
STANDARD ASSESSMENT CRITERIA • 1 credit where there is a commitment to meet Best Practice (24 to 31.5 points with at least 3 points in every section) under a nationally or locally recognised certification scheme such as the Considerate Constructors Scheme. • 2 credits where there is a commitment to go significantly beyond Best Practice (32 to 40 points with at least 4 points in every section) under a nationally or locally recognised certification scheme such as the Considerate Constructors Scheme. DEVELOPMENT DESIGN REQUIREMENTS The client has committed to achieving best practice (24 to 31.5 points and at least a score of 3 in every section) under the Considerate Constructers Scheme.
Assumptions for MAN 2

Evidence for MAN 3 (Construction Site Impacts)
Monitor, report and set targets for CO2 production or energy use from site activities Monitor, report and set targets for water consumption from site activities Adopt best practise policies in respects to air (dust) pollution from site activities Adopt best practise policies in respects to water (ground and surface) pollution
STANDARD ASSESSMENT CRITERIA Credits are awarded where there is a commitment and strategy to operate site management procedures on site as follows: • 2 credits where there are site procedures that cover 2 or more of the following items: 1. Monitor, report and set targets for CO2 production or energy use arising from site activities (monthly electricity meter readings from site) 2. Monitor and report CO2 or energy use arising from commercial transport to and from site 3. Monitor, report and set targets for water consumption from site activities (monthly water meter readings from site) 4. Adopt best practice policies in respect of air (dust) pollution arising from site activities (e.g. dust sheets, regular damping down in dry weather, skip covers etc) 5. Adopt best practice policies in respect of water (ground and surface) pollution occurring on the site (e.g. PPG1, PPG5 and PPG6) 6. 80% of site timber (formwork, site hoardings etc) is reclaimed, re-used or responsibly sourced • 4 credits where there are site procedures that cover 4 or more of the items listed above. A MAN3 checklist will be provided at the next assessment stage which highlights the detailed requirements of this issue. DEVELOPMENT DESIGN REQUIREMENTS The client has committed to implementing a commitment and strategy to operate site management procedures that cover 4 of the construction site impacts.
Assumptions for MAN 3

Evidence for MAN 4 (Security)

Secure by design section 2 compliant

STANDARD ASSESSMENT CRITERIA
Credits are achieved by complying with Section 2 - Physical Security from 'Secured by Design New Homes', as follows:
· Where 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).

DEVELOPMENT DESIGN REQUIREMENTS
I have assumed that the client will seek the advice of an ALO or CPDA with regards to their project and encorporate their suggestions into the design thus achieving 2 credits.

Assumptions for MAN 4

Evidence for ECO 1 (Ecological Value of Site)

Construction zone site has been identified as low ecological value by a suitably qualified ecologist, all land outside the construction zone, but in the development site will remain undisturbed

STANDARD ASSESSMENT CRITERIA
1 Credit is awarded where the site is confirmed as land of inherently low ecological value either:
· By meeting the criteria for low ecological value using checklist Eco 1
· Or by being confirmed by a suitably qualified ecologist
· Or where an ecology report, prepared by a suitably qualified ecologist, confirms that the construction zone is of low or insignificant value
· AND any land of ecological value outside the construction zone (but within the development site) will remain undisturbed by the construction works.

For definitions, please see page 245 of the code for sustainable homes technical guide.

DEVELOPMENT DESIGN REQUIREMENTS
Looking at the development site on an aerial photograph it appears that there are some trees located on the site boundary. It would therefore not be possible to confirm the site is of low ecological value using checklist ECO1. In order potentially obtain the credit in this issue an ecologist would need to be instructed to carry out a code for sustainable homes ecology report. I would advise to carry out this report and for the purposes of this pre-assessment report I have assumed that 1 credit will be achieved in this issue.

Assumptions for ECO 1

Evidence for ECO 2 (Ecological Enhancement)

Key recommendations and 30% additional recommendations by a suitably qualified ecologist

STANDARD ASSESSMENT CRITERIA
1 credit 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. Examples of measures that may be recommended are:
· The planting of native species.
· The adoption of horticultural good practice.
· The installation of bird, bat and/or insect boxes.
· Development of a full Biodiversity Management Plan.

DEVELOPMENT DESIGN REQUIREMENTS
I would advise and have assumed that a suitably qualified ecologist will be appointed to recommend appropriate features that will positively enhance the ecology of the site and that the developer will adopt all key recommendations and 30% of the additional recommendations. In this regard 1 credit will be achieved in this issue.

Assumptions for ECO 2

Evidence for ECO 3 (Protection of Ecological Features)
Land of low ecological value as identified under ECO 1
STANDARD ASSESSMENT CRITERIA 1 credit where all existing features of ecological value on the development site are maintained and adequately protected during site clearance, preparation and construction works. The credit can be awarded by default where the site has been classified as having low ecological value in ECO1 AND no features of ecological value have been identified. If an ecologist has confirmed a feature can be removed due to insignificant ecological value or where an aboriculturalist has confirmed a feature can be removed due to poor health/condition, the credit can be achieved provided all other features are adequately protected in accordance with the ecologist's recommendations. Ecological features include: Trees, hedges, ponds, streams, rivers, marshes, wetlands, meadows, species rich grassland, heathland and heather. DEVELOPMENT DESIGN REQUIREMENTS I have assumed that the credit in this issue will be achieved either by default because the land is of low ecological value or that any identified ecological features will be maintained and adequately protected during site clearance, preparation and construction. Therefore 1 credit will be achieved.
Assumptions for ECO 3

Evidence for ECO 4 (Change of Ecological Value of Site)
Neutral: Greater than -3 and less than or equal to +3
STANDARD ASSESSMENT CRITERIA Credits are awarded where the resulting change in ecological value is as follows: · 1 credit for minor negative change (between -9 and less than or equal to -3) · 2 credits for neutral (greater than -3 and less than or equal to +3) · 3 credits for minor enhancement (greater than 3 and less than or equal to 9) · 4 credits for major enhancement (greater than +9) It is advisable to instruct a suitably qualified ecologist who is experienced in preparing ecology reports in the code for sustainable homes ecology report template format. DEVELOPMENT DESIGN REQUIREMENTS I have assumed that 2 credits will be awarded in this issue. This is an estimate and will need to be confirmed with the ECO 4 calculator tool which is contained within the code for sustainable homes ecology report template.
Assumptions for ECO 4

Evidence for ECO 5 (Building Footprint)
Credit not sought
STANDARD ASSESSMENT CRITERIA *This issue is assessed on a site wide basis.* Credits are awarded where the ratio of combined net internal floor area to footprint area (as measured by the total net internal ground floor area of all dwellings on the site) meets the requirements defined below: FOR HOUSES · 1 credit where the ratio is 2.5:1 · 2 credits where the ratio is 3:1 FOR FLATS · 1 credit where the ratio is 3:1 · 2 credits where the ratio is 4:1 DEVELOPMENT DESIGN REQUIREMENTS From the plans I have assumed that a ratio of 2.5:1 will not be achieved therefore no credits will be achieved in this issue.
Assumptions for ECO 5

Assessor Declaration

I Max Campbell, 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:



Max Campbell
C80 Solutions
11 June 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.

Disclaimer

The contents of this publication reflect the assessment produced by the licensed Code assessor. Stroma Certification Ltd is not liable for any loss or damage sustained as a consequence of this report or any related information.

Copyright

The Code for Sustainable Homes, name, logo and associated documentation are owned by the Department for Communities and Local Government.

All software, calculation tools, templates and all related material provided by Stroma Certification remains the property of Stroma Certification Ltd.