Southstudio

Appendix 5B

Sustainability Plan - CfSH Statement
'The Cottage', Spaniards Road, London, NW3 7JH

July 2014

FILE NOTE

Client	Richard Brearley	Project No.	0065
Project Title	The Cottage	Author	JB
Subject	CfSH Statement	Date	23/07/14

1 Introduction

Kaizenge Design Limited (KDL) has been appointed by Lawrence Kershen to work in conjunction with Richard Brearley (Southstudio Architects) to provide planning stage energy and sustainability advisory services in relation to proposals for the design and construction of a new dwelling at the site of 'The Cottage' on Spaniards Road, in the London Borough of Camden (LBC).

The project consists of replacement of the existing dilapidated 2 storey 1940's house and garage with a new family residence comprising 2 storeys plus a basement together with a glazed link to a single storey garden assisted bed-sitting suite.

In accordance with planning requirements, a CfSH assessment will be undertaken for the development using the CfSH 2010 Technical Guide document (Department for Communities and Local Government, 2010).

This report presents the initial assessment, with all credits currently shown based on design team commitment and outline design proposals, along with evidence based on the existing site and its location.

This pre-assessment has been carried out during RIBA Stage 2.

Figure 1 – Diagram section of new dwelling (Ref: Southstudio)

1.1 Area Schedule

The proposed gross internal area (GIA) for the new building has been estimated based on Architects drawings:

Building	Area (m^2)
The Cottage	527

Table 1 – Area schedule

2 Policy Context

2.1 Camden Development Policies (DP) 2010 – 2025

2.1.1 *Development Policy DP22: Promoting sustainable design and construction*

The council requires development to incorporate sustainable design and construction measures and demonstrate how sustainable design principles will be incorporated. This is promoted and benchmarked using the Code for Sustainable Homes (CfSH). In 2013, CfSH Level 4 will be required (as per the London Plan).

2.2 Camden Planning Guidance (CPG) 3: Sustainability

2.2.1 Code for Sustainable Homes (CfSH)

This section details the Councils requirements under CfSH. It reiterates the requirement to meet CfSH Level 4 and that schemes are strongly encouraged to meet the following:

- Minimum standard in energy category = 50% of un-weighted credits; and
- Minimum standard in water category = 50% of un-weighted credits.

3 Code for Sustainable Homes 2011

3.1 Overview

The Code for Sustainable Homes (CfSH) (Department for Communities and Local Government, 2010) is an environment assessment method for rating the performance of new homes. It is a national standard with a view to encouraging continuous improvement in sustainable home building. The CfSH assesses nine different categories and the assessment process results in a report with a certification rating from Level 1 – Level 6 (net zero CO_2 emissions).

3.2 Categories

The categories assessed in the CfSH are as follows:

- **Energy (Ene) –** Focused on reducing dwelling emission rate and the energy efficiency of the building. Particularly focused around reducing CO2 emissions.
- **Water (Wat) –** This is a measure of water economy and awareness.
- **Materials (Mat)** – Assesses the environmental impact and sourcing of the materials used within the project.
- **Surface Water Run-off (Sur)** – assessing the flood risk and surface water run-off from developments.
- **Waste (Was)** – An assessment of the collection of recyclable waste and the re-use of materials.
- **Pollution (Pol)** – An assessment of the measures taken to minimise pollutants (other than CO_2) that have a negative effect on the atmosphere, land or local environment.

- **Health & Wellbeing (Hea)** – An assessment of the risks posed to the occupant's health and comfort in the design of the building.
- **Management (Man)** – An assessment of commitment to manage environmental impact of the building through design, construction and operation.
- **Ecology (Eco)** – Assesses the positive or negative impact of the development on local ecology.

3.3 Stages of Assessment

3.3.1 *Design Stage Assessment*

This is the type of assessment considered by this report, after assessment an interim Code rating is awarded. This is usually applied at the Design & Procurement stages of a project and may be initiated very early on in the process, assisting the integration of CfSH requirements within the project.

3.3.2 *Post Construction Stage Assessment*

This assessment assesses each individual dwelling as built to determine the final score and Code level for the dwelling. The post construction assessment is carried out to confirm that the dwellings are either built to the design stage specifications or that changes from the specifications are documents and a new Code level calculated.

3.4 Scoring

Credits for each CfSH issue are scored and totaled and the results for each category are weighted to generate the building's final score.

Category	Weighting (%)
Energy	36.4
Water	9
Materials	7.2
Surface Water Run-off	2.2
Waste	6.4
Pollution	2.8
Health & Wellbeing	14
Management	10
Ecology	12

Table 2 - CfSH categories and weighting

When a CfSH certificate is issued the dwelling may fall under six ratings; Level 1, Level 2, Level 3, Level 4, Level 5 or Level 6 where each category has a minimum score. The rating system indicates the performance of the whole building.

Rating	Score (%)
Level 1 (★)	36
Level 2 (★★)	48
Level 3 (★★★)	57
Level 4 (★★★★)	68
Level 5 (★★★★★)	84
Level 6 (★★★★★★)	90

Table 3 - CfSH rating system

As each section has different numbers of credits available it is important to be aware of how each credit has an affect on the final score. This is useful information when considering 'value engineering' that might affect the final CfSH rating, as it is easier to identify the most cost-effective options. Although the score is made up of credits from all the sections and generally this can be in any combination, there are mandatory minimum credits that must be achieved for each level. These are shown in the CfSH Tracker in Appendix A.

4 Building Performance

4.1 Scoring Summary

Following a CfSH pre-assessment meeting and from information subsequently obtained from the project team relating to specific CfSH issues, the following scores are predicted[1]:

- **Targeted Score: 68.45% (Level 4)**
- **Possible Score: 80.20% (Level 4)**

The 'Targeted Score' is the score that, based on current design statements from the project team, is the likely minimum that the development will achieve. The 'Possible Score' refers to a maximum score that the development could achieve.

In this assessment credits have been assessed as follows:

- **Targeted –** Credits have been or will be included into designs or contractor requirement, or achieved by default owing to site specific such as being previously built upon, or having good public transport links;
- **Possible –** Credits that require additional verification, either because the level of detail is not available at this time, the costs are not known or other design team reasons; and
- **Unlikely –** Credits that cannot be achieved due to existing site conditions, or are not targeted due to cost, difficulty of incorporation or other design team reasons.

Figure 4 shows the current predicted scores and the CfSH soring threshold.

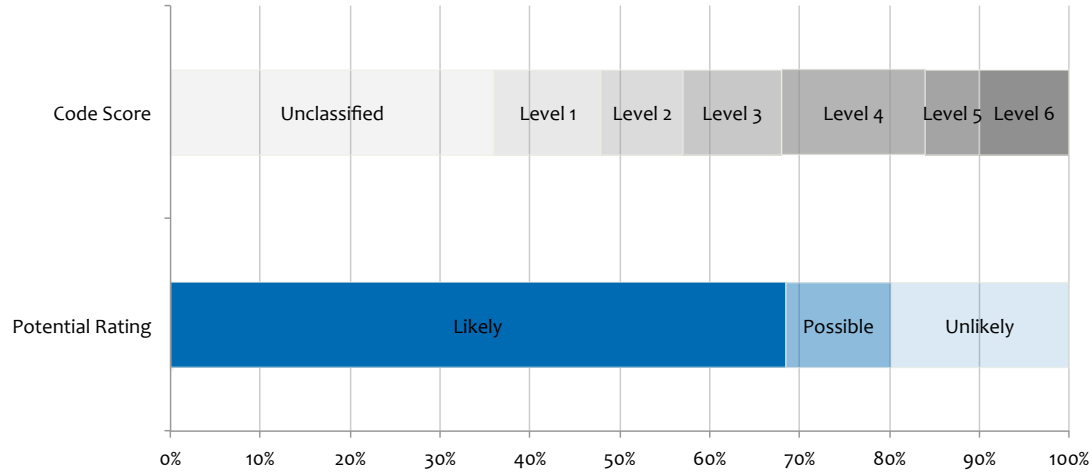

Figure 2 - Scoring summary at each threshold level

[1] These scores are based on the CfSH 2010 Technical Guide

Figure 3 presents the predicted scores for each CfSH category. The figures show that the development performs well across most categories particularly Waste, Pollution, Health & Wellbeing and Management. There is also scope for improvement to target additional credits under the categories Energy, Materials, Health & Wellbeing and Ecology. These will be considered and reviewed in further detail during design development.

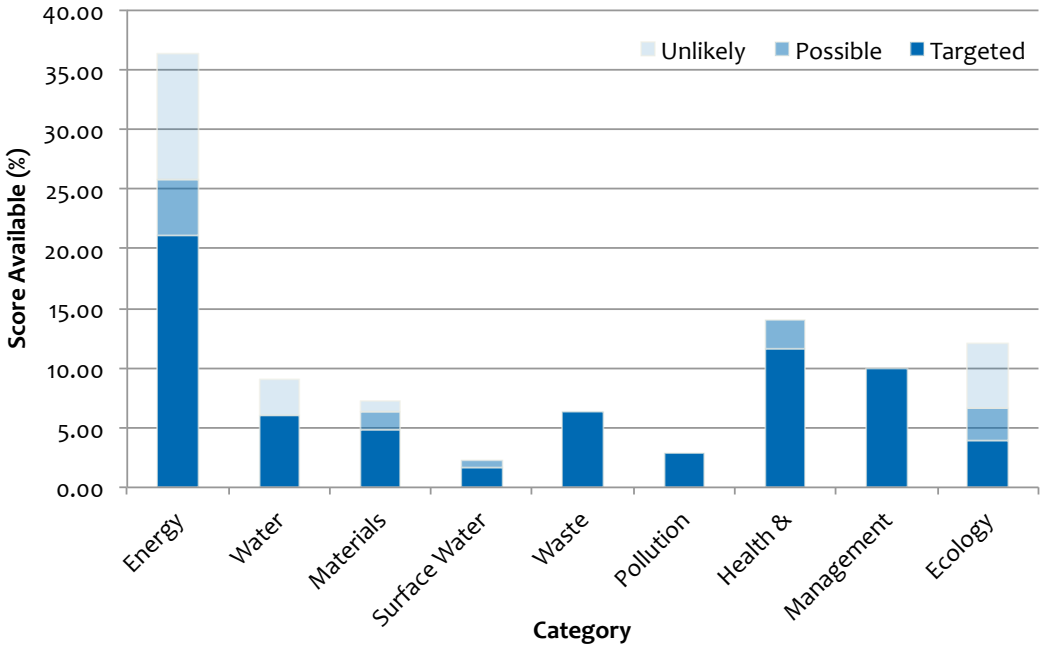

Figure 3 - CfSH scoring in each category

Details of the assessment criteria requirement for each individual CfSH criteria are provided in the comments section of the CfSH trackers provided in the appendices.

Based on the information currently provided, the design team has currently 'Targeted' a score of 68.45%. This is the minimum predicted score that is likely to be achieved and equates to a CfSH rating of Level 4, which is the score required for the development under the London Plan. The highest potential score for the development is 80.20%, which equates to a CfSH rating of Level 4. The minimum score for Level 4 is 68% so the development is in a good position to achieve this.

4.1.1 Scoring Calculation

The tables below illustrate how the 'Targeted' and 'Possible' CfSH scores have been calculated for the Cottage.

Category	Total Credits Available (a)	Credits Targeted (b)	Weighting Factor (c)	Percentage Score [(b/a)xc]
Energy	31	18	36.4	21.14
Water	6	4	9	6.00
Materials	24	16	7.2	4.80
Surface Water Run-off	4	3	2.2	1.65
Waste	8	8	6.4	6.40
Pollution	4	4	2.8	2.80
Health & Wellbeing	12	10	14	11.67
Management	9	9	10	10.00
Ecology	9	3	12	4.00
Total				**68.45**

Table 4 – CfSH targeted scoring calculation

Category	Total Credits Available (a)	Credits Possible (b)	Weighting Factor (c)	Percentage Score [(b/a)xc]
Energy	31	22	36.4	25.83
Water	6	4	9	6.00
Materials	24	21	7.2	6.30
Surface Water Run-off	4	4	2.2	2.20
Waste	8	8	6.4	6.40
Pollution	4	4	2.8	2.80
Health & Wellbeing	12	12	14	14.00
Management	9	9	10	10.00
Ecology	9	5	12	6.67
Total				**80.20**

Table 5 - CfSH possible scoring calculation

See CfSH tracker in Appendix A for a full list of CfSH issues and their designated weightings.

4.2 Category Scoring Details

4.2.1 Mandatory Credits

It should be noted that all rating levels have a number of mandatory requirements, which must be achieved irrespective of the overall score. This is particularly important when aiming for the higher levels. These mandatory requirements are shown in Table 6. The development is predicted to achieve all the mandatory criteria for Level 4.

CfSH Issue	CfSH Rating and Minimum Number of Credits					
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Ene 01: Dwelling Emission Rate	-	-	-	3	9	10
Ene 02: Fabric Energy Efficiency	-	-	-		7	7
Wat 01: Indoor Water Use	1	1	3	3	5	5
Mat 01: Environmental Impact of Materials	1	1	1	1	1	1

Sur 01: Management of Surface Water Run-off	1	1	1	1	1	1
Was 01: Storage of Waste	1	1	1	1	1	1
Hea 04: Lifetime Homes	-	-	-	-	-	4

Table 6 – Mandatory requirements for each CfSH level

4.2.2 *Energy*

Credits are achieved in this category by reducing the energy consumption of the development, and increasing energy efficiency. This will be done by:

- Achieving a 25% reduction in CO_2 emissions over Building Regulations Part L1A 2010;
- Installing energy display devices in each dwelling to make residents aware of their energy use; and
- Using Photovoltaics (PV) to reduce dwelling emission rate.

Credit		No. Credits Available	Percentage Score	No. Credits Targeted
Ene 1	Dwelling Emission Rate (10 credits available)	10	11.7	3
Ene 2	Fabric Energy Efficiency (9 credits)	9	10.53	5
Ene 3	Energy Display Device - Electricity	2	2.34	2
Ene 4	Drying Space	1	1.17	1
Ene 5	Energy Labelled White Goods – Washing Machine/Dishwasher	2	2.34	2
Ene 6	External Lighting - Space Lighting	2	2.34	2
Ene 7	Low/Zero Carbon Technologies	2	2.34	1
Ene 8	Cycle Storage (2 credits)	2	2.34	1
Ene 9	Home Office	1	1.17	1

Table 7 - Summary of scoring in the Energy category

4.2.3 *Water*

These credits are achieved by reducing the use of potable water within the development. The following measures will be implemented:

- Low flow fixtures and fittings to ensure a water consumption of 105 l/p/d. The following provides indicative flow rates to achieve this level:
  - Dual flush WC's 4/2.7 l;
  - Wash hand basins 3 l/min;
  - Low flow shower 6 l/min;
  - Bath capacity 150 l;
  - Kitchen tap 5 l/min; and
  - No water softening.
- Rainwater butt to collect water for irrigation purposes.

Credit		No. Credits Available	Percentage Score	No. Credits Targeted
Wat 1	Indoor Water Use	5	7.5	3
Wat 2	External Water Use	1	1.5	1

Table 8 - Summary of scoring in the Water category

4.2.4 *Materials*

Credits are awarded for the use of materials with a low environmental impact, and from sustainable sources. To achieve these credits materials will have green guide ratings of A/A+ rated, and be responsible sourced.

Credit		No. Credits Available	Percentage Score	No. Credits Targeted
Mat 1	Environmental Impact of Materials - minimum requirement	15	4.5	12
Mat 2	Responsible Sourcing of Materials - Basic Building Elements (up to 6 credits)	5	1.5	3
Mat 3	Responsible Sourcing of Materials - Finishing Elements (up to 3 credits)	3	0.9	1

Table 9 - Summary of scoring in the Materials category

4.2.5 *Surface Water Run-Off*

Credits are awarded for ensuring there is no increased in surface water run-off from the site, and for being in a low flood risk area.

A drainage consultant has yet to be appointed for the scheme, however, the site is in a low flood risk area. A structural engineer will confirm this in the next phase.

Credit		No. Credits Available	Percentage Score	No. Credits Targeted
Sur 1	Management of Surface Water Run-off - Minimum requirement	2	1.1	1
Sur 2	Flood Risk (up to 2 credits)	2	1.1	2

Table 10 - Summary of scoring in the Surface Water Run-off category

4.2.6 *Waste*

Credits under this category are awarded for the reduction in waste produced by the development, both in its operation and during the construction process. Measures that will be implemented include:

- Recycling facilities will be provided in conjunction with a local recycling scheme;
- A Site Waste Management Plan will be implemented during the construction phase and 85% of waste will be diverted from landfill by recycling or re-use; and
- Composting facilities will be provided.

Credit		No. Credits Available	Percentage Score	No. Credits Targeted
Was 1	Storage of non-recyclable waste and recyclable household waste - minimum standards	4	3.2	4
Was 2	Construction site management - Minimising waste	3	2.4	3
Was 3	Composting	1	0.8	1

Table 11 - Summary of scoring in the Waste category

4.2.7 *Pollution*

These credits are awarded for minimising pollution from the development. These will be achieved by specifying insulants with a low global warming potential, and the boiler specified will have low NO_x emissions.

Credit		No. Credits Available	Percentage Score	No. Credits Targeted
Pol 1	Global Warming Potential (GWP) of insulants	1	0.7	1
Pol 2	NO_x emissions (up to 3 credits)	3	2.1	3

Table 12 - Summary of scoring in the Pollution category

4.2.8 *Health & Wellbeing*

Daylighting calculations have yet to be undertaken, therefore, additional credits may be available under this category The credits in this category will be achieved by reducing the risks that may be posed to occupant health and comfort.

- Private outdoor space will be provided;
- The house designed to meet Lifetime Homes standards; and
- All credits under sound insulation will be achieved as the house is detached.

Credit		No. Credits Available	Percentage Score	No. Credits Targeted
Hea 1	Daylighting (up to 3 credits)	3	3.51	1
Hea 2	Sound Insulation (up to 4 credits)	4	4.68	4
Hea 3	Private Space	1	1.17	1
Hea 4	Lifetime Homes	4	4.68	4

Table 13 - Summary of scoring in the Health & Wellbeing category

4.2.9 *Management*

All credits will be targeted in this category via commitment from the Client to manage the environmental impact of the project, particularly during construction and operation. This includes the production of a Home User Guide for the residents, and working with contractors under the considerate constructors scheme among other requirements.

Credit		No. Credits Available	Percentage Score	No. Credits Targeted
Man 1	Home User Guide	3	3.33	3
Man 2	Considerate Constructors Scheme	2	2.22	2
Man 3	Construction Site Impacts	2	2.22	2
Man 4	Security	2	2.22	2

Table 14 - Summary of Management category scoring

4.2.10 *Ecology*

The credits within the Ecology category are awarded for protecting or enhancing the site ecology. An ecologist will be appointed for the scheme.

Credit		No. Credits Available	Percentage Score	No. Credits Targeted
Eco 1	Ecological Value of Site	1	1.33	0

Eco 2	Ecological Enhancement	1	1.33	1
Eco 3	Protection of ecological features	1	1.33	0
Eco 4	Change in ecological value of site (up to 4 credits)	4	5.33	2
Eco 5	Building Footprint	2	2.67	0

Table 15 - Summary of scoring in the Ecology category

5 Conclusions and Recommendations

Based on the information currently provided, the design team has currently targeted a sore of 68.45%. This is the minimum predicted score that the development is likely to achieve and equates to a CfSH rating of 'Level 4'.

The highest potential score for the development is 80.20%, which equates to a CfSH rating of Level 4. The minimum score for Level 4 is 68% so the development is in a good position to achieve this.

When assessing the credits to be improved it should be noted that some are worth considerably more than others in the final score, for example a single Materials credit is work 0.3% while a single energy credit is worth 1.17%. It is possible to arrange these in terms of percentage improvements for money spent, thus maximising return on investment. Appendix A of this report contains the CfSH tracker for the project and shows a summary of the scores for each CfSH issue.

The next stage will include a more detailed review of the designs and proposals, and the formal CfSH Design Stage Assessment will be undertaken. At this stage, all targeted credit criteria will need to be met and full evidence provided by the design team.

6 Bibliography

Department for Communities and Local Government. (2010). *Code for Sustainabile Homes Technical Manual.* UK: BRE Global.

Greater London Authority. (2011). *The London Plan.* London: Greater London Authority.

London Borough of Camden. (2010). *Camden Local Development Framework Camden Core Strategy 2010 - 2025 Adoption Version 2010.* London: London Borough of Camden.

Appendix A – CfSH Tracker

KAIZENGE
CONTINUAL DEVELOPMENT, ENGINEERED

Reference	Title	Credits	Credit Value %	Status A/T/P/U	Mandatory Levels 1	2	3	4	5	6	Credit Requirements	Owner	Comments/Actions
1. Energy & CO_2													
Ene 1	**Dwelling Emission Rate (10 credits)**	3	3.52	T				3	9	10	% Improvement of the Dwelling Emission Rate over Target Emission Rate for Carbon Dioxide - Level 4 (25% improvement over 2010) - Level 5 (100% improvement over 2010) - Level 6 (net zero CO2 emissions) > 8% = 1, >16% = 2, >25% = 3, >36% = 4, >47% = 5, >59% = 6, >72% = 7, >85 = 8, > 100% = 9, Zero net CO2 emission = 10 credits.	**MEP**	3 credits will be achievable in meeting the London Plan requirements.
		0	0.00	p									
		7	8.22	U									
Ene 2	**Fabric Energy Efficiency**	5	5.87	T					7	7	Credits awarded according to fabric energy efficiency. Varies according to dwelling type	**MEP/Arch**	A high level of fabric efficiency will be targeted. Achievement of these credits relies on detailed input at the next stage to confirm thermal bridges (y-values)
		2	2.35	P									
		2	2.35	U									
Ene 3	**Energy Display Devices**	1	1.17	T							Electricity **or** primary fuel consumption data displayed to occupants by energy display device for 1 credit. **Both** fuel types displayed for 2 credits.	**MEP/Client**	Achievement of this credit will rely on the provision of energy display devices.
		1	1.17	T									
Ene 4	**Drying Space**	1	1.17	T							Credits are awarded based on the provision for drying space for each dwelling type: - Where space with posts and footings or fi xings capable of holding 4m+ of drying line for **1–2 bed dwellings** bed dwellings, and - 6m+ of drying line for **3+ bed dwellings,** is provided for drying clothes. The space (internal or external) should be secure.	**MEP/Arch**	The architect has confirmed that outdoor drying space will be available.
Ene 5	**Energy Labelled White Goods**	1	1.17	T							Credits are awarded where information is provided relating to the provision of energy efficient white goods, or where energy efficient white goods are supplied 1 = Where the following appliances are provided and have an A+ rating under the EU Energy Efficiency Labelling Scheme • Fridges and freezers or fridge-freezers 1 = 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 where this is the case	**Client**	The architect has confirmed that white goods will be provided and this credit can be achieved.
		1	1.17	T							1 = Where the following appliances are provided and have an A rating under the EU Energy Efficiency Labelling Scheme: • Washing machines and dishwashers 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 Labelling Scheme is provided to each dwelling where this is the case		

Ene 6	**External Lighting**	1	1.17	T							Where all external lighting within the development is provided by dedicated energy efficient fittings 1 = Space Lighting Where all external space lighting, including lighting in the common areas, is provided by dedicated energy efficient fittings.	**Conisbee**	Both credits will be targeted.
		1	1.17	T							1 = Security Lighting Where all security light fittings are designed for energy efficiency and are adequately controlled such that: All burglar security lights have: • A maximum wattage of 150 W AND • Movement detecting control devices (PIR) AND • Daylight cut-off sensors All other security lighting: • Has dedicated energy efficient fittings AND • Is fitted with daylight cut-off sensors OR timers.		
Ene 7	**Low or Zero Carbon (LZC) Technologies**	1	1.17	T							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 calculation method detailed in Calculation Procedures OR 1 = Where energy is supplied from local renewable or low carbon energy sources funded under the Low Carbon Building Programme (or similar), or is designed and installed in a manner endorsed by a feasibility study prepared by an independent energy specialist AND There is a 10 per cent reduction in carbon emissions as a result of this method of supply. 2 = There is a 15 per cent reduction in carbon emissions as a result of this method of supply.	**MEP**	Currently a 10% reduction in CO_2 emissions is expect through the use of a PV array. Additional PV could be incorporated to achieve the extra credit. This will be reviewed at the next stage.
		1	1.17	P									
Ene 8	**Cycle Storage**	1	1.17	T							1 = Where either individual or communal cycle storage is provided that is adequate, safe, secure, convenient and weather-proof (as defined in Relevant Definitions below) for the following number of cycles: Studios or 1 bedroom dwellings – storage for 1 cycle for every two dwellings 2 and 3 bedroom dwellings –- storage for 1 cycle per dwelling 4 bedrooms and above –- storage for 2 cycles per dwelling OR 2 = Studios or 1 bedroom dwellings – storage for 1 cycle per dwelling 2 and 3 bedroom dwellings – storage for 2 cycles per dwelling 4 bedrooms and above – storage for 4 cycles per dwelling Requirements for secure cycle storage are met where compliance with clause 35 of SBD 2010 is achieved.	**Arch**	1 credit will be achievable.
		1	1.17	P									

KAIZENGE
CONTINUAL DEVELOPMENT, ENGINEERED

Ene 9	**Home Office**	1	1.17	T							Credits are awarded on the basis of the provision of space and services that enable a room to be used effectively as a home office. 1 = Where sufficient space and services (as defined below) have been provided which allow the occupants to set up a home office in a suitable quiet room. Space must have adequate ventilation and achieve average DF of 1.5%.	**Arch**	This credit will be targeted.
		31	36.4	**- Section Value %**									
2. Water													
Wat 1	**Indoor Water Use (5 credits)**	1	1.5	T	1	1	3	3	5	5	Credits awarded for reducing the amount of potable water used in the dwelling, calculated using the Code Water Calculator. Water consumption (litres/person/day) Credit (mandatory level 1 and 2) ≤120 l/p/day Credits (mandatory level 3 and 4) ≤ 105 l/p/day Credits (mandatory level 5 and 6) ≤ 80 l/p/day <120 = 1, <110 = 2, <105 = 3, <90 = 4, <80 = 5.	**MEP/Arch**	Low flow fitting and appliances will be specified to ensure the target water consumption of 105 l/p/d is achieved. This is mandatory for CfSH Level 4
		1	1.5	T									
		1	1.5	T									
		1	1.5	U									
		1	1.5	U									
Wat 2	**External Water Use**	1	1.5	T							Where a correctly specified rainwater collection system has been provided.	**Arch**	A water butt will be included for rainwater collection and irrigation purposes.
	Total credits for section -	6	9.0	**- Section Value %**									
3. Materials													
Mat 1 mms	**Environmental Impact of Materials (Mandatory Minimum Standard)**	0	0.00	T	-	-	-	-	-	-	At least three of the following five key elements achieve a relevant Green Guide rating from the 2008 version of The Green Guide of a+ to D: -Roof -External Walls -Internal Walls (including separating walls) -Upper and Ground Floors (including separate floors) -Windows	**Arch/contractor**	Mandatory credit
Mat 1	**Environmental Impact of Materials** **15 credits**	12	3.6	T							Where the Code Mat 1 Calculator Tool is used to access the number of credits awarded for the five key elements described above. A+ = 3 credits, B = 1 credit, E = 0.	**Arch/Contractor**	Currently 12 credits have been targeted. This corressponds to an average 'A' or 'A+' rating across all components.
		3	0.9	P									
		0	0	U									
Mat 2	**Responsible Sourcing of Materials - Basic Building Elements** **6 credits**	3	0.9	T							Where 80% of the assessed materials in the following building Elements are responsibly sourced: a. Frame b. Ground Floor c. Upper Floors (including separating floors) d. Roof e. External Walls f. Internal Walls (including separating walls) g. Foundation/Substructure (excluding sub-base materials) h. Staircase	**Arch/Contractor**	A procurement strategy should be developed specifying that only manufacturers with ISO/EMAS certification must be used, and that all timber must be from FSC or equivalent sources and not on the CITES lists for protected/endangered species. Final credit is difficult to estimate at this stage, requiring a higher percentage of material to be from more sustainable sources and accurate measures for each element.
		1	0.3	P									
		2	0.6	U									

KAIZENGE
CONTINUAL DEVELOPMENT, ENGINEERED

Mat 3	**Responsible Sourcing of Materials - Finishing Elements** **3 credits**	1	0.3	T							Where 80% of the assessed materials in the following building Elements are responsibly sourced: a. Stair b. Window c. Internal and External Door d. Skirting e. Panelling f. Furniture g. Facia h. Any other significant use Additionally, 100% of any timber in these elements must be legally sourced.	**Arch/Contractor**	A procurement strategy should be developed specifying that only manufacturers with ISO/EMAS certification must be used, and that all timber must be from FSC or equivalent sources and not on the CITES lists for protected/endangered species. Final credit is difficult to estimate at this stage, requiring a higher percentage of material to be from more sustainable sources and accurate measures for each element.
		1	0.3	P									
		1	0.3	U									
	Total credits for section -	24	7.2		**- Section Value %**								
4. Surface Water Run-off													
Sur 1 mms	**Management of Surface Water Run-Off From Developments (Mandatory Minimum Standards)**	0	0.00	T	-	-	-	-	-	-	To Ensure that the peak eaten of runoff into watercourses is no greater for the developed site that it was for the pre-developed site. An allowance for climate change should be made. Calculations for runoff should be appropriate for the site size. Additional predicted volume of rainwater discharge caused by the new development should be reduced using infiltration and/or used within the home for non-potable water uses. Where additional volume cannot be reduced, the peak discharge rate from the site should be reduced to either the pre-developed annual flow rate, 2l/s/ha or a minimum flow rate based on good practice guidelines.	**Drainage**	Mandatory credit
Sur 1	**Management of Surface Water Run-Off From Developments**	1	0.55	T							1 = awarded by ensuring there is no discharge from the developed site for rainfall depths up to 5 mm (see Calculation Procedures). 1 =awarded by ensuring that: • The run-off from all hard surfaces shall receive an appropriate level of treatment in accordance with The SuDS Manual to minimise the risk of pollution.	**Drainage**	A drainage consultant has not yet been appointed, however as the development is in a low flood risk zone it is assumed that all required run-off rates can be achieved. This will be confirmed at the next stage by a structural engineer.
		1	0.55	P									
Sur 2	**Flood Risk**	1	0.55	T							2 credits are available for developments situated in a area at low annual risk of flooding and where the site specific risk assessment indicates that there is a low risk of flooding from all sources. There is 1 credit available for developments situated in areas of medium and high annual probability of flooding where the finished ground floor level of all habitable parts of the dwellings and access routes to the ground level of the site are placed at least 600mm above the design flood level of the flood zone. The flood risk Assessment must demonstrate that the development is appropriately flood resilient and resistant with safe escape routes.	**Drainage**	The site is in the Environment Agency low flood risk zone.
		1	0.55	T									
	Total credits for section -	4	2.2		**- Section Value %**								

KAIZENGE
CONTINUAL DEVELOPMENT, ENGINEERED

5. Waste													
Was 1 mms	**Storage of non-recyclable waste and recyclable household waste (Mandatory Minimum Standards)**	0	0.00	T	-	-	-	-	-	-	An adequate external space should be allocated for waste storage and sized to accommodate containers according to the largest of the following two volumes: • The minimum volume recommended by British Standard 5906 (British Standards Institution, 2005) based on a maximum collection frequency of once per week. This volume is 100 litres for a single bedroom 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.	**Arch**	Mandatory credit
Was 1	**Storage of non-recyclable waste and recyclable household waste**	2	1.60	T							2 credits can be gained where dedicated internal storage for recyclable household waste is proved when there is no external storage, no local authority collection scheme and where there are 3 internal storage bins, located in a adequate space, no smaller than 15 litters each and with a minimum total capacity of 60 litres. 4 credits can be achieved when internal storage is combined with -A local authority scheme -No local Authority Scheme but adequate external storage. (see notes for further details)	**Arch**	Household waste storage will be provided alongisde a local collection scheme.
		2	1.60	T									
Was 2	**Construction Site Waste Management**	1	0.80	T							**Minimising waste:** Site Waste Management Plan (SWMP) that contains: a. Target benchmarks for resource efficiency, i.e. m3 of waste per 100 m2 or tonnes of waste per 100 m2 set in accordance with best practice b. 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. c. Procedures for minimising hazardous waste d. 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 the works)	**Contractor**	The Contractor will be asked to meet these requirements. Requirements will be included as part of the ER's
		1	0.80	T							**Diverting Waste from Landfill:** SWMP including procedures and commitments to sort and divert waste from landfill, through either; a. Re-use on site (in situ or for new applications) b. Re-use on other sites c. Salvage/reclaim for re-use d. Return to the supplier via a 'take-back' scheme e. Recovery and recycling using an approved waste management contractor f. Compost according to the defined waste groups (in line with the waste streams generated by the scope of the works). 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.		
		1	0.80	T							**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.		

KAIZENGE
CONTINUAL DEVELOPMENT, ENGINEERED

Was 3	**Composting**	1	0.80	T							• Individual home composting facilities. OR • A local communal or community composting service, which the Local Authority runs or where there is a management plan in place. OR • A Local Authority green/kitchen waste collection system (this can include an automated waste collection system). All facilities must also: • be in a dedicated position • provide inclusive access and usability (Checklist IDP) • have a supporting information leaflet provided to each dwelling.	**Arch**	Composting facilities will be provided.
	Total credits for section -	8	6.40		**- Section Value %**								
											Pollution		
Pol 1	**Global Warming Potential (GWP) of Insulants**	1	0.70	T							Credits are awarded where all insulated materials in the elements listed below only use substances that have a GWP <5 (manufacture and insulation) -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.	**MEP/Arch**	This credit will be targeted.
Pol 2	**NOx Emissions**	3	2.10	T							Credits are awarded on the basis of NOx emissions arising from the operation of space heating and hot water systems for each dwelling. - 1 Credit ≤ 100 mg/kWh - 2 Credits ≤ 70 mg/kWh - 3 Credits ≤ 40 mg/kWh	**MEP**	Gas boilers will be specified to supply heating and hot water, all 3 credits will be targeted.
	Total credits for section -	4	2.80		**- Section Value %**								
											7. Health & Wellbeing		
Hea 1	**Daylighting**	1	1.17	T							1 credit is achieved for each of the following;	**Arch/MEP**	Daylight calculations have yet to be undertaken however, it is anticipated that at least one credit will be achievable.
		1	1.17	P							-Kitchen must achieve a minimum average daylight factor of at least 2% -All living rooms, dining rooms and studies (including home offices) must have a minimum daylight factor of 1.5%		
		1	1.17	P							-80% of the working plane in each of the rooms mentioned above must receive direct light from the sky.		

KAIZENGE
CONTINUAL DEVELOPMENT, ENGINEERED

Hea 2	**Sound Insulation**	3	3.50	T							Credits are awarded where sound insulation standards are demonstrated to be higher than those given in Approved Document E of the Building Regulations -1 Credit for airborne sound insulation are at least 3dB higher and impact sound insulation values are at least 3dB lower. -3 Credits are awarded where airborne sound insulation values are at least 5dB higher and impact sound insulation values are at least 5dB lower. -4 Credits are awarded where airborne sound insulation values are at least 8dB higher and impact sound insulation values are at least 8dB lower than specified and a programme of pre-completion testing specified in the same document for every group or sub-group of dwellings demonstrating that the performance standards or standards are achieved or use of constructions for all relevant building elements that have been assessed and approved by Robust Details Limited (RDL), and found to achieve the performance standards stated above and to register all relevant dwellings with RDL. Detached dwellings (default 4 credits) Attached dwellings where separating walls or floors only occur between non-habitable rooms (default 3 credits)	**Contractor**	Credits awarded by default.
		1	1.17	T									
Hea 3	**Private Space**	1	1.17	T							Where outdoor space (private or semi-private) has been provided that is: • Of a minimum size that allows all occupants to use the space. • Provided with inclusive access and usability (Checklist IDP). • Accessible only to occupants of designated dwellings.	**Arch**	Credit targeted.
Hea 4	**Lifetime Homes**	4	4.67	T						4	Credits are awarded where all principles of Lifetime Homes, applicable to the dwelling being assessed, have been complied with.	**Arch**	The house will be built to lifetime homes standards.
Total credits for section -		12	14.0	**- Section Value %**									
8. Management													
Man 1	**Home User Guide**	3	3.33	T							2 Credits are awarded when a Home User Guide, compiled using Checklist Man 1 Part 1 together with information that the guide is available in alternative accessible formats. 1 Credit is awarded where the guide also covers information relating to the site and its surroundings, compiled using Checklist Man 1 Part 2.	**Contractor**	A Home User Guide will be provided.
Man 2	**Considerate Constructors Scheme**	1	1.11	T							1 Credit is awarded where there is a commitment to Best Practice under a nationally or locally recognised certification scheme such as the Considerate Constructors Scheme (score between 24 and 31.5) 2 Credits are awarded where there is a commitment to go significantly beyond Best Practice under a nationally or locally recognised certification scheme such as the Considerate Constructors Scheme (score >32)	**Contractor**	The Contractor will need to be selected with CCS scheme. Both credits will be targeted.
		1	1.11	T									

KAIZENGE
CONTINUAL DEVELOPMENT, ENGINEERED

Man 3	**Construction Site Impacts**	1	1.11	T							1 credit awarded when two or more of the following items are achieved, 2 credits available when 4 or more are achieved. -Monitor, report and set targets for CO_2 production or energy use arising from site activates -Monitor and report Co_2 or energy use arising from commercial transport to and from site -Monitor, report and set targets for water consumption from site activities -Adopt best practice policies in respect of air (dust) pollution arising from site activities -Adopt best practice policies in respect of water pollution occurring on the site -80% of timber is reclaimed, reused or responsibly sourced.	**Contractor**	These credits will be targeted.
		1	1.11	T									
Man 4	**Security**	1	1.11	T							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).	**Arch**	The architect has confirmed that these credits will be achievable.
		1	1.11	T									
	Total credits for section -	9	10.0		**- Section Value %**								
											9. Ecology		
Eco 1	**Ecological value of site**	1	1.33	U							Credits are awarded when the site is confirmed as of low ecological value either -By meeting the criteria for low ecological value **or** -By being confirmed by a Suitably Qualified Ecologist **or** -Where an independently ecological report of the site, prepared by a Suitably Qualified Ecologist, confirms that the construction zone is of low or insignificant ecological value **and** Any land of ecological value outside the construction zone but within the development site will remain undisturbed by the construction works.	**Ecologist**	The site is likely to have ecological value therefore this credit is unlikely to be achievable.
Eco 2	**Ecological Enhancement**	1	1.33	T							1 credit is available 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.	**Ecologist**	An ecologist will be appointed for the scheme to make recommendations for enhancements.
Eco 3	**Protection of Ecological Features**	1	1.33	U							1 Credit available where all existing features of ecological value on the development site potentially affected by the works, are maintained and adequately protected during site clearance, preparation and construction works. For default cases see credit sheet.	**Ecologist**	This credit is unlikely to be achievable.

KAIZENGE
CONTINUAL DEVELOPMENT, ENGINEERED

Eco 4	**Change in Ecological Value of Site**	2	2.67	T							The ecological value before and after development is measured, and the overall change in species per hectare is: -1 credit - between -9 and ≤-3 -2 credits - >-3 and ≤+3 -3 credits >3 and ≤+9 -4 credits - >9	**Ecologist**	
		2	2.67	P									
Eco 5	**Building Footprint**	1	1.33	U							Credits are awarded for houses, where the Net Internal Floor Area: Net Internal Ground Floor Area ratio is greater than or equal to 2.5:1 (1 credit) or 3:1 (2 credits) or For blocks of flats, where the Net Internal Floor Area: Net Internal Ground Floor Area is greater than or equal to 3:1 (1 credit) or 4:1 (2 credits) or For a combination of house and flats, a ratio or Total Net Internal Floor Area: Total Net Internal Ground Floor Area of all houses and flats is greater that the area weighted average of the two target ratios above.	**Arch**	Building footprint ratio credits unlikely to be achieved due to large floor ground floor plan.
		1	1.33	U									
Total credits for section -		9	12.0	**- Section Value %**									