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Land adjacent to Ferncroft Avenue, London

Code for Sustainable Homes Pre-assessment

Jul-12

Project	Land adjacent to Ferncroft Avenue
MW Reference	J1776
Location	Hampstead, London
Local Authority	Camden Borough Council
Client	BUJ Architects
Report Scope	Code for Sustainable Homes Pre-assessment
Quantity of Residential Units	1
Other	N/A

Issue	03 For Planning
Date	25/07/2012
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Signature	
Checked by	Adrian Lim
Signature	

Disclaimer

The performances of renewable systems, especially wind and solar, are difficult to predict with any certainty. This is due to the variability of environmental conditions from location to location and from year to year. As such all budget/cost and figures, which are based upon the best available information, are to be taken as an estimation only and should not be considered as a guarantee. This report relates to pre-planning stage therefore final specification must be provided by an M & E consultant after stage C.

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Executive Summary

Mendick Waring have been appointed to produce a Code for Sustainable Homes (CSH / Code) pre assessment as part of an exercise to identify potential credits in order to meet Code Level 4*.

The proposed development will comprise a single 2 bedroom detached house, located in Hampstead, London.

The strategy is based on discussions with parties involved within the scheme and seeks to maximise credits where available through the use of *'incorporated design'* where feasible. It should be noted that specific credits are targeted based on discussions within the design team, however, may require further works to quantify their award, should they be sought during the detailed design process.

The CSH pre-assessment should not be used as a design tool, however, provides outline guidance in meeting sustainability criteria as defined under the relevant scheme.

The Code for Sustainable Homes provides developers with a number of criteria considered as part of sustainable design and construction in new development. This predominantly focuses on providing percentage improvement baselines when compared to Building Regulations on Energy & Water consumption as follows:

Energy Performance

Code Level	Minimum Percentage Improvement in Dwelling Emission Rate over Target Emission Rate
Level 1 (★)	0% (Compliance with Part L 2010 only is required)
Level 2 (★★)	0% (Compliance with Part L 2010 only is required)
Level 3 (★★★)	0% (Compliance with Part L 2010 only is required)
Level 4 (★★★★)	25%
Level 5 (★★★★★)	100%
Level 6 (★★★★★★)	Net Zero CO_2 Emissions

Water Consumption

Code Level	Maximum Indoor Water Consumption in Litres per Person per Day
Level 1 (★)	120
Level 2 (★★)	120
Level 3 (★★★)	105
Level 4 (★★★★)	105
Level 5 (★★★★★)	80
Level 6 (★★★★★★)	80

With mandatory criteria providing a baseline, it is the choice of the developer and design team to target credits identified as feasible (within the site constraints) to meet the aspired rating as follows:

- Code Level 3: 57%
- Code Level 4: 68%
- Code Level 5: 84%
- Code Level 6: 90%

The table below details the contribution of credits achieved to meet Code Level 4*

Category	Targeted Credits	Total Available Credits	Percentage of Total Score
Energy	15.5	31	18.20
Water	4	6	6.00
Materials	16	24	4.80
Surface Water Run-off	2	4	1.10
Waste	8	8	6.40
Pollution	4	4	2.80
Health & Well-being	11	12	12.83
Management	9	9	10.00
Ecology	6	9	8.00
Total		107	70.13

Table 1 – Summary of credits scored

2.0 Introduction

Mendick Waring has been commissioned to conduct a Code for Sustainable Homes (CSH / Code) pre assessment as part of an exercise to identify potential credits to achieve Code Level 4*.

The proposed development will comprise a single 2 bedroom detached house.

Figure 1: Overview of proposed development

3.0 Code for Sustainable Homes Strategy

As detailed under Camden Borough Councils Core Strategy 13 '*Tackling climate change through promoting higher environmental standards*', the proposed dwelling must achieve Code for Sustainable Homes Level 4*.

The Code for Sustainable Homes is the national environmental standard to be used in the design and construction of new homes in England and Wales. Sustainable design principles cover performance in nine key areas:

- *Energy and CO_2*
- *Water*
- *Materials*
- *Surface Water Run-off*
- *Waste*
- *Pollution*
- *Health and Well-being*
- *Management*
- *Ecology*

The CSH utilises a rating system, ranging from Level 3* to Level 6*, as levels increase, they propose a number of increasing thresholds relating to a number of mandatory fields including:

- Energy performance,
- Water usage &
- Building adaptability (Lifetime Homes)

Dwelling is assessed and rated individually in two stages:

1. A design stage review (interim certificate issued if relevant criteria met)
2. A post-construction review (final certificate issued if all criteria met)

As part of the CSH, minimum **mandatory standards** are set, depending on the targeted rating for:

I. *Ene 1 - Carbon dioxide emissions,*

II. *Wat 1 - Indoor water use,*

III. *Mat 1 - Environmental impact of materials,*

IV. *Sur 1 - Management of surface water run-off*

V. *Was 1 - Storage of non-recyclable waste and recyclable household waste and*

Requirements must be met against these mandatory criteria, prior to the award of a CSH level.

In order to achieve Code Level 4*, dwelling's must achieve 68%.The following pages set out credits covered by the CSH and how the development could potentially perform against the assessment method.

It is recommended that any strategy targets a higher score than required to allow for flexibility within the design programme

Following a review of information received to-date and as detailed in the following pages, the development can achieve a rating of Code Level 4* and is detailed as follows:

Category	Targeted Credits	Total Available Credits	Percentage of Total Score
Energy	15.5	31	18.20
Water	4	6	6.00
Materials	16	24	4.80
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Waste	8	8	6.40
Pollution	4	4	2.80
Health & Well-being	11	12	12.83
Management	9	9	10.00
Ecology	6	9	8.00
Total	75.5	107	70.13

Table 2 – Summary of credits scored

3.1 Energy and Carbon Dioxide Emissions

Ene 1: Dwelling Emission Rate

To limit CO_2 emissions arising from the operation of a dwelling and its services in line with current policy on the future direction of regulations.

Credits are awarded based on the percentage improvement in the Dwelling Emission Rate (DER), compared to the Target Emission Rate (TER). Improvement in emissions is determined upon completion of SAP 2009 calculations.

Preliminary calculations undertaken indicate the award of 3.5 credits under Ene 1.

Targeted – 3.5/10 credits

Ene 2: Fabric Energy Efficiency (FEE)

To improve fabric energy efficiency performance thus future-proofing reductions in CO_2 for the life of the dwelling.

The FEE is a measure of space heating and space cooling demand, and targets are different according to dwelling type. Apartments and mid terrace houses have one set of targets, and semi-detached, end terrace and detached houses have a different set.

As per requirements set out in Ene 1*'Dwelling Emission Rate'*, actual values cannot be determined until SAP 2009 calculations are undertaken. If credits are to be sought a suitable thermal performance for the building fabric must be specified to achieve this value – this should be confirmed at the earliest opportunity**.**

Preliminary calculations undertaken indicate that no credits can be awarded.

Dwelling type	
End Terrace, Semi-Detached & Detached	≤ 60 kWh/m^2/year

Targeted – 0/9 credits

Ene 3: Energy Display Devices

To promote the specification of equipment to display energy consumption data, thus empowering dwelling occupants to reduce energy use.

Two credits will be awarded where electricity consumption AND primary heating fuel (proposed as gas) will be displayed to occupants as per technical detail under the Code for Sustainable Homes.

Targeted – 2/2 credits

Ene 4: Drying Space

To promote a reduced energy means of drying clothes.

Secure space with permanent 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 must be provided to gain this credit.

Suitable drying space will be provided for the development in the form of individual over bath tidy-drys or rotary dryers.

Targeted – 1/1 credit

Ene 5: Energy-labelled White Goods

To promote the provision or purchase of energy efficient white goods, thus reducing the CO_2 emissions from appliance use in the dwelling.

A single credit will be gained for providing information to all residents on the EU energy-efficiency single labelling scheme. An additional credit can be gained for the specification of the following:

- A+ Rated Fridge / Freezer
- A Rated Washing Machine
- A Rated Dishwasher

It is proposed that white goods will be provided, however, no washer dryer or tumble dryers will be provided. In the absence of this the EU Energy Efficiency leaflet will be provided as part of the Home User Guide (HUG) in order to fulfil criteria for the award of 2 credits.

Targeted – 2/2 credit

Ene 6: External Lighting

To encourage the provision of energy efficient external lighting, thus reducing CO_2 emissions associated with the dwelling.

Space lighting

All external space lighting, including lighting in common areas should be provided by dedicated energy-efficient fittings. Controls should be in accordance with the CSH requirements in communal areas, e.g. dusk-to-dawn control in entrance areas and push-button timers in internal corridors.

1/1 credits achieved for all dwellings

Security lighting

All security light fittings should be designed for energy efficiency and be adequately controlled in accordance with the CSH requirements, e.g. with movement detection and daylight cut-off. If no security lighting is installed, then the security lighting credit is awarded by default.

1/1 credits achieved for all dwellings

Ene 7: Low or Zero Carbon (LZC) Energy Technologies

To limit CO_2 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.

To gain credits for this category, detailed calculations should be carried out by an independent energy specialist, who must endorse the design and installation of a method of supply which provides a 10% reduction in carbon dioxide emissions to achieve one credit, or 15% reduction to achieve two credits.

Preliminary calculations suggest that the installation of the photovoltaic panels (as detailed under Mendick Waring's energy strategy Ref J1776) provide a 15% reduction in carbon emissions, as such two credits have been provisionally awarded.

Targeted – 2/2 credits

Ene 8: Cycle Storage

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 CO_2 emissions.

Cycle storage should be provided in accordance with the CSH requirements for the following number of cycles to achieve the maximum two credits available:

Dwelling Type	**Sizing Requirements**
1 bedroom	*1 cycle (2.0 x 0,75m)*
2 - 3 bedrooms	*2 cycles (2.0 x 1.5m)*
4+ bedrooms	*4 cycles (2.0 x 2.5m)*

Half of this provision is required to achieve one credit, a single credit is currently assumed for all dwellings.

It is proposed that dwelling is provided with bike stand within the car park. The cycle storage will be installed in line with the criteria under the CSH scheme. As a result, two credits can be provisionally awarded.

Targeted – 2/2 credits

Ene 9: Home Office

To promote working from home by providing occupants with the necessary space and services thus reducing the need to commute.

Sufficient space and services (e.g. a double telephone point and two double electric sockets, as defined in the relevant CLG Code for Sustainable Homes Technical Guide) should be provided which allow the occupants to set up a home office in a suitable quiet room. An additional criterion for this credit is that a daylight factor of 1.5% must be achieved.

It is assumed sufficient space will be provided for the provision of a home office; this space can be in a secondary bedroom. Alternatively for one and two-bedroom dwellings, it can be in the living room or master bedroom but it should not prevent the intended use of that room with all the furniture in place.

Daylight calculations must be undertaken early to confirm that the 1.5% daylight factor is met and that this credit can be achieved. The credit has been awarded on the premise that calculations will be undertaken and relevant % achieved, however, this must be completed during RIBA Stage E.

Targeted – 1/1 credits

3.2 Water

Wat 1: Internal Water Use

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.

For Level 4*, it is mandatory to achieve an internal potable water consumption target of ≤ 105 litres / person / day.

It is currently assumed that ≤105litres person / day will be targeted, the exact method of doing this is to be confirmed, although it is likely to include;

- 6 / 3 dual-flush WCs
- Taps on wash-hand basins 2 l/min
- Shower with maximum flow rate of 9 l/min (aerated)
- Taps in the kitchen 10 l/min
- Bath with a capacity to overflow of 150 litres
- 'A' rated washing machine (less than 8.17 litres per kg)
- 'A' rated dishwasher (less than 1.25 litres per place setting)

Targeted – 3/5 credits

Wat 2: External Water Use

To promote the recycling of rainwater and reduce the amount of mains potable water used for external water uses.

It is assumed that a suitable rain water collection device will be provided in accordance with the CSH criteria for recycling and reuse of water externally. The device will be located in the rear of the dwelling. As a result, one credit can be provisionally awarded.

Targeted – 1/1 credits

3.3 Materials

Mat 1: Environmental Impact of Materials

To specify materials with lower environmental impacts over their life-cycle.

At least three of the five key building elements must achieve a Green Guide rating of A+ to D. This is mandatory requirement for all CSH levels.

Key building elements (roof, external walls, internal walls, ground floors and upper floors, and windows) should achieve a high rating in the Green Guide wherever possible.

New build elements that are rated A+ to D will be specified and are considered early in the design of the development. Based on initial calculations, it is estimated that at least 10 credits can be achieved.

Targeted – 10/15 credits

Mat 2 Responsible Sourcing of Materials: Basic Building Elements

To promote the specification of responsibly sourced materials for the basic building elements.

This involves specifying materials for the basic building elements from manufacturers with a suitable environmental management system, and timber products from suitable reused, recycled and certified sources. It is estimated that at least 3 credits can be gained.

It should be confirmed with suppliers, at the earliest opportunity whether they can meet the requirement of the CSH.

Targeted – 3/6 credits

Mat 3 Responsible Sourcing of Materials: Finishing Elements

To promote the specification of responsibly sourced materials for the finishing elements.

This involves specifying materials for the finishing elements from manufacturers with a suitable environmental management system, and timber products from suitable reused, recycled and certified sources. It is estimated that at least 3 credits can be gained, however, this will required confirmation at the earliest stage in order to award credits.

Targeted – 3/3 credits

3.4 Surface Water Run-Off

Sur 1: Management of Surface Water Runoff from developments

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.

It is mandatory for all CSH levels to ensure that peak run-off rates and annual volumes of run-off post development will be no greater than the previous conditions for the site.

Two credits are available for using SUDS to improve water quality of the rainwater discharged or for protecting the quality of the receiving waters by:

1. Ensuring no discharge to the watercourse for rainfall depths up to 5mm (follow guidance in the Interim Code of Practice for Sustainable Drainage systems (SUDS) (CIRIA, 2004).

Or

2. Establish agreements for the ownership, long term operation and maintenance of all sustainable drainage elements used.

It is understood that the existing site consists of a single garage arranged over ground floor, as such limited impermeable area is present and will require calculations to be completed that identify that no increase in surface water run-off arises as a result of the new development. At this stage it is assumed that the use of SUDS will not be incorporated as part of the design, however, mandatory criteria will be met in line with requirements under the CSH technical guidance. Further works should be completed to ascertain the inclusion and incorporation of SUD techniques upon further detailed design during RIBA Stage D.

Targeted – 0/2 credits

Sur 2: Flood Risk

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.

The site is located within an area of Low Flood Risk (0.1%) according to the Environment Agency website (www.environment-agency.gov.uk)

A Flood Risk Assessment *(prepared according to good practice guidance as outlined in Development and Flood Risk: A practice guide companion to PPS25)* will be undertaken for credits to be awarded.

Targeted – 2/2 credits

3.5 Waste

Was 1: Storage of non-recyclable waste and recyclable household Waste

To provide adequate internal and external storage space for non-recyclable waste and recyclable household waste.

The mandatory requirement is to provide storage space for household and recycling waste, in accordance with the CSH criteria, i.e. sized for all external containers provided by the Local Authority OR the minimum capacity of waste storage as calculated from BS 5906 (whichever is the larger of the two).

Refuse stores will be sized according to the mandatory criteria. Camden Borough Council operates a weekly separated collection with general and recyclable waste. It will need to be confirmed that the scheme can be part of this service, however, it is currently assumed that full credits can be awarded.

Targeted – 4/4 credits

Was 2: Construction Site Waste Management

To promote resource efficiency via the effective and appropriate management of construction site waste.

It is assumed that a Site Waste Management Plan (SWMP) will be enforced as part of the construction programme. In addition, procedures and commitments to divert waste on-site by 85% (3 credits) will be put in-place as part of the contractors scope of works.

In line with the criteria above, three credits are currently assumed, however, additional clarity will be provided pending appointment of a lead contractor.

Targeted – 3/3 credits

Was 3: Composting

To promote the provision of compost facilities to reduce the amount of household waste sent to landfill.

Credits are awarded either for providing individual home composting facilities, or for a local community composting service which the Local Authority runs (or a management plan is in place), or for a Local Authority green/kitchen waste collection scheme. All facilities must also:

- Be in a dedicated position
- Be accessible to disabled people
- Have an information leaflet that is delivered to each dwelling

Following a review of Camden Borough Councils recycling policy, it is understood that the Local Authority runs a community composting service and as such one credits can be awarded/targeted.

Targeted – 1/1 credits

3.6 Pollution

Pol 1: Global Warming Potential (GWP) of Insulants

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.

All thermal and acoustic insulating materials such as in roofs, walls, floors, hot water cylinder, pipe insulation, etc., cold storage tanks (where provided) and external doors should have a GWP of less than 5, in both content and manufacture. It is assumed that all insulants used, will be specified to meet these criteria.

Targeted – 1/1 credits

Pol 2: NO_X Emissions

To promote the reduction of nitrogen oxide (NO_X) emissions into the atmosphere.

Credits are awarded on the basis of NO_X emissions arising from the operation of space heating and hot water systems as follows:

≤ 100 mg/kWh = 1 credit

≤ 70 mg/kWh = 2 credits

≤ 40 mg/kWh = 3 credits

Given the proposed use of a high efficiency boiler for building services, gas is utilised as a primary heating fuel. Boilers specified within the development will seek to achieve NO_X emissions ≤ 40 mg/kWh to enable the award of three credits.

Targeted – 3/3 credits

3.7 Health and Wellbeing

Hea 1: Daylighting

To promote good daylighting and thereby improve quality of life and reduce the need for energy to light the home.

Credits are awarded for meeting the following daylighting criteria:

- Kitchens: achieve a minimum average daylight factor of at least 2% (1 credit);
- Living rooms, dining rooms and studies: achieve a minimum average daylight factor of at least 1.5% (1 credit);
- 80% of the working plane in each of the above spaces receives direct light from the sky (1 credit)

Daylight calculations will need to be carried out to confirm the award of credits, however, upon initial review of the scheme, it has been assumed that two credits can be awarded.

NB: A daylight factor of 1.5% will need to be achieved for areas used as a home office in order to gain the credit for Ene 9.

Targeted – 2/3 credits

Hea 2: Sound Insulation

To promote the provision of improved sound insulation to reduce the likelihood of noise complaints from neighbours.

Credits are awarded for achieving higher standards of sound insulation than those given in Approved Document Part E of the Building Regulations by pre-completion acoustic testing or Robust Details as follows:

- 3dB improvement = 1 credit
- 5dB improvement = 3 credits
- 8dB improvement or detached = 4 credits

Given the detached nature of the dwelling, a total of 4 credits can be awarded by default.

Targeted – 4/4 credits

Hea 3: Private Space

To improve quality of life by promoting the provision of an inclusive outdoor space which is at least partially private.

Private or semi-private outdoor space must be provided to achieve this credit. This must be at least 1.5m²/bedroom for private external space and $1m^2$/bedroom for semi-private or communal external space (1.5m² per bedroom).

The proposed development will have private or semi-private external amenity space which exceeds the minimum space requirements.

Targeted – 1/1 credits

Hea 4: Lifetime Homes

To promote the construction of homes that are accessible and easily adaptable to meet the changing needs of current and future occupants.

All sixteen Lifetime Homes standards must be met to achieve the four available credits.

Criteria meeting Lifetime Homes have been incorporated as part of original scheme design and will be further development during the detailed design process.

Targeted – 4/4 credits

3.8 Management

Man 1: Home User Guide

To promote the provision of guidance enabling occupants to understand and operate their home efficiently and to make best use of local facilities.

All dwellings will be provided with a home user guide, compiled using the checklist provided in the Code for Sustainable Homes Technical Guide, with non-technical information for the occupant relating to the environmental performance of their home (2 credits). The guide should also cover information relating to the site and surroundings (1 credit).

A home user guide will be produced in accordance with the CSH checklists to achieve all 3 credits.

Targeted – 3/3 credits

Man 2: Considerate Constructors Scheme

To promote the environmentally and socially considerate, and accountable management of construction sites.

Credits are awarded where there is a commitment to comply with best practice site management principles, demonstrated though the Considerate Constructors Scheme (or other recognised scheme) scores as follows:

- Between 24 and 31.5 = 1 credit
- 32 and above = 2 credits

It is assumed that the appointed contractor will incorporate site registration against the Considerate Constructors Scheme and seek to achieve a score of 32 or above in order to achieve 2 credits.

Targeted – 2/2 credits

Man 3: Construction Site Impacts

To promote construction sites managed in a manner that mitigates environmental impacts.

Credits are awarded where there is a commitment and strategy to operate site management procedures on site:

- Monitor, report and set targets for CO_2 production or energy use arising from site activities
- Monitor and report CO_2 or energy use arising from commercial transport to and from site
- Monitoring, report and set targets for water consumption from site activities
- Adopt best practice policies in respect to air (dust) pollution arising from site activities
- Adopt best practice policies in respect to water (ground and surface) pollution occurring on site
- 80% of timber is reclaimed, reused or responsibly sourced

1 credit is achieved for following two or more of the above and 2 credits for four or more.

It is assumed that the appointed contractor will incorporate suitable provisions to achieve four of the above criteria in order to achieve 2 credits.

Targeted – 2/2 credits

Man 4: Security

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.

An Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA) from the local police force will be consulted at the design stage and the development will work towards incorporating their recommendations into the design of the dwelling. An actual Secured by Design Certificate is not required for the CSH.

It is the intention of the development to incorporate recommendations made by the ALO/CPDA and seek to achieve compliance in line with Part 2 of SBD *'Physical Security'*

Targeted – 2/2 credits

3.9 Ecology

Eco 1: Ecological Value of Site

To promote development on land that already has a limited value to wildlife, and discourage the development of ecologically valuable sites.

To achieve this credit, either the site must be confirmed to be of low ecological value, or all existing areas of ecological value on the development site are to be maintained and protected.

It is assumed that the site has no features of ecological value, however this must be confirmed by a suitable qualified ecologist (SQE) prior to commencement of work on-site.

Targeted – 1/1 credits

Eco 2: Ecological Enhancement

To enhance the ecological value of the site.

An ecology survey must be undertaken and all of the key recommendation and at least 30% of the additional recommendation of a suitable qualified ecologist (as confirmed by CSH assessor) with respect to the ecological enhancement should be implemented.

The survey must be undertaken before any preparation work is undertaken on the site.

Targeted – 1/1 credits

Eco 3: Protection of Ecological Features

To promote the protection of existing ecological features from substantial damage during the clearing of the site and the completion of construction works.

To achieve this credit, all existing features of ecological value on the development site are to be maintained and protected during site clearance, with preparation and construction works in accordance with the suitably qualified ecologist's recommendations.

It is assumed that the site has no features of ecological value, in accordance with credit Eco 1 (and as such awarded by default). It should be noted however, that confirmation should be sought from the appointed ecologist.

Targeted – 1/1 credits

Eco 4: Change of Ecological Value of Site

To minimise reductions and to encourage an improvement in ecological value.

Credits are awarded according to the difference in ecological value before and after development, measured according to the overall change in species per hectare as follows:

- Minor negative change: between -9 and less than or equal to -3 (1 credit)
- Neutral: greater than -3 and less than or equal to +3 (2 credits)
- Minor enhancement: greater than 3 and less than or equal to 9 (3 credits)
- Major enhancement: greater than +9 (4 credits)

The change in species per hectare is dependent on the existing number of species currently on the site which will need to be determined by the ecology consultant.

As aforementioned under Eco 2, an ecologist will be appointed to provide advice on a suitable planting schedule to enable the award of three credits, providing a minor enhancement as defined under the CSH.

Targeted – 3/4 credits

Eco 5: Building Footprint

To promote the most efficient use of a building's footprint by ensuring that land and material use is optimised across the development.

One credit is awarded where all houses have a footprint to total floor area of 2.5:1, and all flats 3:1

Two credits are awarded where all houses have a footprint to total floor area ratio of 3:1 and all flats 4:1

Given the arrangement of the building, no credit has been assumed, however, will be subject to further calculation following detailed design, which may allow for the award of an additional credit.

Targeted – 0/2 credits

Appendix A – Code for Sustainable Homes Summary

Code For Sustainable Homes Nov 2010	Original Pre Assesment
Mendick Waring Ltd Consulting Engineers	Broad assumptions
Ene 1 - Dwelling Emission Rate	3.5
Ene 2 - Fabric Energy Efficiency	0
Ene 3 - Display Energy Devices	2
Ene 4 - Drying Space	1
Ene 5 - White Goods	2
Ene 6 - External Lighting	2
Ene 7 - Low Zero Carbon Technologies	2
Ene 8 - Cycle Storage	2
Ene 9 - Home Office	1
Ene Total	15.5
Wat 1 - Internal Water Consumption	3
Wat 2 - External Water Use	1
Wat Total	4
Mat 1 - Environmental Impact of Materials	10
Mat 2 - Responsible Sourcing of Materials - Basic Building Elements	3
Mat 3 - Responsible Sourcing of Materials - Finishing Elements	3
Mat Total	16
Sur 1 - Management of Surface Water Run-off from developments	0
Sur 2 - Flood Risk	2
Sur Total	2
Was 1 - Storage of non-recyclable waste and recyclable household waste	4
Was 2 - Construction Site Waste Management	3
Was 3 - Composting	1
Was Total	8
Pol 1 - Globoal Warming Potential of Insulants	1
Pol 2 - NOx Emissions	3
Pol Total	4
Hea 1 - Daylighting	2
Hea 2 - Sound Insulation	4
Hea 3 - Private Space	1
Hea 4 - Lifetime Homes	4
Hea Total	11
Man 1 - Home User Guide	3
Man 2 - Considerate Constructors Scheme	2
Man 3 - Construction Site Impacts	2
Man 4 - Security	2
Man Total	9
Eco 1 - Ecological value of site	1
Eco 2 - Ecological enhancement	1
Eco 3 - Protection of ecological features	1
Eco 4 - Change in ecological value of site	3
Eco 5 - Building footprint	0
Eco Total	6
Total	**70.13**