Belsize Road | Sustainability

Sustainable Home Assessments

Context

Summary

Code for Sustainable Homes Level 4 Pre-assessment

Conclusion and next steps

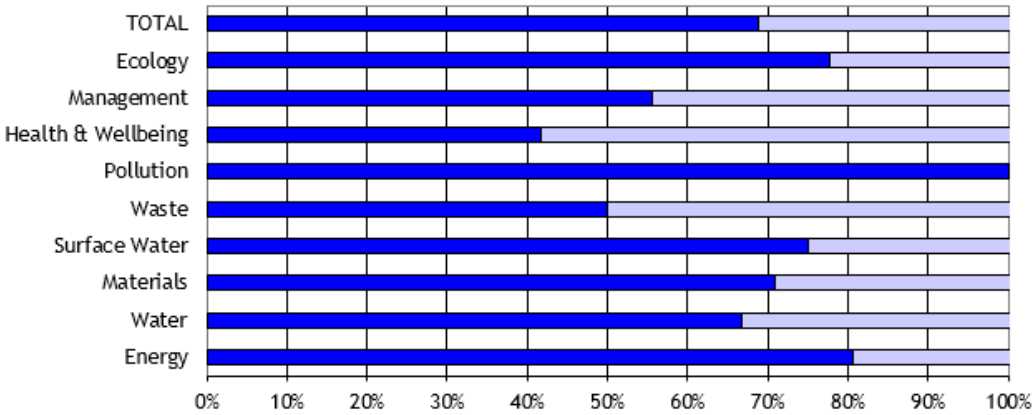
Belsize Road| Code for Sustainable Homes | Summary

Sustainable Home Assessments

Belsize Roadis targeting a Level 4 rating under the Code for Sustainable Homes (CfSH), November 2010 version. This pre–assessment, which has been carried out by Sustainable Home Assessments Ltd (SHA) on behalf of Alfred Yazdiha, allows an evaluation of the likely rating to be achieved under a formal assessment. It can also been used as a guidance document so that the most relevant credits at this stage are taken into account in the design and the budget. These are summarised below:

- The dwellings must be **at least 25% better than Part L1A 2010**. This is reliant on an airtight and efficient envelope including triple glazed windows, efficient services. A mechanical heat recovery system or solar PV could be installed in order to achieve the savings for this.
- The average water consumption must not exceed **105 litres/person/day** with sensor taps low flow showers and other reduction measures being considered;
- Internal and external storage space will be provided for **recyclables and general waste.**
- The **green guide rating of materials** should influence the selection of materials;

Based on the assumptions summarised in this pre–assessment report, a score of **68.81% is** achieved, i.e. 0.81% above the score required to achieve Level 4, i.e. 68%.



The above graph shows the percentage of credits obtained within each section.

Belsize Road | CfSH | Introduction

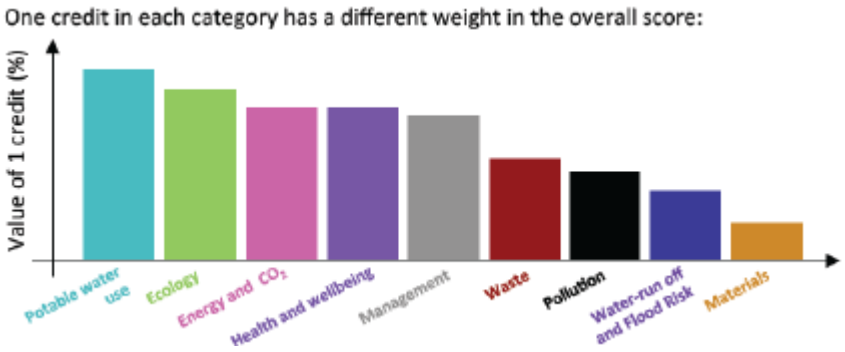
Sustainable Home Assessments

The Code for Sustainable Homes (CfSH) is an Environmental Assessment Methodology developed and administered by the BRE for the Department of Communities and Local Government (CLG).

Its aim is to reduce the residential development's impact on the environment by:

- Reducing energy use and $C0_2$ emissions while allowing residents to monitor their energy use;
- Reducing potable water use;
- Minimising pollution;
- Managing water run-off and flood risk;
- Promoting materials with the lowest environmental impact;
- Managing construction and household waste;
- Improving health and wellbeing (e.g. comfort, amenity, Lifetime Homes);
- Incorporating beneficial management processes (e.g. considerate construction, home user guide);
- Enhancing the site's ecological value.

One credit in each category has a different weight in the overall score:



There are 6 Code for Sustainable Homes levels depending on the overall score and whether the specific mandatory credits have been met.

CfSH Level	Minimum score	Maximum potable water use	Minimum% reduction over Part L 2010
1 (*)	36%	120 l/person/day	10%
2 (**)	48%	120 l/person/day	18%
3 (***)	57%	105 l/person/day	25%
4 (****)	68%	105 l/person/day	44%
5 (*****)	84%	80 l/person/day	100%
6 (******)	90%	80 l/person/day	Zero Carbon

Belsize Road | CfSH | This document

Caution

This document is a Code for Sustainable Homes pre assessment report. Its aim is to indicate which credits could be targeted in order to achieve a 'Level 4' rating and to summarise the requirements associated with each credit . For these credits to be delivered, it is crucial for all team members to review the full requirements associated with each credit contained in the Code Technical Manual. The latest version (Nov 2010) of this Manual has been used to prepare this Pre-assessment and can be obtained at:

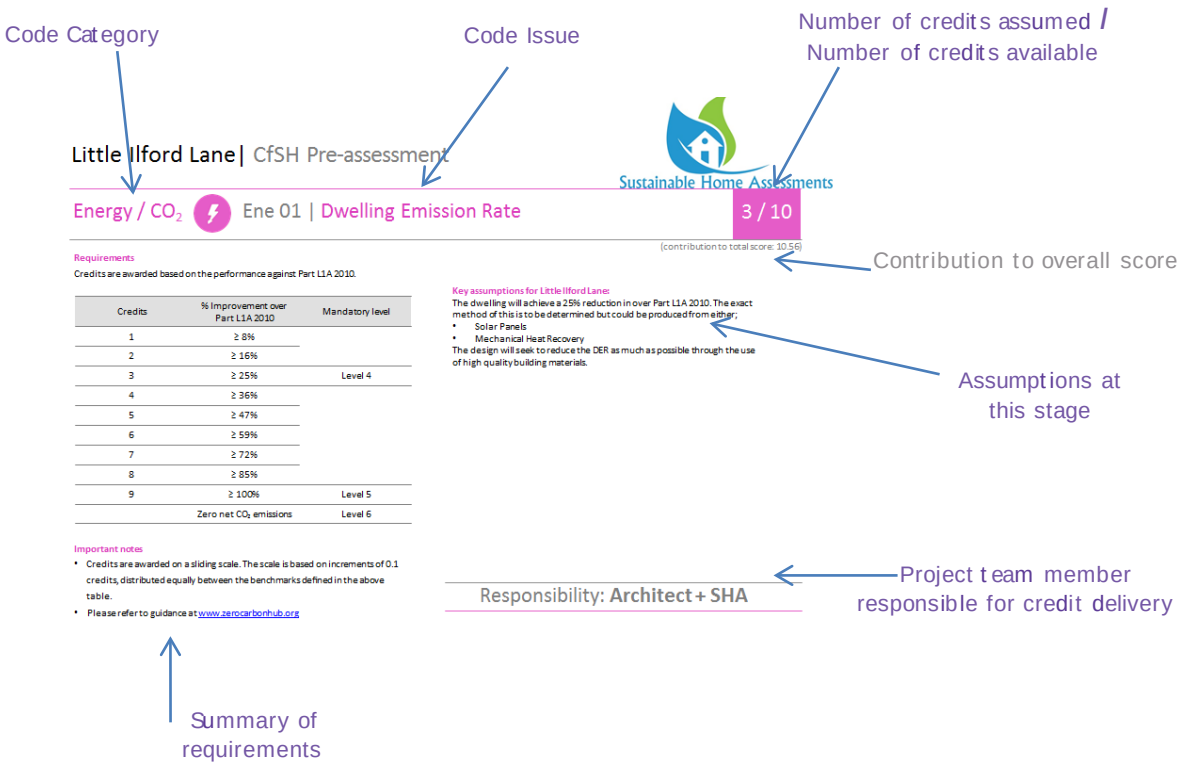
- https://www.gov.uk/government/publications/codefor-sustainable-homes-technical-guidance
- by contacting SHA at admin@sustainablehomeassessments.co.uk

It should also be noted that the assumptions made in this document are valid for this early stage of the design and should be refined and re-evaluated as the design progresses so that their accuracy and validity reflect the design and the full credit requirements.

Purpose

One page has been prepared for each applicable credit. Its aim is to summarise clearly the credit requirements, the number of credits assumed and the assumptions made at this stage of the design.

The figure below illustrates how each credit is presented:



Sustainable Home Assessments

Energy / CO_2 Ene 01 | Dwelling Emission Rate

6 / 10

(contribution to total score: 7.02)

Requirements

Credits are awarded based on the performance against Part L1A 2010.

Credits	% Improvement over Part L1A 2010	Mandatory level
1	≥ 8%	
2	≥ 16%	
3	≥ 25%	Level 4
4	≥ 36%	
5	≥ 47%	
6	≥ 59%	
7	≥ 72%	
8	≥ 85%	
9	≥ 100%	Level 5
	Zero net CO_2 emissions	Level 6

Key assumptions for Belsize Road:

The dwelling will achieve a 25% reduction in over Part L1A 2010. The exact method of this is to be determined but could be produced from either;

- Solar Panels
- Mechanical Heat Recovery

The design will seek to reduce the DER as much as possible through the use of high quality building materials.

Important notes

- Credits are awarded on a sliding scale. The scale is based on increments of 0.1 credits, distributed equally between the benchmarks defined in the above table.
- Please refer to guidance at www.zerocarbonhub.org

Responsibility: **Architect + SHA**

Sustainable Home Assessments

Energy / CO_2 Ene 02 | Fabric energy efficiency

7/ 9

(contribution to total score: 8.19)

Requirements

Fabric Energy Efficiency Standards estimate the energy demand for space heating and cooling expressed in kWh/m²/year.

Credits	Apartment blocks and mi–terrace	End terrace, semi detached & detached	Mandatory level
3	≤ 48 kWh/m²/yr	≤ 60 kWh/m²/yr	
4	≤ 45 kWh/m²/yr	≤ 55 kWh/m²/yr	
5	≤ 43 kWh/m²/yr	≤ 52 kWh/m²/yr	
6	≤ 41 kWh/m²/yr	≤ 49 kWh/m²/yr	
7	≤ 39 kWh/m²/yr	≤ 46 kWh/m²/yr	Levels 5 and 6
8	≤ 35 kWh/m²/yr	≤ 42 kWh/m²/yr	
9	≤ 32 kWh/m²/yr	≤ 38 kWh/m²/yr	

Important notes

- Credits are awarded on a sliding scale. The scale is based on increments of 0.1 credits, distributed equally between the benchmarks defined in the above table.
- Please refer to guidance at www.zerocarbonhub.org

Key assumptions for Belsize Road

Based on the the DER having to be reduced a large amount on this project in order to achieve the mandatory element of Ene 01 then the dwelling will seek to achieve a low energy demand for space heating and cooling for this development

Any measures which would reduce the house's energy consumption (e.g. reduction of window area, improvement of U–values, etc.) would help to reduce the FEES level.

Responsibility: **Architect + SHA**

Energy / CO_2 Ene 03 | Energy display devices

2 / 2

(contribution to total score: 2.35)

Requirements

Credits are awarded based on the specification of equipment dedicated to the dwelling to display energy consumption data to the occupants.

Credits	Energy consumption displayed
1	Electricity OR primary heating fuel consumption
2	Electricity AND primary heating fuel consumption

Important notes

The equipment should comprise a self–charging sensor fixed to the incoming mains supply/supplies to measure and transmit energy consumption data to a visual display unit. As a minimum the visual display unit must be capable of displaying local time, current mains energy consumption (kW and kWh), CO_2 emissions, current tariff, current cost, accurate account balance informaPon (amount in credit or debit), visual presentation to allow consumers to easily identify high and low level of usage and historical consumption data so that consumers can compare their current and previous usage in a meaningful way. This should include cumulative consumption data.

Key assumptions for Belsize Road

Electricity fuel consumption will be displayed in each unit. As electricity will also be the primary heating fuel, two credits can be targeted.

Examples of energy display devices:

Responsibility: **Contractor**

Sustainable Home Assessments

Energy / CO_2 Ene 04 | Drying space

1 / 1

(contribution to total score: 1.17)

Requirements

Space and equipment should be provided for drying clothes. The length of the drying line should be at least:

4m+ For 1-2 bedroom dwellings

6m+ For 3 bedroom dwellings

Important notes

- The drying space must be heated with controlled intermittent extract ventilation, which must achieve a minimum extract rate of 30 l/s OR be an external secure space.
- Any fixings/fittings must be a permanent feature of the room/space.

Key assumptions for Belsize Road

Drying space to be provided in bathroom with suitable levels of ventilation 30 L/S and be controlled according to the requirements for intermittent extract ventilation AD F

Responsibility: **Architect**

Sustainable Home Assessments

Energy / CO_2 Ene 05 | Energy Labelled White Goods

2 / 2

(Contribution to total score: 2.34)

Requirements

2 credits are awarded based on which appliances are provided in each dwelling, and of their energy label.

A+	Fridges and freezers or fridge-freezers - *installed*
A	Washing machines and dishwashers - *installed*
B	Tumble dryers or washer dryers - *installed or guidance*

Only 1 credit is awarded when no white goods are provided but EU Energy Efficiency Labelling Scheme Information is provided to each dwelling,

Key assumptions for Belsize Road

The following white goods will be provided from the outset:

- Fridge-freezers which are at least A+ rated
- Dishwashers which are at least A rated
- Washer dryers which are at least B rated.

Fridge-freezer

Dishwasher

washer dryer

Responsibility: Architect + SHA

Sustainable Home Assessments

Energy / CO_2 Ene 06 | External lighting

2 / 2

(contribution to total score: 2.34)

Requirements

1 credit

External lighting and **lighting in common *areas*** *(excluding statutory safety lighting)* is provided by dedicated energy efficient fittings (i.e. efficacy greater than 40 lumens per circuit watt) and controlled to prevent unnecessary operation (e.g. during daylight hours or when the space is not occupied).

1 credit

All **security lighting** is designed for energy efficiency and is fitted with daylight cut–off sensors or a time switch.

And all burglar security lights have:

- a maximum wattage of 150 W
- movement detecting control devices (PIR)
- daylight cut–off sensors

Key assumptions for Belsize Road

Compliance with both credits is targeted.

Important notes

- Tubular fluorescent and compact fluorescent light fittings would typically meet this requirement.
- Light fittings for GLS tungsten lamps with bayonet cap or Edison screw bases, or tungsten lamps would not comply.

Responsibility: **Contractor**

Sustainable Home Assessments

Energy / CO_2 Ene 07 | Low and zero carbon technologies

0 / 2

(contribution to total score: 0.00)

Requirements

Credits are awarded based on the carbon reduction achieved by low and zero carbon technologies.

Credits	% reduction in regulated CO_2 emissions
1	10%
2	15%

Important notes

- Renewable technologies eligible must meet the requirements of Directive 2009/28/EC.
- Combined Heat and Power (CHP) schemes fuelled by mains gas are eligible.
- Off–site renewable energy sources can qualify provided they meet a number of criteria (e.g. additionality rule, Renewable Energy Guarantee of Origin (REGO) certified).

Key assumptions for Belsize Road:

It is not necessary to install carbon reduction technologies for this project, unless otherwise stated by Camden Council. The project can satisfactorily achieve the credits required.

Responsibility: **Contractor + SHA**

Sustainable Home Assessments

Energy / CO_2 Ene 08 | Cycle storage

2 / 2

(contribution to total score: 2.34)

Requirements

	1 credit		2 credits
Studios and 1B	0.5 / dwelling		1 / dwelling
2B and 3B	1 / dwelling	or	2 / dwelling
4B+	2 / dwelling		4 / dwelling

Key assumptions for Belsize Road

At least 2 No cycle spaces will be provided for the development.

Important notes

- The minimum storage area required to store cycles on the floor must allow the cycles to be moved independently (e.g. 2m x 0.75m for 1 cycle, 2m x 1.5m for 2 cycles, 2m x 2.5m for 4 cycles).
- Where a proprietary storage or hanging system is provided, the space requirements are flexible but the system must allow each cycle to be removed independently.
- Access from the cycle store to the public right of way through the dwelling is not acceptable.
- Communal cycle store(s) must be located within 100m of the front door of the main entrance.
- The entrance to the communal cycle store must meet the requirements of clauses 21.2 to 21.6 and 21.8 to 21.13 of the 'Secured by Design New Homes 2010' document.

Responsibility: **Architect**

Sustainable Home Assessments

Energy / CO_2 Ene 09 | Home office

1 / 1

(contribution to total score: 1.17)

Requirements

A space and services should be provided to enable a room to be used as a home office. The room must comply with the following requirements:

- It must achieve an Average Daylight Factor (ADF) of at least 1.5%.
- It should have sufficient space (1.8m wall length) to allow a desk, chair and filing cabinet or bookshelf to be installed with space to move around the front and the side of the desk.
- It must have sufficient services (i.e. two double power sockets, one telephone point and a broadband connecPon) and ventilation.

Important notes

- For 3B+ dwellings, the home office cannot be in the master bedroom or bathroom, or in the kitchen or living room.
- In all cases, the room must be large enough to allow the intended use of that room.

Key assumptions for Belsize Road

This credit is assumed and should be reviewed with Architect.

The home office can be in the master bedroom, the living room or a large hall space

confirmation that the identified room for home office will achieve an Average Daylight Factor of at least 1.5% will also be necessary.

Responsibility: **Architect + Daylight Consultant**

Water Wat 01 | Internal water use

3 / 5

(Contribution to total score: 4.50)

Requirements

Credits are awarded based on the estimated average potable water consumption.

Credits	Water consumption	Mandatory level
1	≤120 litres/p/day	Levels 1 and 2
2	≤110 litres/p/day	
3	≤105 litres/p/day	Levels 3 and 4
4	≤90 litres/p/day	
5	≤80 litres/p/day	Levels 5 and 6

Important notes

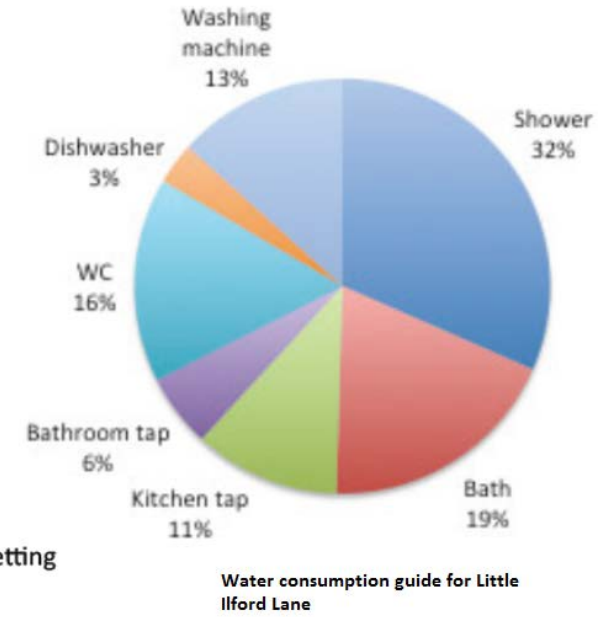
The calculation needs to be undertaken for each dwelling which has a different specification.

Key assumptions for Belsize Road

The following flow rates are targeted. According to the Water Calculator this would represent a CfSH water consumption of 100.71l/p/day.

100.7 litres / person / day

- **Shower**: 8 litres/min
- **Bath**: 190 litres to overflow
- **Kitchen tap**: 5 litres/min
- **Bathroom tap**: 3 litres/min
- **WC:** dual flush 6 / 3 litres
- **Dishwasher**: 1 litre/place setting
- **Washing machine**: 7 litres/kg dry load



Responsibility: Architect

Sustainable Home Assessments

Water Wat 02 | External water use

0 / 1

(contribution to total score: 0.00)

Requirements

Where a sufficiently sized system to collect rainwater for irrigation is provided:

Type of space	Associated rainwater system minimum size requirement
Individual terrace or patio	100 litres / dwelling
Individual garden (1 – 2 bed home)	150 litres / dwelling
Individual garden (3 bed + home)	200 litres / dwelling
Communal garden	1 litre/m^2 with a minimum of 200 litres

OR

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

Important notes

- The above requirements can be halved under certain circumstances (e.g. if no planting is provided or if planting requires little water).
- If the communal garden is shared by more than 6 dwellings, a maximum of 30 litres per dwelling can also be applied to the size of the communal garden rainwater system.
- The presence of a swimming pool triggers additional requirements.

Key assumptions for Belsize Road:

There is no external space requiring irrigation.

Responsibility: **Architect**

Sustainable Home Assessments

Materials Green Guide Mat 01 | Environmental impact of materials

11 / 15

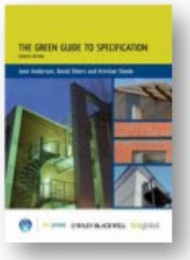
(contribution to total score: 3.30)

Requirements

The aim of this credit is to promote the use of materials with lower environmental impacts over their lifecycle. Credits are awarded according to the Green Guide rating of materials used in the building (see http://www.bre.co.uk/greenguide).

Up to 15 credits are available, depending on the Green Guide rating of the following elements:

- Roof
- External Walls
- Internal Walls (including separating walls)
- Upper floors (including separating floors)
- Windows



The Code Mat 1 calculator needs to be used to assess the number of credits achievable.

Important notes

Where multiple dwellings are contained within a single envelope, the percentages of all individual Green Guide specifications throughout the entire building must be included, even where significantly differing construction methods are used for different parts of the building.

Key assumptions for Belsize Road

A review of the Green Guide ratings of materials currently envisaged is being carried out to confirm that a target of **11 credits** is appropriate at this stage.

Element	Reference	DescripPon	RaBng
Roof	1212540037	Timber joists, OSB/3 decking, vapour control layer, insulation, EPDM single ply waterproofing membrane	**A+**
External walls	806210051	Pre-treated softwood weatherboarding, breather membrane, OSB/3 sheathing, timber frame with insulation, vapour control layer, plasterboard on battens, paint	**A+**
Internal walls	809760054	Timber casette internal wall panel with plywood (softwood) sheathing, plasterboard and paint	**A**
Floors	820100203	Powerfloated in situ 30% PFA concrete slab, over insulation on polyethylene dpm laid on blinded recycled aggregate sub-base	**B**
	807280024	Chipboard decking on timber I joists	**A+**
Windows	1213100009	Powder coated aluminium window with softwood internal frame, ***double*** glazed, water based stain internally: aluminium profile < 0.87 kg/m and timber profile < 2 kg/m	**A**

Responsibility: **Architect + SHA**

Materials Mat 02 | Responsible Sourcing of Materials (basic building elements) 4 / 6

(contribution to total score: 1.20)

Requirements

A minimum of 5 elements below must be 'responsibly sourced':

- Frame
- Upper Floors
- Roof
- External Walls
- Internal Walls
- Foundation/Substructure (excl. sub-base material)
- Staircase

Example of Material	Key Process	Supply Chain Process
Brick (including ceramics)	Product manufacture	Clay extraction
Glass	Glass Production	Sand extraction AND Soda ash production or extraction
In-situ concrete	Ready mixed concrete plant	Cement production Aggregate extraction and production
Precast concrete	Concrete product manufacture	Cement production Aggregate extraction and production

At least 80% of each element assessed must comply with tier levels 1-4 for responsible sourcing. Based on the number of elements assessed and the tier level achieved for each of these elements, up to 6 credits are achievable.

Tier level	Examples of Compliant Schemes
1	FSC, CSA, PEFC, Reused Materials, Schemes compliant with BES6001:200861 (or similar) Excellent and Very Good Performance Ratings
2a	Schemes compliant with BES6001:2008 (or similar) 'Good' Rating
2b	Schemes compliant with BES6001:2008 (or similar) 'Pass' Rating
3	Certified EMS for the Key Process and Supply Chain Recycled materials with certified EMS for the Key Process
4	Certified EMS for the Key Process

Additionally: 100% of any timber in these elements must be legally sourced.

At this stage, it is reasonable to assume that **2 credits** can be achieved.

Responsibility: Contractor

Materials Green Guide Mat 03 | Responsible Sourcing of Materials (Finishing Elements) 2 / 3

(contribution to total score: 0.6)

Requirements

A minimum of 5 elements below must be 'responsibly sourced':

- Staircase
- Windows
- External & internal doors
- Skirting
- Panelling
- Furniture
- Fascias
- Any other significant use

Example of Material	Key Process	Supply Chain Process
Plasterboard or plaster	Plasterboard or plaster manufacture	Gypsum extraction
Wood panel products	Timber certification route	
Metals	Metal product manufacture	Metal production (e.g. Aluminium: ingot production)
Plastics and rubbers	Plastic/rubber product manufacture	Main polymer production

At least 80% of each element assessed must comply with tier levels 1-4 for responsible sourcing. Based on the number of elements assessed and the tier level achieved for each of these elements, up to 3 credits are achievable.

Tier level	Examples of Compliant Schemes
1	FSC, CSA, PEFC, Reused Materials, Schemes compliant with BES6001:200861 (or similar) Excellent and Very Good Performance Ratings
2a	Schemes compliant with BES6001:2008 (or similar) 'Good' Rating
2b	Schemes compliant with BES6001:2008 (or similar) 'Pass' Rating
3	Certified EMS for the Key Process and Supply Chain Recycled materials with certified EMS for the Key Process
4	Certified EMS for the Key Process

Additionally: 100% of any timber in these elements must be legally sourced.

At this stage, it is reasonable to assume that **1 credit** can be achieved.

Responsibility: Contractor

Sustainable Home Assessments

Surface Water Run-off

Sur 01 | Management of water run-off

1 / 2

(Contribution to total score: 0.55)

Requirements

Mandatory requirements (applicable where there is an increase in impermeable area)

Peak rate of run-off

The peak rate of run-off over the development lifetime, allowing for climate change, must be no greater than it was for the pre-development site. This should comply at the 1 year and 100 year return period events

Designing for local drainage failure

It must be demonstrated that the flood -ing of property would not occur in the event of a local drainage system failure

Volume of run-off

The post development volume of run off, allowing for climate change over the development lifetime, must be 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.

Credits

Credits	Requirements
1	If there is no discharge for rainfall depths up to 5 mm
1	If 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.

Key assumptions for Belsize Road

The proposed development will be on an existing hard standing footprint and therefore there will be no increase in impermeable area on the site caused by the proposed development.

Responsibility: Architect + Contractor

Surface Water Run-off Sur 02 | Flood Risk

2 / 2

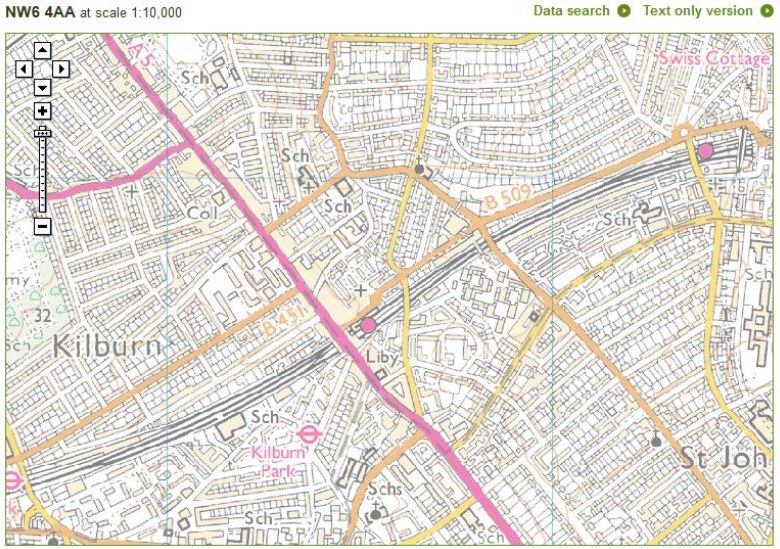
(Contribution to total score: 1.10)

Requirements

Zone 1 (2 credits)	Zones 2 and 3a (1 credit)
A Flood Risk Assessment {FRA) must be prepared to confirm that there is a low risk of flooding from all sources.	The finished ground floor level of all habitable parts of dwellings and access routes to the ground level and the site must be at les 600 mm above the design flood level of the flood zone. A Flood Risk Assessment (FRA) must demonstrate that the development is appropriately flood resilient.

Key assumptions for Belsize Road

The Environment Agency Flood Map is provided below and shows that the proposed development is not at risk of flooding:



It is therefore assumed that 2 credits can be targeted. A Flood Risk Assessment (FRA) must be prepared to confirm the low risk of flooding from All sources.

Responsibility: Contractor

Sustainable Home Assessments

Waste Was 01 | Storage of waste

4 / 4

(contribution to total score: 3.20)

Requirements

External storage space

The external storage capacity should be sized according to the largest of the following two volumes:

- The minimum volume recommended by BS5906:2005
- The total volume of the bins provided by the Local Authority

The bin store should be no further than 30m away from the front door of any dwelling.

Internal storage

- A bin for non recyclable waste
- A 30–litre bin (minimum) for recyclable waste (if co–mingled waste collection)

Key assumptions for Belsize Road

The following storage systems will be provided to maximise recycling rates:

- a bin for non recyclable waste
- a 30–litre bin (minimum) for recyclable waste
- A minimum 7–litre bin for kitchen waste

Recyclables in Camden

Responsibility: **Architect**

Sustainable Home Assessments

Waste Was 02 | Construction Site Waste Management

0 / 3

(Contribution to total score:)

Requirements

1 credit

Preparation of a compliant site waste management plan (SWMP) which includes target benchmarks for resource efficiency.

Incorporation in the SWMP of procedures and a commitment to sort and divert from landfill in order to achieve the following rates for non-hazardous waste

2 credits

50% diverted from landfill

3 credits

85% diverted from landfill

Key assumptions for Belsize Road:

It would not be feasible to try to achieve this for the scale of this development

Responsibility: Contractor

Sustainable Home Assessments

Waste Was 03 | Composting

1 / 1

(contribution to total score: 0.8)

Requirements

One credit is awarded where:

- composting facilities are provided (e.g. a local communal service which the Local Authority runs and where the compost is used by the community).

OR

- the Local Authority operates a green/kitchen waste collection scheme.

Important notes

- The composting facilities / external storage space should be no further than 30m away from the site entrance.
- Space for a 7–litre container (minimum size) should be provided in the dwelling.

Key assumptions for Belsize Road

Camden operates a garden and Kitchen waste collection Scheme, therefore this credit can be awarded.

Responsibility: **Architect**

Sustainable Home Assessments

Pollution Pol 01 | Global warming potential of insulants

1 / 1

(contribution to total score: 0.70)

Requirements

All insulating materials must only have substances that have a Global Warming potential (GWP) of less than 5 (in manufacture and installation). This is applicable to:

- Roofs
- Walls (external and internal – including acoustic insulation)
- Floors
- Hot water cylinder and pipes
- Cold water storage tank
- External doors

Examples of foamed and non–foamed insulation include:

Foamed insulation	Non–foamed insulation
Expanded polystyrene (EPS)	Mineral wool or fibre
Extruded polystyrene (XPS)	Glass wool or fibre
Polyurethane insulation (PU)	Cellulose insulation
Cellular glass or foamed glass	Wood fibre board

Important notes

For foamed materials, or propellants used to spray or inject insulation, the following blowing agents are acceptable: Air, CO_2, Pentane (iso–pentane, cyclopentane, n--pentane), Iso butene.

Key assumptions for Belsize Road

This credit is targeted.

Responsibility: **Architect + Contractor**

Sustainable Home Assessments

pollution Pol 02 | NOx emissions

2/ 3

(contribution to total score: 2.1)

Requirements

Credits are awarded based on the level of NOx emissions of the space heating and hot water energy generation equipment.

Credits	Dry NOx Level (mg/kWh)
1	≤ 100
2	≤ 70
3	≤ 40

Important notes

Dry NOx emissions are the NOx emissions resulting from the combustion of a fuel at zero percent excess oxygen levels and expressed in mg/kWh.

Key assumptions for Belsize Road:

A suitable heating system will be specified at a later date to achieve the credits required under this section of the Code.

Responsibility: Contractor-

Sustainable Home Assessments

Health and Wellbeing Hea 01 | Daylighting

3 / 3

(contribution to total score: 3.51)

Requirements

1 credit

If **kitchens** achieve a minimum Average Daylight Factor of **2%**

1 credit

If **living rooms, dining rooms and studies** (including any room designated as a home office) achieve a minimum Average Daylight Factor of **1.5%**

1 credit

If 80% of the working plane in each kicthen, living room, dining room and studies (including any room designated as a home office) receives **direct light from the sky**.

Important notes

- The Average Daylight Factor can be calculated using the formula described in the definitions section (method described in littlefair (1998) as set out in BS 8206–2) or computer simulation or scale model measurement.
- The posiPon of the no–sky line and percentage of area of the working plane that receives direct light from the sky needs to be identified on drawings and calculated. The working plane is assumed to be at 0.85m above the floor.
- It is recommended that calculations are supplied by a daylighting expert.
- It is acceptable that daylighting calculations are carried out in selected dwellings (or rooms) when the reasoning behind their selection clearly demonstrates that the rooms in the dwellings for which the calculations are not provided will perform better than those backed up by the calculations.

Key assumptions for Belsize Road:

The development is being designed in a way that should facilitate the awarding of these credits. A daylight report will have to be undertaken in order to gain the credits.

Responsibility: **Daylight Consultant**

Sustainable Home Assessments

Health and Wellbeing Hea 02 | Sound insulation

3 / 4

(contribution to total score: 3.51)

Requirements

Credits are awarded based on the improvement over the performance standards set out in the Building Regulations Approved Document E (2003 Edition, with amendments 2004).

Credits	Improvements beyond Part E
1	• Airborne sound insulation values (DnT,w + Ctr) are at least **3dB** higher • Impact sound insulation values (L'nT,w) are at least **3dB** lower
3	• Airborne sound insulation values (DnT,w + Ctr) are at least **5dB** higher • Impact sound insulation values (L'nT,w) are at least **5dB** lower
4	• Airborne sound insulation values (DnT,w + Ctr) are at least **8dB** higher • Impact sound insulation values (L'nT,w) are at least **8dB** lower

Important notes

- The levels of performance above can be demonstrated through.

A programme of pre–completion testing based on the Normal programme of testing described in Approved Document E.

or

Use of construction for all relevant building elements that have been assessed and approved as Robust Details by Robust Details Limited (RDL) and found to achieve the performance standards above *(www.robustdetails.com)*

- These criteria only apply to walls, floors and staircases that perform a **dwelling to dwelling separation**.

Key assumptions for Belsize Road

A suitably qualified acoustician has been employed on this project and the development is proposing to ensure that sound levels are reduced to a minimum due to the proximity to the railway station.

Responsibility: Acoustic Consultant

Sustainable Home Assessments

Health and Wellbeing Hea 03 | Private Space

0 / 1

(Contribution to total score: 0.00)

Requirements

Where accessible outdoor space is provided:

Private	Semi-private / Communal
1.5 m^2 per bedroom	**1m^2 per bedroom**

Key assumptions for Belsize Road

There is no private space provided.

Important notes

The space should be accessible only to occupants of designated dwellings.

Responsibility: Architect

Sustainable Home Assessments

Health and Wellbeing Hea 04 | Lifetime Homes

0 / 4

(contribution to total score: 0.00)

Requirements

Where all principles of **Lifetime Homes** applicable to the dwelling being assessed have been complied with.

Important notes

The purpose of the Code for Sustainable Homes is not to deliver purpose–designed wheelchair housing but rather inclusive general needs housing that caters for the widest possible segment of the population (including older people), and which can easily be adapted to meet the needs of wheelchair users.

Key assumptions for Belsize Road

Credit Not targeted

- 01 -Parking
- 02 -Approach to dwellings from parking
- 03 -Approach to all entrances
- 04 -Entrances
- 05 -Communal stairs and lips
- 06 -Internal doorways and hallways
- 07 -circulation space
- 08 -Entrance level living space
- 09 -potential for entrance level bedspace
- 10 -Entrance level WC and shower drainage
- 11 -WC and bathroom walls
- 12 -Stairs and potential through--floor lip in dwelling
- 13 -potential for fitting of hoists in bathroom/bedroom
- 14 -Bathrooms
- 15 -Glazing and window handle heights
- 16 -location of service controls

Responsibility: **Architect**

Management Man 01 | Home user guide

3 / 3

(contribution to total score: 3.33)

Requirements

Credits are awarded based on the informaPon contained in the Home User Guide.

Credits	InformaPon covered in the Home User Guide
2	• Environmental strategy /design and features • Energy • Water use • Recycling and waste • Sustainable DIY • Emergency InformaPon • Links, references and further informaPon
+ 1	• Sustainable Drainage Systems (SuDS) • Public Transport • Local ameniPes • Responsible purchasing

Important notes

- The Home User Guide should include the procedure for obtaining the guide in alternaPve formats (e.g. Braille, large print, audio).
- Please refer to checklists Man 1 Part 1 (operational issues) and Part 2 (site and surroundings) for a comprehensive list of subjects to be covered by the Home User Guide.

Key assumptions for Belsize Road

A comprehensive Home User Guide will be prepared.

Responsibility: **Contractor**

Sustainable Home Assessments

Management Man 02 | Considerate Constructors Scheme

0 / 2

(contribution to total score: 0.00)

Requirements

Credits are awarded based on registration of the project under the Considerate Constructors Scheme and the achievement of a high score.

Credits	Score under Considerate Constructors Scheme
1	More than 24 (and at least 3 in every section)
2	More than 32 (and at least 4 in every section)

Important notes

It is possible to achieve these credits with an alternaPve scheme to the Considerate Constructors Scheme. For more details, please refer to the Code for Sustainable Homes technical guidance.

Key assumptions for Belsize Road

Credit not targeted.

Responsibility: **Contractor**

Sustainable Home Assessments

Management Man 03 | construction site impacts

0 / 2

(contribution to total score: 0.00)

Requirements

Credits are awarded based on the procedures put in place on site in order to manage the construction site in a manner that miPgates environmental impact.

Procedures can cover the following items:

1. CO_2 production or energy use arising from site activities
2. CO_2 or energy use arising from commercial transport to and from site
3. Water consumption from site activities
4. Best practice policies in respect of air (dust) pollution arising from site activities
5. Best practice policies in respect of water (ground and surface) pollution
6. 80% of site timber to be reclaimed, re–used or responsibly sourced

Credits	Items covered by a procedure
1	Two or more
2	Four or more

Important notes

The documentary evidence required post--construction may include:

- Measurement/consumption records
- Graphs comparing consumption with targets
- Delivery records
- Site procedures for minimising air/dust and water pollution

Key assumptions for Belsize Road

Credit not targeted

Responsibility:

Management Man 04 | Security

2 / 2

(Contribution to total score: 2.22)

Requirements

In order to achieve these credits, the following requirements must be complied with:

An Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor {CPDA) from the local police force must be consulted at the design stage and their recommendations incorporated into the design of the dwelling.

+

Section 2 - Physical Security from 'Secured by Design - New Homes' must be complied with.

Important notes

Secured by Design certification is not required.

Key assumptions for Belsize Road

An secured by design report has been completed and measures have and are being adopted.

Responsibility: Architect & SPD Consultant

Sustainable Home Assessments

Ecology and Land use | Eco 01 | Ecological Value of Site

1 / 1

(Contribution to total score: 1.33)

Requirements

When the development site is confirmed as land of inherently low ecological value:

By a Suitably Qualified Ecologist

or

By meeting the criteria for low ecological value set out in the CfSH Techical Guidance (Checklist Eco 1)

or

When the construction zone is confirmed of low ecological value by an ecological report

+

When the land of ecological value outside of the construction zone will remain undisturbed

Key assumptions for Belsize Road:

An initial assessment will be carried out which is expected to give the development this credit as the land is of low ecological value.

Important notes

A site that consists of buildings, hard surfaces, car parking or other such construction which has been derelict for more than two years cannot achieve the credit unless it can be verified by a suitably qualified ecologist that the site is of low or insignificant ecological value.

Responsibility: Developer/Ecologist

Sustainable Home Assessments

Ecology and Land use  Eco 02 | Ecological enhancement

0 / 1

(contribution to total score: 0.00)

Requirements

This credits is achieved if:

- A suitably qualified ecologist has been appointed;
- The developer adopts **all key recommendaBons** and **30% of addiBonal recommendaBons** made by the ecologist in order to posiPvely enhance the ecology of the site.

Important notes

The development site is the whole site up to and including the boundary.

Key assumptions for Little Ilford Lane:

An ecologist will not be employed

Responsibility:

Sustainable Home Assessments

Ecology and Land use | Eco 03 | Protection of ecological features

1 / 1

(contribution to total score: 1.33)

Requirements

If 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.

or

If the site has been classified as having low ecological vale AND no features of ecological value have been identified.

Key assumptions for Belsize Road

This can credit is likely to be achieved based on the site having a low ecological value.

Important notes

If a suitably qualified ecologist has confirmed that a feature can be removed because of its insignificant ecological value or where an arboriculturalist has confirmed a feature can be removed owing to poor health/condition (e.g. diseased trees which require felling for health and safety and/or conservation reasons), the credit can be achieved provided all other features are adequately protected in accordance with the ecologist's recommendations.

Responsibility: **Contractor**

Sustainable Home Assessments

Ecology and Land use | Eco 04 | Change in ecological value of site

0/ 4

(contribution to total score: 0.00)

Requirements

Credits are awarded based on the impact on the site's ecological value.

Credits	Impact on site's ecological value *(qualita:ve)*	Impact on site's ecological value *(quan:ta:ve)*
1	Minor negative change	-9< change ≤ -3species per hectare
2	Neutral	-3< change ≤ +3 species per hectare
3	Minor enhancement	+3 < change ≤ +9 species per hectare
4	Major enhancement	+9 species per hectare < change

Important notes

The ecological value of derelict sites is time dependent; a linear scale has been used to determine intermediate values between zero ecological value at 1 year from dereliction/demolition to a value at 30 years based on marginal upland figures. This presents a worst case figure which can be amended on the advice of a suitably qualified ecologist.

Key assumptions for Belsize Road:

Responsibility: Developer/Architect

Sustainable Home Assessments

Ecology and Land use Eco 05 | Building footprint

2 / 2

(contribution to total score: 2.66)

Requirements

This credit rewards developments with a high density, expressed by the following ratio:

CfSH density ratio = net internal floor area : net internal ground floor area

For houses:

Credits	Requirement
1	2.5:1 ≤ CfSH density ratio
2	3:1 ≤ CfSH density ratio

For blocks of flats:

Credits	Requirement
1	3:1 ≤ CfSH density ratio
2	4:1 ≤ CfSH density ratio

For a combination of houses and flats:

Credits	Requirement
1	Area--weighted average between 2.5:1 and 3:1 ≤ CfSH density ratio
2	Area--weighted average between 3:1 and 4:1 ≤ CfSH density ratio

Key assumptions for Belsize Road

The CfSH density ratio at Belsize Roadis greater than 3:1 and therefore both credits are achievable under Eco 05.

Responsibility: -

Sustainable Home Assessments

Status of this report

This report is a Code for Sustainable Homes *Pre-assessment.* It indicates how the targeted Code Level 4 rating could be achieved at Belsize Road.

Its aim is to ensure that the most relevant CfSH credits at this stage (and particularly the mandatory credits) are taken into account in the design. These are summarised below:

- The dwellings must be at least 25% better than Part LIA 2010. It is reliant on an airtight and efficient envelope including triple-glazed windows, efficient services; MVHR, low energy lighting, a solar PV installation and a highly insulated building fabric
- The average water consumption must not exceed 105 litres/person/day.
- Internal and external storage space will be provided for recyclables and general waste
- The green guide rating of materials should influence the selection of materials;

Based on the assumptions summarised in this Pre-assessment report, a score of 68.81% could be achieved. The project can achieve a code level 4.

Next steps

Current stage	*RIBA Stages E/F*	*RIBA Stages K/L*
Pre-assessment	Design Stage Assessment + Interim certificate delivered by the BRE	Post Construction Review + Final certificate delivered by the BRE

The project team and contractor should always work with reference to the Code Pre-assessment and technical guidance when undertaking design changes.

The technical guidance to be referred to is the Nov 2010 edition and it is available at:

https://www.gov.uk/government/publications/code-for sustainable-homes-technical-guidance

Three methodologies are recommended for managing design risks:

- A dedicated architectural series of Code for Sustainable Homes drawings, highlighting all features installed to discharge criteria, with a CfSH credit reference;
- Credit references adjacent to any items required to discharge Code criteria, listed in specifications and RIBA stage summary documents e.g. display energy device to provide information on electricity and primary heating fuel (CfSH Credit Ref: Ene 3).
- The CfSH score should be reviewed periodically to reflect changes.