

BREEAM 2014 NEW CONSTRUCTION PRE-ASSESSMENT OF BLOCK F



Block F | BREEAM UK 2014 New Construction Pre-assessment

Block F office building at the Chocolate Factory is targeting an **Excellent rating** under the **BREEAM UK New Construction 2014 – Fully Fitted methodology**.

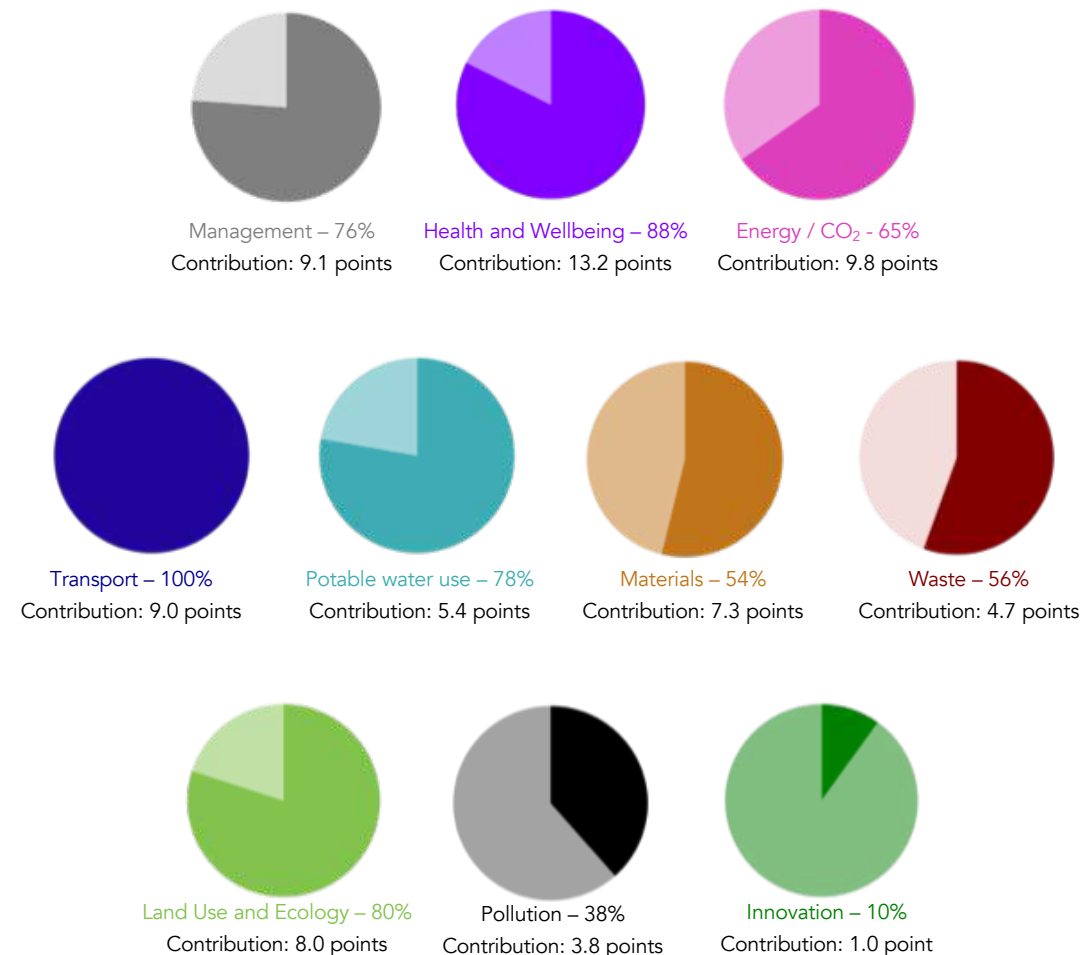
This pre-assessment, which has been prepared by Etude on behalf of Workspace allows an initial evaluation of the likely rating to be achieved under a formal assessment. It indicates that a rating of Excellent can be achieved. The following targeted credits should particularly be noted:

- The building's energy performance should be at least 20% better than Part L 2013 through an energy efficient envelope, efficient services (most importantly ventilation and lighting), connection to the central energy centre and, potentially, a PV system;
- Water-efficient fittings, a leak detection system and flow control devices coupled with isolation valves should reduce water consumption;
- Cyclist facilities (including showers and changing facilities) should be provided;
- Best practice procedures should be put in place to manage the environmental impact of construction (e.g. Considerate Constructors Scheme, Monitoring) and of materials (Green Guide, Responsible sourcing);
- Cyclist safety and consultation on Secured by Design should inform the design.

Based on the assumptions summarised in this pre-assessment report, a score of 71.4% is achieved, i.e. 1.4% above the minimum score required to achieve a rating of Excellent under BREEAM 2014 (i.e. 70%).

The figure below is a graphical summary of the proportion of credits targeted compared with the credits available in the category and its contribution to the score.

Block F – BREEAM New Construction 'Excellent'



The Chocolate Factory | BREEAM 2014 Refurbishment | Context

Workspace is seeking to redevelop the Chocolate Factory and adjacent buildings in order to provide a mixed use development comprising approximately 10,657 sqm of commercial floorspace (flexible use classes A1, A3, B1, D1 and D2) and 230 new dwellings (mix of 1, 2, 3 & 4 bed units). Block F (the new commercial building) is targeting a BREEAM Excellent rating.



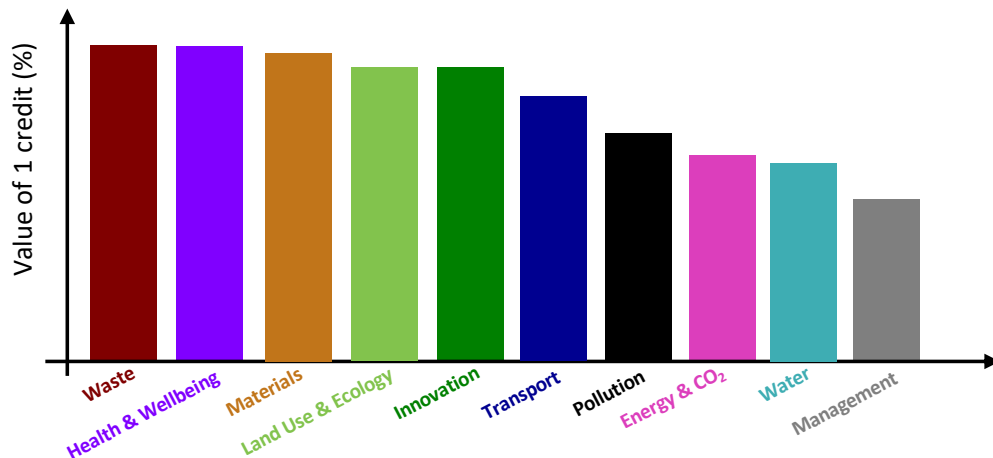
This BREEAM pre-assessment focuses on the new commercial building (Block F), which is targeting a BREEAM 'Excellent' rating.

The Chocolate Factory | BREEAM 2014 New Construction | Context

BREEAM (2014) is an Environmental Assessment Methodology developed and administered by the BRE and is aimed at new constructions. Its purpose is to reduce the office's impact on the environment by:

- Incorporating beneficial management processes (e.g. considerate construction);
- Improving **health and wellbeing** (e.g. comfort, amenity, accessibility)
- Reducing **energy use and CO₂ emissions**;
- Promoting sustainable modes of **transport**;
- Reducing **potable water use**;
- Promoting responsibly sourced **materials** with the lowest environmental impact;
- Managing construction and operational **waste**;
- Enhancing the site's **ecology**;
- Minimising pollution.

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



There are five BREEAM ratings depending on the overall score and whether the specific mandatory credits have been met.

BREEAM 2014 Rating	Minimum score	Number of minimum mandatory requirements
Outstanding	85%	11
Excellent	70%	11
Very Good	55%	5
Good	45%	3
Pass	30%	1

It should be noted that many credits require actions to be carried out by specific design stages in order to be awarded. BREEAM 2014 refers to the updated RIBA Plan of Work 2013 stages.

The Block F at the Chocolate Factory are targeting an Excellent rating.

Caution

This document is a BREEAM 2014 pre-assessment report. Its aim is to indicate which credits could be targeted in order to achieve an 'Excellent' 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 BREEAM Technical Manual. The latest version (SD5076 – 5.0: 2014) of this manual has been used to prepare this pre-assessment and can be obtained:

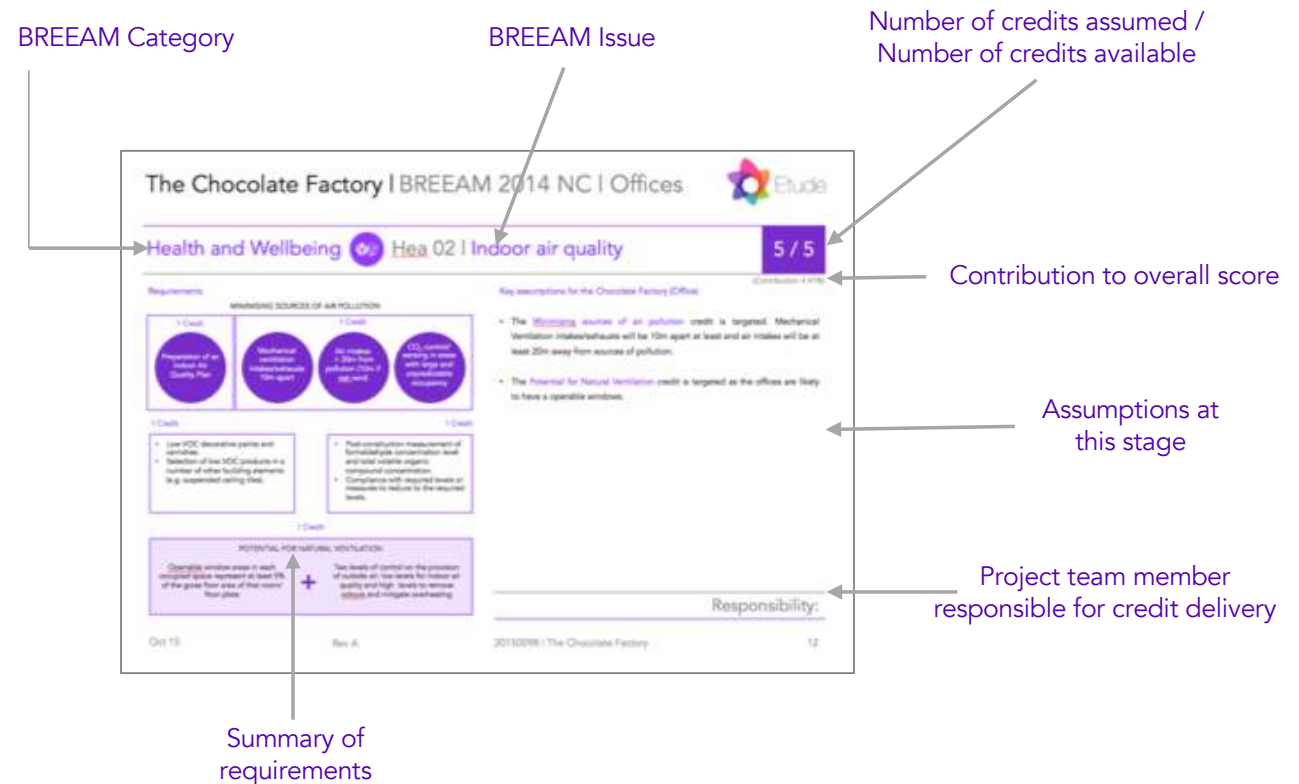
- at <http://www.breeam.org/page.jsp?id=109>
- by contacting Etude at london@etude.co.uk

It should also be noted that the assumptions made in this document are valid for this 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 name, its 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:



Management Man 01 | Project brief and design

2 / 4

(Contribution: 1.14%)

Requirements

STAKEHOLDER CONSULTATION

1 Credit



1 Credit

Project Delivery

Prior to completion of Concept Design (RIBA Stage 2), the project delivery stakeholders (client, occupier (if known), design team and contractor) must meet to define their roles, responsibilities and contributions at key phases of project delivery.

Third Party

Prior to completion of Concept Design (RIBA Stage 2), all relevant third-party Stakeholders have been consulted with. Consultation feedback has been used to influence or change the initial project brief and concept design.

SUSTAINABILITY CHAMPION

1 Credit



1 Credit

Design

A Sustainability Champion has been appointed during feasibility stage (RIBA Stage 1). The BREEAM performance target is formally agreed before the end of concept design (RIBA Stage 2) via a BREEAM Assessor's pre-assessment report

Monitoring Process

The 'Design' requirements are met

The Sustainability Champion is appointed to monitor the progress of the design against the BREEAM performance target and formally report to the client and design team.

Key assumptions for the Chocolate Factory (Block F)

The Project Delivery Consultation and Third Party Consultation credits are targeted:

- Project Delivery - Roles and responsibilities between Workspace, the design team and other relevant 'delivery' stakeholders (e.g. Workspace project manager);
- Third Party – Consultation should be documented in a Consultation Plan identifying all key third-party stakeholders. Feedback should be recorded and influence the design.

It is very important that the above consultation credits are documented in the formal manner required by BREEAM, and must cover the content required by the BREEAM guidance.

The Sustainability Champion credits are not targeted.

Responsibility: **Workspace + Barton Willmore**

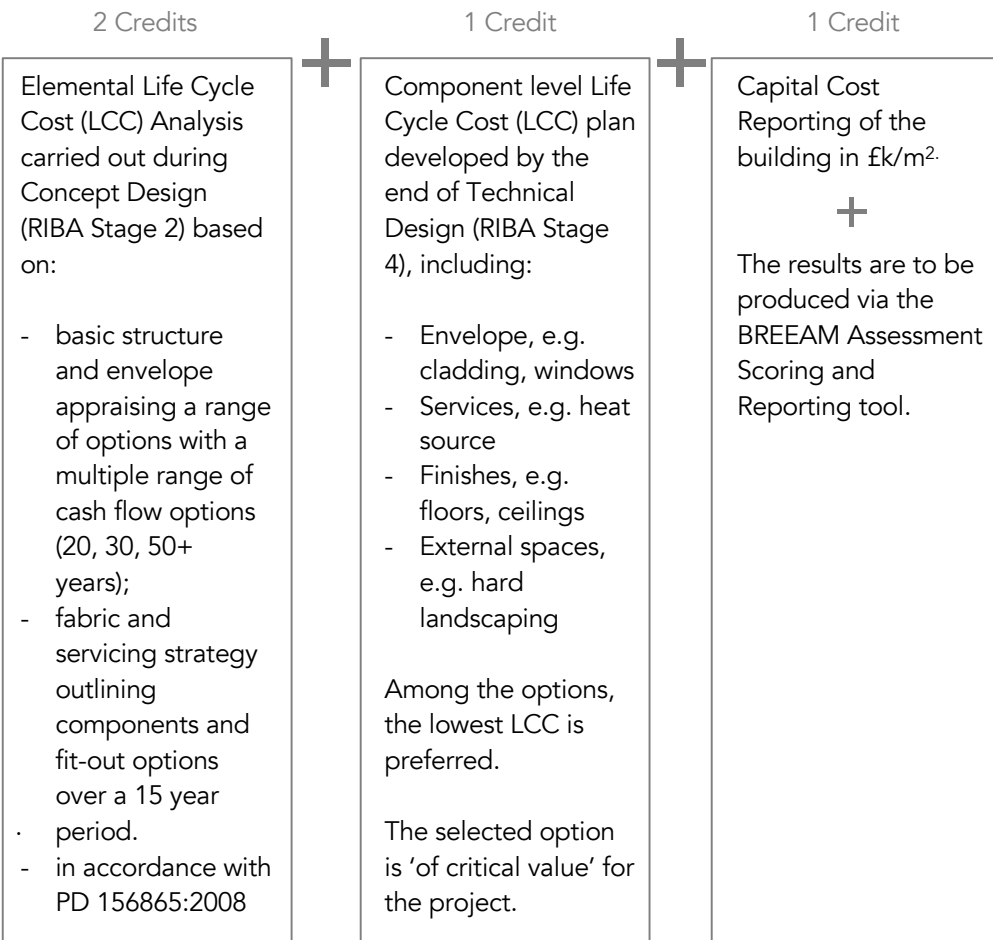
Management Man 02 | Life cycle cost and service life planning

1 / 4

(Contribution: 0.57%)

Requirements

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



Key assumptions for the Chocolate Factory (Block F)

- The first two credits require an Elemental Life Cycle Cost (LCC) Analysis to be carried out during Concept Design (RIBA Stage 2). These credits could be targeted but have not been assumed at this stage.
- The third credit would require a Life Cycle Cost (LCC) plan to be instructed and carried out prior to the end of Technical Design (RIBA Stage 4). This credit is not targeted at this stage.
- The fourth credit for reporting the capital cost of the project is targeted.

Responsibility: **Workspace**

Management Man 03 | Responsible Construction Practices

6 / 6

(Contribution: 3.43%)

Requirements

Prerequisite

All timber used on project must be legally harvested and traded.

1 Credit

1 Credit

ENVIRONMENTAL MANAGEMENT

Principal Contractor operates an environmental management system (EMS) to BS14001 or equivalent standard
+
Operates best practice pollution prevention policies and procedures on-site in accordance with PPG6

2 Credits

SUSTAINABILITY CHAMPION

A Sustainability Champion is appointed to monitor ongoing compliance with the relevant sustainability performance criteria and targets (e.g. BREEAM target rating)
+
Will be based on site or will visit regularly to carry out spot checks during Construction, Handover and Close Out Stages

2 Credits

CONSIDERATE CONSTRUCTION

Principal Contractor registers with a compliant national 'considerate construction scheme' and awarded the following scores:

1 Credit: Scores between 25 and 34 (and at least 5 in each section) – This level is a minimum mandatory requirement for achieving an 'Excellent' rating.

OR

2 Credits: Scores between 35 and 39 (and at least 7 in each section)

MONITORING OF CONSTRUCTION-SITE IMPACTS

An individual is appointed for monitoring, recording and reporting energy use, water consumption and transport data resulting from all on-site construction processes.

+

The individual must have the authority to request and access the data required (e.g. the Sustainability Champion)

Key assumptions for the Chocolate Factory (Block F)

- It is assumed that Workspace will appoint a contractor operating an EMS to BS14001 or equivalent standard;
- The building will be registered under the new Considerate Constructor Scheme and a score of more than 35 will be targeted;
- It is assumed that a sustainability champion will be appointed by the contractor to monitor on-going compliance with all relevant sustainability performance criteria, and to carry out the monitoring of construction-site impact actions.



Responsibility: Contractor

Management Man 04 | Commissioning and handover

4 / 4

(Contribution: 2.29%)

Requirements

In order to achieve these credits, the following is required to achieve compliance:

1 Credit

COMMISSIONING AND TESTING SCHEDULE AND RESPONSIBILITIES

Contractor to account for the building commissioning and testing programme, appointing suitable project team member(s) to monitor and programme pre-commissioning, commissioning, testing and re-commissioning, where necessary.

1 Credit

COMPLEX BUILDING SERVICES

Building with complex systems require a specialist commissioning manager to be appointed during the design stage (by client or contractor) to carry out design reviews and provide commission management input to the design of the systems.

1 Credit

TESTING AND INSPECTING BUILDING FABRIC

A post-construction thermographic survey and air tightness test is carried out to test and inspect the integrity of the building's fabric, continuity of insulation, thermal bridging and locate any air leakage paths.

1 Credit

BUILDING USER GUIDE

A Building User Guide (BUG) is developed prior to handover, for distribution to the building occupiers and premises managers. A training schedule is prepared for building occupiers/premises managers, timed appropriately around handover and proposed occupation plans.

Key assumptions for the Chocolate Factory (Block F)

- The Commissioning and Testing Schedule and Responsibilities credit is targeted. It is currently assumed that a suitable team member will be appointed to undertake the commissioning monitoring / programming role, and all commissioning works will be carried out in accordance with current Building Regulations, BSRIA and CIBSE guidance documents.
- The Complex Building Services credit is targeted. It is assumed that a specialist commissioning manager will be appointed during the design stage to inform the design and manage the commissioning of all complex systems.
- The Testing and Inspecting Building Fabric credit is targeted. The contractor will have to undertake the relevant fabric testing and inspection works (e.g. thermographic survey) towards the end of the construction programme.
- The Handover credit is targeted. A Building User Guide will be produced and a training plan developed for relevant premises occupiers.

Responsibility: **Contractor**

Management Man 05 | Aftercare

3 / 3

(Contribution: 1.71%)

Requirements

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

1 Credit

Aftercare Support

Operation infrastructure and resources in place to provide aftercare support to the building occupiers, which includes:

- An initial meeting between the aftercare team and the building occupiers
- On-site facilities management training
- Aftercare support for at least the 1st month with frequent (weekly) site attendance
- Longer term aftercare support for at least 12 months with a helpline, nominated individual, etc.

Energy and water consumption meters to be in place to facilitate the analysis of discrepancies between design and actual performance.

1 Credit

Seasonal Commissioning

Seasonal commissioning for all complex and simple systems to be carried out and completed over the first 12 months of substantial building occupation.

1 Credit

Post Occupancy Evaluation

A Post Occupancy Evaluation (POE) exercise is carried out one year after initial building occupation. The POE is to be carried out by an independent 3rd party.

Exemplary credit

Carry out the POE for a minimum 3 year period

(1 additional credit)

Key assumptions for the Chocolate Factory (Block F)

- The Aftercare Support credit is targeted.
- the Seasonal Commissioning credit is targeted.
- The Post Occupancy Evaluation credit is targeted. However this credit will need to be carried out by an independent third party.

Responsibility: **Workspace + Contractor**

Health and Wellbeing Hea 01 | Visual comfort

3 / 4

(Contribution: 2.65%)

Requirements

GLARE CONTROL – 1 Credit

Blinds or permanent shading on all elevations



The glare control measures do not inhibit daylight levels when direct sunlight is not on the facade

DAYLIGHTING – 1 Credit

All spaces occupied for 30 minutes or more achieve an average Daylight Factor of 2%



(a) Uniformity ratio of at least 0.3 or minimum point daylight factor of 0.7%
or
(b) View of sky from desk height
and
(c) Room 'depth criterion' met

80% of the relevant areas to comply

VIEW OUT – 1 Credit

95% of floor area in relevant areas* are within 7m of a window at eye level (1.2-1.3m).

Window area must represent more than 20% of surrounding wall area.

* e.g. frequently occupied areas including near workstations and desks.

INTERNAL AND EXTERNAL LIGHTING – 1 Credit

Internal and external lighting levels compliant with relevant codes (e.g. SLL Code 2012)



Internal lighting is zoned to allow for a high degree of localised occupant control

Exemplary credit

Daylight factor of 3% and minimum point daylight factor of 1.2%

(1 additional credit)

Key assumptions for the Chocolate Factory (Block F)

- The **Glare Control** credit is currently targeted. This could be achieved through the specification of internal blinds.
- The **Daylighting** credit is not currently targeted. However, this should be reviewed as the design progresses.
- The **View Out** credit is currently targeted.
- The **Internal and External Lighting** credit is targeted.

* Applies to spaces expected to be occupied for more than 30 minutes.

Responsibility: **Barton Willmore + FGP**

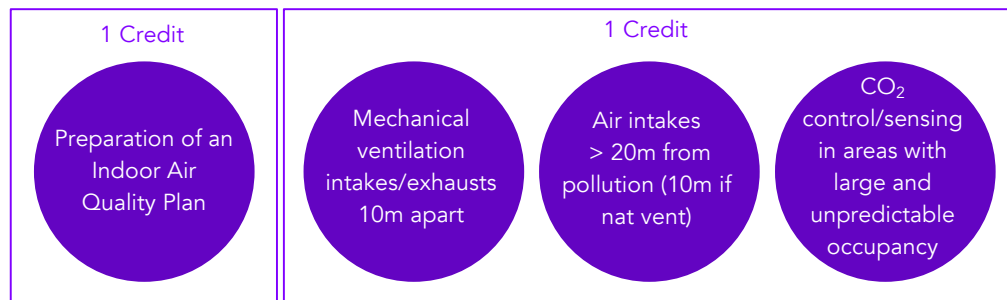
Health and Wellbeing Hea 02 | Indoor air quality

5 / 5

(Contribution: 4.41%)

Requirements

MINIMISING SOURCES OF AIR POLLUTION



1 Credit

- Low VOC decorative paints and varnishes.
- Selection of low VOC products in a number of other building elements (e.g. suspended ceiling tiles).

1 Credit

- Post-construction measurement of formaldehyde concentration level and total volatile organic compound concentration.
- Compliance with required levels or measures to reduce to the required levels.

1 Credit

POTENTIAL FOR NATURAL VENTILATION

Openable window areas in each occupied space represent at least 5% of the gross floor area of that room/floor plate



Two levels of control on the provision of outside air: low levels for indoor air quality and high levels to remove odours and mitigate overheating

Key assumptions for the Chocolate Factory (Block F)

- The [Air Quality Plan](#) credit is targeted.
- The [Minimising sources of air pollution](#) credit is not targeted as the ventilation intakes are likely to be too close to a busy road. However, this should be reviewed as the design progresses.
- The specification of low [VOC](#) finishes is targeted and should be based on the Indoor Air Quality Plan.
- The credit for carrying out [post construction air quality testing](#) (prior to occupancy) is targeted.
- The [Potential for Natural Ventilation](#) credit is targeted as the offices are likely to have operable windows.

Responsibility: **Barton Willmore + FGP + Etude**

Health and Wellbeing Hea 04 | Thermal comfort

3 / 3

(Contribution: 2.65%)

Requirements

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

1 Credit

THERMAL MODELLING

Dynamic study demonstrating that the design can deliver thermal comfort levels in accordance with CIBSE Guide A (table 1.5), particularly in terms of 'Time Out of Range' (TOR) metric with maximum and minimum temperatures for both winter and summer



1 Credit

ADAPTABILITY FOR CLIMATE CHANGE

The thermal comfort dynamic modelling study is expanded to assess a climate change conditions scenario

1 Credit

TEMPERATURE CONTROL STRATEGY

Developed for heating and cooling systems and addressing issues including thermal zoning, appropriate occupant control, system interaction and manual override

Key assumptions for the Chocolate Factory (Block F)

It is currently assumed that a thermal comfort model and strategy will be produced, in accordance with the credit criteria. Both thermal comfort credits are therefore targeted.

Please note the requirement to expand the thermal comfort dynamic modelling study to assess the impact of climate change and rising temperatures.

Important notes

- Another industry standard can be used in lieu of CIBSE Guide A if it sets a higher or more appropriate requirement.
- Generally, zoning should allow separate occupant control of each perimeter area and the central zone in areas other than atria, concourses, entrance and reception areas and ancillary spaces (e.g. circulation, plant rooms, etc.)
- CIBSE Guide A table 1.5 sets the following value for offices: 21-23°C in the winter and 22-24°C in the summer if mechanically cooled.

Responsibility: FGP + Etude

Health and Wellbeing Hea 05 | Acoustic performance

2 / 3

(Contribution: 1.76%)

Requirements

Sound insulation

Sound insulation between acoustically sensitive rooms and other occupied areas complies with Section 7 of BS 8233:2014 and pre-completion acoustic testing is carried out.



Indoor noise levels

indoor ambient noise levels comply with the design ranges given in Section 7 of BS 8233:2014 and pre-completion acoustic testing is carried out.



Reverberation

Control of reverberation, sound absorption and speech transmission index comply with sound absorption and reverberation times requirements set out in Section 7 of BS 8233:2014 and pre-completion acoustic testing is carried out.

Key assumptions for the Chocolate Factory (Block F)

The credit is currently targeted for complying with the requirements of Section 7 of BS 8233:2014 in terms of sound insulation, indoor noise levels and reverberation and a programme of pre-completion acoustic testing is carried out.

Responsibility: **Waterman**

Health and Wellbeing



Hea 06 | Safety and security

2 / 2

(Contribution: 1.76%)

Requirements

1 Credit

SAFE ACCESS

1. Dedicated cycle lanes provide direct access to cycle storage facilities and adjacent cycle paths and are designed in accordance with referenced guidance.
2. Appropriately signposted and lit footpaths provide direct access from site entrance to building entrance and adjacent footpaths/transport/amenities.
3. Drop-off areas provide direct access to pedestrian footpath(s).
4. Road raised to pavement level where there is a dedicated pedestrian crossing.
5. If dedicated delivery areas form part of the assessed development, compliance with a number of additional criteria, e.g. delivery areas are not directly accessed through general parking areas (see detailed guidance for information).

1 Credit

SECURITY OF SITE AND BUILDINGS

Consultation with a suitably qualified security specialist no later than RIBA Stage 2 and incorporation of recommendations into final design in order to comply with Secured by Design (SbD) / Safer Parking (SP) / more appropriate specific criteria.

If the consultation is later than RIBA Stage 2 this credit can still be awarded providing that all recommendations can still be incorporated within the design.

Important note

An actual SbD or SP certificate is not required.

Key assumptions for the Chocolate Factory (Block F)

The [Safe Access](#) and [Security of Site and Buildings](#) credits are both targeted.

The proposals in terms of access (pedestrians, cyclists, delivery) should be reviewed.

Haringey's Council's Crime Prevention Design Advisor should be consulted with and his/her recommendations incorporated within the design of the scheme.

Responsibility: **Barton Willmore**

Energy / CO₂ Ene 01 | Reduction of emissions

7/12

(Contribution: 3.26%)

Requirements



Minimum requirement for	EPR _{NC}	Credits
Pass Good Very Good	0.075	1
	0.15	2
	0.225	3
	0.30	4
Excellent	0.375	5
	0.45	6
	0.525	7
Outstanding	0.60	8
	0.675	9
	0.75	10
	0.825	11
	0.9 AND zero net regulated CO ₂ emissions	12

Key assumptions for the Chocolate Factory (Block F)

The the initial Part L model carried out pre-planning it is currently considered reasonable to target 7 credits at this stage. The following key parameters are assumed:

- External wall U-value: 0.20 W/m².K
- Exposed floor U-value: 0.15 W/m².K
- Roof floor U-value: 0.15 W/m².K
- Window U-value: 1.40 W/m².K
- Air permeability rate: 5 m³/h/m² at 50 Pa
- Lighting efficiency: 2.0 W/m²/100 lux
- Lighting controls: PIR and Daylight Control (dimmable luminaires)
- Cooling SEER: 4.0
- Air Handling Units SFP: 1.1 W/l/s
- Air Handling Units Heat Recovery Efficiency: 80%

Responsibility: Barton Willmore + FGP + Etude

Energy / CO₂ Ene 02 | Energy monitoring

2 / 2

(Contribution: 1.30%)

Requirements

One credit is awarded based on the extent of sub-meters provided, which should all have a pulsed output, be connected to the Building Energy Management System (BEMS), be clearly identifiable to the building user and be easily accessible.

1 Credit

MAJOR ENERGY USES

- Space Heating
- Domestic Hot Water
- Humidification
- Cooling
- Fans (major)
- Lighting
- Small power
- Other major energy-consuming systems



1 Credit

TENANTED / MAIN AREAS

- All tenanted areas
- Main function areas/departments (in the case of a single occupancy building)

Must cover at least 90% of each fuel use type.

Important notes

- If sub-metering is provided for each floor plate, it is acceptable to combine lighting and small power in a single sub-meter on each floor plate.
- 'Other major energy-consuming systems may include kitchen plant, cold storage, lifts.
- For a development consisting of small units a single meter per unit is sufficient to achieve this credit.

Key assumptions for the Chocolate Factory (Block F)

The Energy monitoring credits will both be targeted. Sub-meters connected to the BEMS will enable the following energy uses to be monitored:

- Space Heating
- Domestic Hot Water
- Cooling
- Lighting
- Major fans and pumps
- Small power
- Other major energy-consuming systems (e.g. catering areas)

The different departments will also be separately metered.

Responsibility: FGP

Energy / CO₂ Ene 03 | External lighting

1 / 1

(Contribution: 0.65%)

Requirements

All external lighting systems must meet the below requirements:

The average initial luminous efficacy of the external light fittings within the construction zone is not less than 60 luminaire lumens per circuit Watt.



All external light fittings are automatically controlled for prevention of operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.

OR

If there is no external lighting, this credit can be awarded by default.

Key assumptions for the Chocolate Factory (Block F)

This credit will be targeted and the requirements (both in terms of lighting efficacy and controls) will be included in the specifications.

Responsibility: FGP

Energy / CO₂ Ene 04 | Low carbon design

2 / 3

(Contribution: 1.96%)

Requirements

PASSIVE DESIGN¹

1 Credit

PASSIVE DESIGN ANALYSIS AT RIBA STAGE 2

The project carries out a building specific analysis of passive design measures to minimise the demand for heating, cooling, mechanical ventilation, lighting and other uses in order to achieve a meaningful reduction in CO₂ emissions.



1 Credit

FREE COOLING

The passive design analysis includes an assessment of free cooling strategies. At least one strategy is implemented into the design of the building to result in there being no significant use of any active cooling systems.

LOW AND ZERO CARBON FEASIBILITY STUDY

1 Credit

LZC FEASIBILITY STUDY AT RIBA STAGE 2²

Low or Zero Carbon (LZC) energy source feasibility study covering various aspects including life cycle cost and payback + Specification of recommended technology.

¹ To target these credits the Hea 4 – Thermal Comfort credit must also be achieved.

² The LZC feasibility study can be carried out after RIBA Stage 2 however additional criteria would need to be satisfied.

Key assumptions for the Chocolate Factory (Block F)

The Energy Strategy to be submitted in support of the planning application should cover these areas. It includes a **Passive Design analysis** and a **LZC Feasibility Study** as they need to be undertaken at Stage 2.

The Passive Design analysis has investigated the impact of various architectural decisions on energy performance (e.g. façade design).

Solar PV system



Responsibility: FGP + Etude

Energy / CO₂ Ene 06 | Energy efficient transportation

3 / 3

(Contribution: 1.96%)

Requirements

1 Credit ENERGY CONSUMPTION

Analysis of transportation demand and usage patterns to determine the optimum number and size of lifts (including counter-balancing ratios), escalators and/or moving walks.

Assessment of energy consumption and **selection** of strategy/system with the lowest energy consumption.



2 Credits ENERGY EFFICIENT FEATURES

LIFTS specified must have the 3 energy efficient features:

- a) Stand-by operation during off-peak periods
- b) Energy efficient lighting, display lighting and lighting controls
- c) Drive controller capable of variable-speed, variable-voltage, variable frequency control of the drive motor

Regenerative drive units must also be specified where they are demonstrated to save energy

FOR ESCALATORS, specification of either of the following energy efficient features:

- a) Stand-by operation and auto-walk
- b) Load sensing device coupled with variable speed drive

Key assumptions for the Chocolate Factory (Block F)

- The **Traffic Analysis and Selection** credit is targeted: a traffic analysis will be undertaken and an assessment of the lifts' energy consumption carried out in order to specify the most energy efficient system.
- The **Energy Efficient Specifications** credit is also targeted. It is assumed that the following three key energy efficient features will be included in the lifts' specifications:

- a) Stand-by operation during off-peak periods;
- b) Energy efficient lighting, display lighting and lighting controls;
- c) Drive controller capable of variable-speed, variable-voltage, variable frequency control of the drive motor;

Additionally where a regenerative drive unit can be demonstrated to save energy, this will also be specified.

Important note

Any lift with a rated speed greater than 0.15 m/s must be assessed inclusive of passenger, impaired mobility lifts, goods and vehicle.

Responsibility: FGP

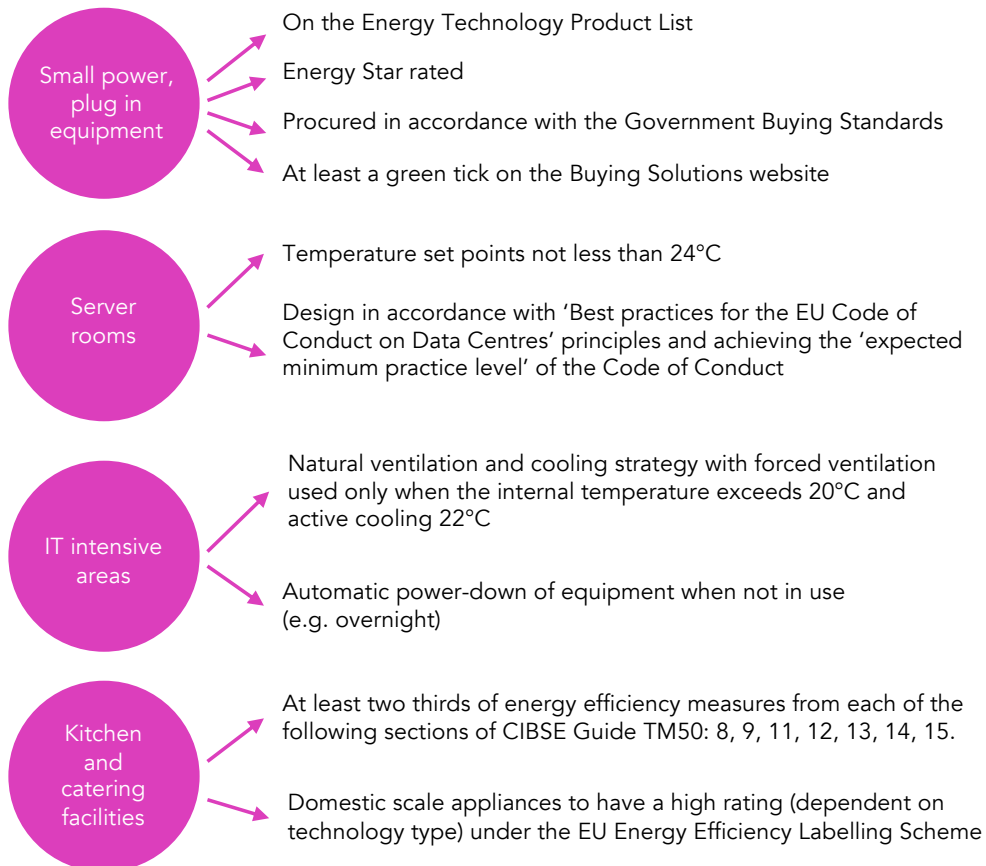
Energy / CO₂ Ene 08 | Energy efficient equipment

0 / 2

(Contribution: 0.00%)

Requirements

2 credits are awarded if energy efficient equipment is specified for those functions below which will be responsible for the significant majority of unregulated energy consumption in the building:



Key assumptions for the Chocolate Factory (Block F)

Both credits have been assumed not to be targeted. All relevant equipment installed during the fit-out works, and provided by the tenant, should be procured to the appropriate energy efficiency standard in order to meet these requirements.

This requirement will need to be included as a contractual requirement with the tenant if to be targeted.

Responsibility: **Workspace + Tenant**

Transport Tra 01 | Public transport accessibility

3 / 3

(Contribution: 3.33%)

Requirements

Credits are awarded based on the following criteria:

Distance to/from public transport node(s) ¹

Public transport type(s), e.g. bus, rail

Average number of services per hour ²

These criteria are inputted into the BREEAM Tra 1 calculator which determines the site's public transport Accessibility Index (AI) ³. From this AI, the following number of credits are achievable for an office building:

Public Transport Accessibility Index (AI)	Number of credits
≥ 2	1
≥ 4	2
≥ 8	3

Important notes

¹ Any bus stop within 650m and any railway station within 1000m of the main entrance

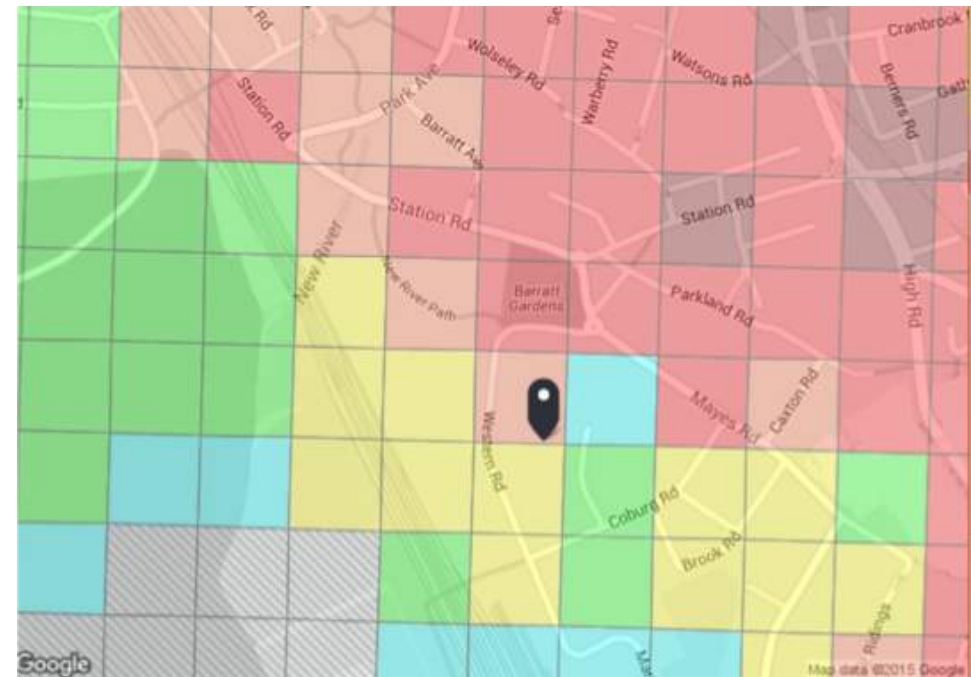
(safe pedestrian route)

² Number of stopping services per day divided by the number of hours within the operating period of the building

³ For buildings in Greater London, the AI can be calculated using TfL's Planning Information Database available at www.webptals.org.uk

Key assumptions for the Chocolate Factory (Block F)

The location of the site has been inputted in the TfL Planning Information Database.



The site's PTAL is 4 and the Accessibility Index is 18. Therefore, 3 credits can be achieved.

Responsibility: **SDG**

Transport Tra 02 | Proximity to amenities

1 / 1

(Contribution: 1.00%)

Requirements

Up to 1 credit is available if the building is located in an area that meets the following requirements

1 Credit

At least 3 amenities (including at least 2 core amenities) are within a 500m walking distance from the building.

CORE AMENITIES

Grocery
or food
outlet

Leisure /
sport
facilities

Cash
machine

OTHER AMENITIES

Outdoor
space

Postal
facilities

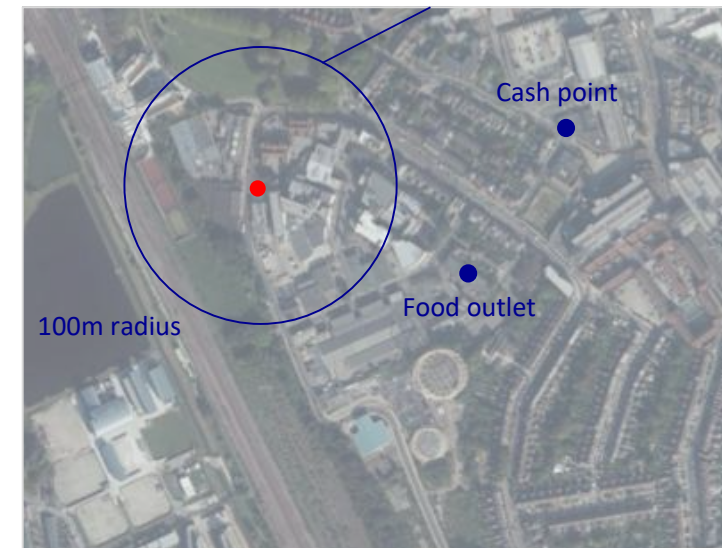
Community
facilities

Pharmacy

Child care

Key assumptions for the Chocolate Factory (Block F)

The map below illustrates the position of the site and the initial assessment of the amenities.



The site is located within a 500m walking distance of an outdoor space. It is assumed that a food outlet and a cash machine are available within 500m.

Responsibility: **Barton Willmore**

Transport Tra 03 | Cyclist facilities

2 / 2

(Contribution: 2.00%)

Requirements

These credits are awarded on the basis of the provision of cyclist facilities, i.e:

CYCLE SPACES + SHOWERS + CHANGING FACILITIES + LOCKERS + DRYING SPACE

1st credit

At least 1 cycle space per 10 building occupants (staff members) provided



2nd credit

At least 2 cyclist facilities for staff members (showers, changing rooms, lockers and drying space

Important notes

- The majority of the cycle spaces should ideally be within 50m of a building entrance.
- One shower must be provided for every 10 cycle spaces (however, any development with more than 8 showers will comply).
- The number of lockers must be at least equal to the number of cycle spaces and they should be located adjacent to the changing facilities.
- The drying space must be a designated space with adequate heating/ventilation (not a plant room).
- The requirements can be reduced by 50% when more than half of the credits have been achieved under Tra 01.

Key assumptions for the Chocolate Factory (Block F)

The number of future building users is unknown at this stage. However, if the building accommodates 81 people (estimate based on a net floor area of 729 sqm and the BREEAM occupancy rate of 0.111 sqm/person) the following would be required to achieve **two credits**:

- 5 cycle spaces

AND at least two of the following cyclist facilities:

- 1no showers
- Associated changing facilities and drying spaces
- 5 lockers

It is currently assumed that 2 credits can be targeted.

Responsibility: Barton Willmore + SDG

Transport Tra 04 | Maximum car parking capacity

2 / 2

(Contribution: 2.00%)

Requirements

Credits are awarded based on the number of car parking spaces per building users, in accordance with the requirements summarised in the table below (which vary depending on the building Public Transport Accessibility Index):

Public Transport Accessibility Index (AI)			Number of credits
AI < 4	4 ≤ AI < 8	8 < AI	
1 space / 3 users	1 space / 4 users	1 space / 5 users	1
1 space / 4 users	1 space / 5 users	1 space / 6 users	2

Important notes

- Parking spaces provided for disabled users, motorbike and car sharing can be excluded as long as they are dedicated for that use (i.e. sized accordingly and signed/marked).

Key assumptions for the Chocolate Factory (Block F)

Assuming the number of building users would be approximately 81 (estimate based on a net floor area of 729 sqm and the BREEAM occupancy rate of 0.111 sqm/person), a maximum of 17 car parking spaces would achieve 1 credit or a maximum of 14 car parking spaces would achieve 2 credits.

It is therefore assumed that 2 credits can be targeted as no car parking is planned.

Responsibility: SDG + Barton Willmore

Transport Tra 05 | Travel plan

1 / 1

(Contribution: 1.00%)

Requirements

One credit is awarded if a travel plan has been prepared **before the end of the design** in accordance with the following requirements:

1. It considers **all types of travel** relevant to the building and its users.
2. It takes into consideration the findings of a **site-specific transport survey and assessment** which takes into consideration the opinion of existing building users towards cycling and walking (if applicable), travel patterns and transport impact of the future users, disabled access, public transport and cyclist facilities.
3. It includes a **package of measures to minimise car-based travel patterns**, e.g.
 - Parking priority spaces for car sharers;
 - Cycle storage and facilities;
 - Information about public transport or car sharing in the lobby area.
4. The **Occupier must be involved with developing the travel plan** and will be supported by the building's management team.

Key assumptions for the Chocolate Factory (Block F)

A transport assessment will be prepared for the scheme.

A full Travel plan will also be produced which will meet BREEAM and TfL standards.

Responsibility: **SDG**

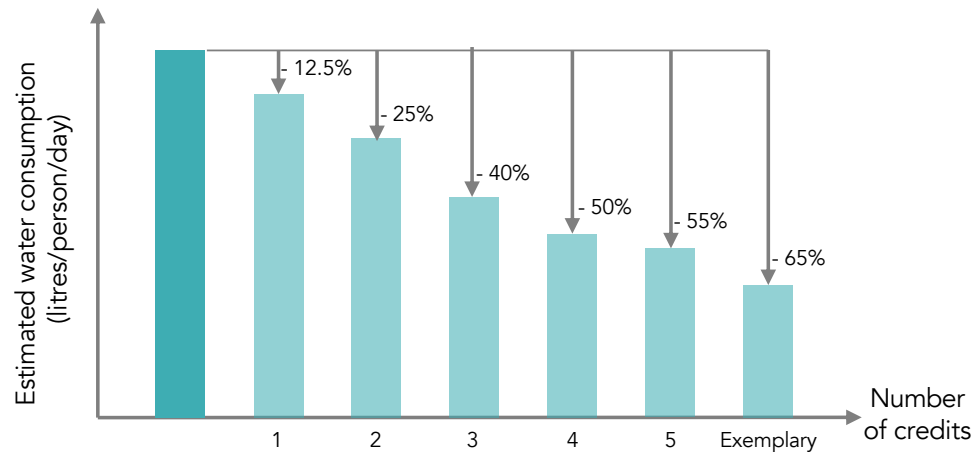
Water Wat 01 | Water consumption

3 / 5

(Contribution: 2.33%)

Requirements

Credits are awarded based on the water efficiency of WCs, urinals, taps, showers and dishwashers (if provided). Up to 5 credits can be achieved depending on the calculated reduction over the 'baseline performance' using the BREEAM Wat 01 calculator:



Important notes

- A rainwater/greywater recycling system specified and installed in accordance with BS8515:2999 / BS8525-1:2010 can be used to off-set non potable water demand as long as a minimum level of water efficiency has been achieved.
- Water consumption figures inputted into the BREEAM Wat 01 Calculator need to be collected from manufacturers' product information.

Key assumptions for the Chocolate Factory (Block F)

The following flow rates are assumed at this stage. This would represent a reduction in water consumption over the BREEAM baseline of approximately 40% and therefore 3 credits can be targeted.

40% reduction on benchmark

- Showers: 6 litres/min
- Taps: 3 litres/min
- WC: dual flush 4 / 2.6 litres
- Urinal: 1.5 litres/bowl/hour
- Kitchen Taps: 5 litres/min
- Dishwasher: 5 litres / cycle (commercial size)

Responsibility: FGP + Barton Willmore

Water Wat 02 | Water monitoring

1 / 1

(Contribution: 0.78%)

Requirements

This credit is awarded if water consumption can be monitored and managed:

Water meter on the
mains water supply

Water-consuming
plant/areas sub-
metered ¹

All meters with a
pulsed output to
enable BMS
connection

Key assumptions for the Chocolate Factory (Block F)

A water meter connected to the BMS will be installed on all mains water supply to the building.

Important notes

¹ Plant / areas are considered 'water-consuming' when they are consuming more than 10% of the building's total water demand.

The sub-meter requirement does not apply where a building has only one or two small sources of water demand (e.g. office with sanitary fittings and small kitchens) or where the building has two sources of water demand with one significantly larger than the other one and masking it.

Responsibility: FGP

Water Wat 03 | Water leak detection and prevention

2 / 2

(Contribution: 1.56%)

Requirements

1 Credit

LEAK DETECTION SYSTEM

Capable of detecting a major water leak on the mains water supply within the building and between the building and the utilities water meter.

The system must be audible and programmable.

1 Credit

FLOW CONTROL DEVICES

One of the following types of flow control device is fitted to each WC area in order to control water supply:

- time controller
- volume controller
- presence detector and controller
- central control unit

Key assumptions for the Chocolate Factory (Block F)

- The **Leak Detection System** credit is targeted. An audible, programmable and compliant system will be specified.
- The **Leak Prevention** credit is targeted. Each WC area will be fitted with a water supply control device to prevent leaks.

Important notes

- A system that directly detects water leakage along part or the whole length of the water supply system is not necessarily required as the credit can usually be achieved by a system which detects higher than normal flow rates at meters and/or sub-meters.
- If there is an existing utility water meter, a separate flow meter may be required just after the utility meter, unless the utility company agrees to some form of leak detection being installed on their meter.
- Flow control devices are not required for each individual sanitary appliance but for each WC block. Their aim is to isolate water supply to each block.

Responsibility: FGP

Water Wat 04 | Water efficient equipment

1 / 1

(Contribution: 0.78%)

Requirements

IRRIGATION FOR INTERNAL/EXTERNAL PLANTING AND/OR LANDSCAPING

Compliance with any one of the following:

- a) Drip feed subsurface irrigation with soil moisture sensors, zoning and rainstat
- b) Rainwater/greywater supply
- c) No irrigation required other than precipitations
- d) Specification of species with no irrigation requirements
- e) Manual watering only



VEHICLE WASH SYSTEM

The system uses a full or partial reclaim unit with at least one of the following:

- a) Hydro-cyclone
- b) Sand or activated carbon filter
- c) Sump tank
- d) Three chamber interceptors
- e) Cartridge filter or bag filter

Important notes

Where there is no planting or vehicle wash facilities this issue is not applicable.

If there are any additional uses of non-regulated water use, these will need to be assessed.

Key assumptions for the Chocolate Factory (Block F)

It is assumed that any landscaping and planting will be irrigated manually. Therefore, this credit can be targeted at this stage.

There will be no vehicle wash system.

Responsibility: FGP

Materials Mat 01 | Life cycle impacts

3 / 5

(Contribution: 3.12%)

Requirements

Credits are awarded according to the Green Guide rating of materials used in the building (see www.thegreenguide.org.uk) for the following building elements:

- External and internal walls
- Windows
- Roof
- Upper and ground floors (including separating floors)
- Floor finishes/coverings



Green guide rating of each building element

BREEAM MAT 01
Calculator

Number of Mat 01 points

Number of credits

Number of Mat 01 points	≥ 4	≥ 5	≥ 8	≥ 10	≥ 12
Number of credits	1	2	3	4	5

- When an independently verified third party Environmental Product Declaration (EPD) is available for a material/product which forms part of an assessed building element, this can be used to increase this element's Mat 01 performance.
- Retained and re-used elements as part of the structure are A+ rated.

Key assumptions for the Chocolate Factory (Block F)

It is considered that 3 credits under Mat 01 is a reasonable assumption at this stage.

Example of Green Guide ratings:

Element	Reference	Description	Rating
Roof	1212540050	In situ reinforced concrete slab with 50% GGBS and 20% recycled coarse aggregate, vapour control layer, insulation, TPO single ply roofing membrane	B
External walls	1206470004	Brickwork, cement mortar, insulation, cement-bonded particle board, light steel frame, vapour control layer, plasterboard, paint	A+
Floor finishes	821570017	Plain or decorative linoleum (EN 548). FCSS 23/32	A+
Floors	807280010	Power-floated in situ concrete slab on "shallow" profiled metal decking	A+
Windows	1231500011	Powder coated aluminium window, (profile <0.9kg/m), double glazed	A+

Responsibility: **Barton Willmore**

Materials Mat 02 | Hard landscaping and boundary protection

0 / 1

(Contribution: 0.00%)

Requirements

Where at least 80% (by area) of all external hard landscaping and boundary protection achieves at least an A rating.

External hard
landscaping and
boundary protection

At least
an
A rating

Important notes

- External hard landscaping includes parking areas but excludes access roads and vehicle maneuvering areas.
- Any natural boundary protection (e.g, hedging) should be awarded an A+ rating.
- Where no more than 20% of the area of the existing hard landscaping and boundary protection elements are subject to minor alterations, repair or maintenance, these elements can be awarded an A+ rating.
- Where the building has neither hard landscaping nor boundary protection the credit can be awarded by default.

Key assumptions for the Chocolate Factory (Block F)

The following materials, if used for external landscaping, would enable the achievement of this credit.

Description	Element number	Green Guide Rating
Asphalt paving (75mm) over prepared recycled sub-base	824130029	A
Cement mortar wet laid UK sandstone paving flags (29mm) with no sub-bases	824130012	A

Other ratings are available for heavily trafficked and lightly trafficked areas.

The following boundary protection materials would comply.

- Concrete post and gravel board close boarded fencing;
- Galvanised weld mesh fencing with metal posts;
- Reclaimed brickwork wall 1/2 thick.

At this stage this credit is not targeted.

Responsibility: **Barton Willmore**

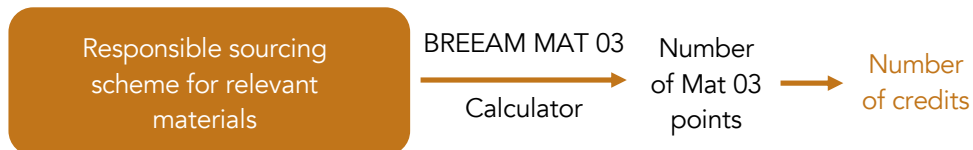
Materials Mat 03 | Responsible sourcing of materials

2 / 4

(Contribution: 2.08%)

Requirements

Where **new** materials are being introduced in any **building element**, up to 3 credits are achievable if at least 80% of the materials that make-up that element comply with tier levels 1-8 for responsible sourcing. **One further credit** can be awarded if the principle contractor is committed to having a Sustainable Procurement Plan in place.



Credits	% of available points achieved
1	≥ 18%
2	≥ 36%
3	≥ 54%
Exemplary	≥ 70%

Example of materials (the relevant EMS scope will vary depending on materials)

Brick	Concrete	Glass	Plastics and rubber
Metals	Timber	Wood panels	Plasterboard and plaster
Insulation	Insulation materials	Building stones	Resin-based composite

Additionally (**and for all rating levels**) all timber used in the project must be sourced in accordance with the UK Government's Timber Procurement Policy.

The **Sustainable Procurement Plan** credit is targeted.

At least **36%** of available points should be achieved.

Examples of Compliant Schemes	Tier level
BES6001 (or similar) 'Excellent' / 'Very Good' / 'Good' / 'Pass'	2/3/4/5
Re-used materials	3
Forest Stewardship Council (FSC)	3
Programme for the Endorsement of Forest Certification (PEFC)	3
Canadian Standards Association (CSA) Chain of Custody Scheme	3
Recycled materials	6
Certified EMS for the Key Process and Supply Chain	6
Certified EMS for the Key Process	7

Confirmation of claims should be sought from the relevant scheme provider, many of which list on their website certified companies and products (e.g. downloadable BES 6001 certificate copies are available at www.greenbooklive.com).

Responsibility: **Barton Willmore**

Materials Mat 04 | Insulation

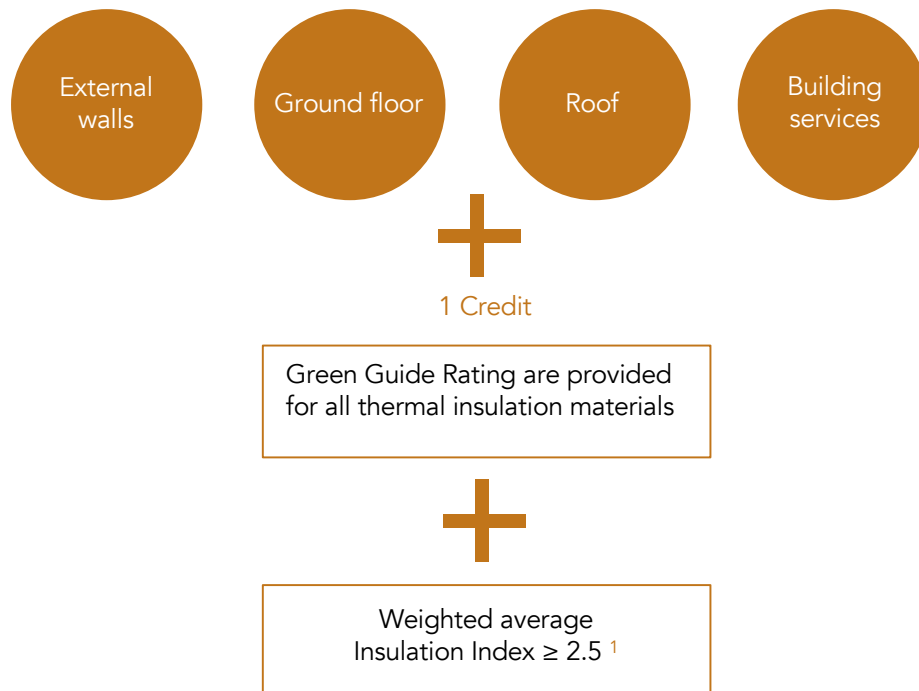
1 / 1

(Contribution: 1.04%)

Requirements

Pre-requisite

Any new insulation specified within the following building elements must be assessed:



¹ Determined using the BREEAM Mat 04 calculator. A third party Environmental Product Declaration (EPD) can be used to improve Mat 04 performance.

Key assumptions for the Chocolate Factory (Block F)

All **new insulation** specified will be **assessed using the Green Guide**.

Therefore this credit is currently being targeted under Mat 04.

For information, A-rated insulation materials under the Green Guide currently include:

- Cellular glass insulation with a density of less than 130 kg/m²
- Glass wool insulation
- EPS
- Stone wool insulation with a density of less than 100 kg/m²
- Corkboard insulation
- Sheep's wool insulation
- XPS with zero ozone depletion blowing agent

Responsibility: **Barton Willmore + FGP**

Materials Mat 05 | Designing for durability and resilience

1 / 1

(Contribution: 1.04%)

Requirements

One credit is awarded if adequate protection of exposed elements of the building and landscape will increase their durability. The following is required:

1. Areas where vehicular, trolley and pedestrian movement occur have been identified.
2. Suitable durability measures / design solutions have been incorporated in order to protect the following areas from the following effects:

Areas

Main entrances, public areas, corridors, lifts, stairs

Within 1m of internal fabric in storage, delivery, corridor, kitchen

External building façade of car parking areas and delivery areas

All external areas of the building and hard landscaping

Protection from

Effects of high pedestrian traffic

Internal vehicle/trolley movement

Potential vehicle collision

Environmental factors and materials degradation effects

Examples

Hard-wearing and easily washable floor finishes

Corridor walls specified to Severe Duty as per BS 5234-2

Bollards, barriers, raised kerbs

Anti-corrosion treatments, waterproofing, timber treatment

Key assumptions for the Chocolate Factory (Block F)

The vulnerable areas of the building will be identified and the adequate protection measures specified.

Responsibility: **Barton Willmore**

Materials Mat 06 | Material Efficiency

0 / 1

(Contribution: 0.00%)

Requirements

One credit is awarded where opportunities have been identified, and appropriate measures investigated and implemented, to optimise the use of materials in building design, procurement, construction, maintenance and end of life..

The above study is carried out by the relevant members of the design / construction team at the following RIBA stages:

- a. Preparation and Brief
- b. Concept Design
- c. Developed Design
- d. Technical Design
- e. Construction

Key assumptions for the Chocolate Factory (Block F)

This credit is not targeted.

Responsibility: -

Waste Was 01 | Construction waste management

3 / 4

(Contribution: 2.83%)

Requirements

CONSTRUCTION RESOURCE EFFICIENCY

Preparation of a compliant Resource Management Plan (RMP), which includes target benchmarks for resource efficiency



Incorporation in the RMP of procedures and a commitment to minimise the amount of non-hazardous construction waste per 100 m² (gross floor area):

1 credit

2 credits

3 credits

Exemplar

≤ 13.3 m³
or 11.1 t

≤ 7.5 m³
or 6.5 t

≤ 3.4 m³
or 3.2 t

≤ 1.6 m³
or 1.9 t



Pre-demolition audit of the existing building if demolition takes place



DIVERSION OF RESOURCES FROM LANDFILL

1 credit

Exemplar

Non-demolition
70% (volume)
or 80% (weight)

Demolition
80% (volume)
or 90% (weight)

Non-demolition
85% (volume)
or 90% (weight)

Demolition
85% (volume)
or 95% (weight)

Excavation
95% (volume)
or 95% (weight)

Key assumptions for the Chocolate Factory (Block F)

A **pre-demolition audit** will be carried out by the contractor to determine if reuse is possible and, if not, to maximise the recovery of material.

A **Resource Management Plan (RMP)** will be prepared with targets relating to:

- the minimisation of non-hazardous construction waste
- the diversion of non-hazardous demolition waste from landfill
- the diversion of non-hazardous construction waste from landfill
- the following quantified targets are assumed:

Non-hazardous
construction waste
≤ 7.5 m³ or 6.5 t /
100m² GEFA

Diversion rates from landfill

Non-demolition

70% (volume)
or 80% (weight)

Demolition

80% (volume)
or 90% (weight)

The RMP will include procedures in order to achieve the targets above.

Responsibility: **Contractor**

Waste Was 02 | Recycled aggregates

0 / 1

(Contribution: 0.00%)

Requirements

Proportion of recycled and/or secondary aggregate specified in the total high-grade aggregate



1 Credit
25%
(by weight or volume)

Exemplar
35%
(by weight or volume)

Key assumptions for the Chocolate Factory (Block F)

The use of recycled or secondary aggregates for at least 25% of high-grade aggregates is not considered likely to be achievable at this point in time.

However, it will be reviewed as the design progresses.

Proportion of recycled and/or secondary aggregate	1 Credit	Exemplar
Structural frame	15%	30%
Bitumen or hydraulically bound base, binder, and surface courses for paved areas and roads	30%	75%
Concrete road surfaces	15%	45%
Pipe bedding	100%	N/A
Building foundations	20%	35%
Granular fill and capping	100%	N/A

Recycled aggregates: obtained on site OR from construction waste processing site(s) within a 30km radius of the site (e.g. demolition waste)

Secondary aggregates: obtained from a non-construction post-consumer/industrial by-product source (e.g. PFA, recycled glass, tyres)

Responsibility: -

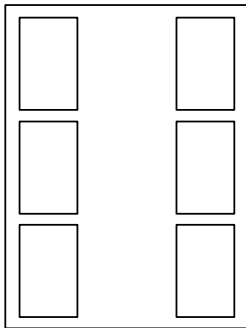
Waste Was 03 | Operational waste

1 / 1

(Contribution: 0.94%)

Requirements

Dedicated space(s)
for recyclable waste



(where appropriate)

Specific waste facility



- Of an appropriate capacity based on likely waste arisings
- At least 2m² per 1000m² for buildings < 5000 m²
- At least 10m² per for buildings ≥ 5000 m²
- Additional similar requirements where catering is provided
- Clearly labelled
- (Ideally) within 20m of a building entrance
- Accessible for collections by waste management contractors

- Static waste compactor or baler if consistent generation in volume of packaging
- Composting vessel or compostable waste storage if consistent generation in volume of organic waste for delivery to a composting facility (on-site or off-site)

Key assumptions for the Chocolate Factory (Block F)

An operational waste management strategy will be prepared. It is assumed at this stage that this credit will be achieved.

Responsibility: Etude + Barton Willmore

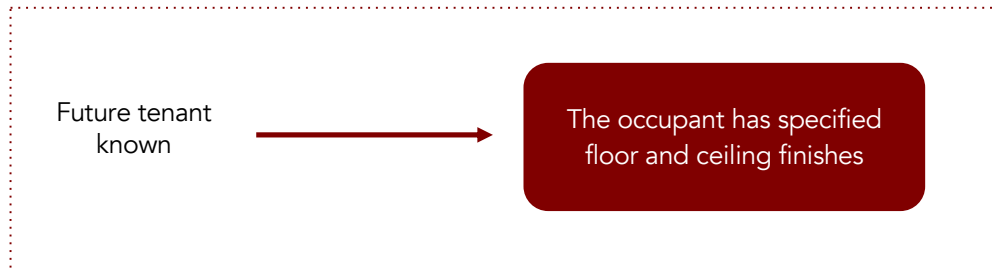
Waste Was 04 | Speculative Floor and Ceiling Finishes

1 / 1

(Contribution: 0.94%)

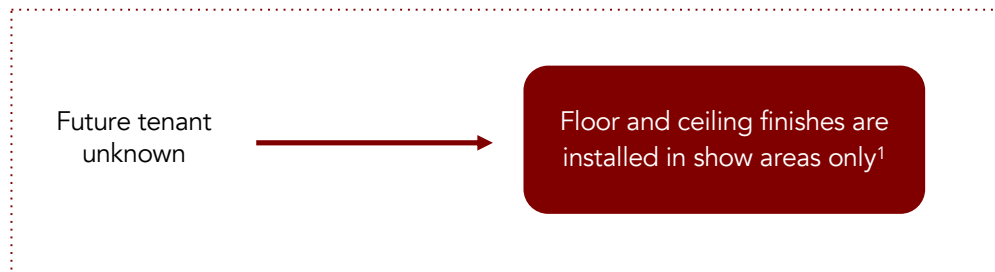
Requirements

1 credit



OR

1 credit



Important Notes:

Installed floor and ceiling finishes in show areas must be less than 25% of net lettable floor area.

Key assumptions for the Chocolate Factory (Block F)

It is assumed that the tenant will specify the floor and ceiling finishes.

Therefore, this credit is targeted.

Responsibility: **Workspace**

Waste Was 05 | Adaption to climate change

0 / 1

(Contribution: 0.00%)

Requirements

STRUCTURAL AND FABRIC RESILIENCE

Climate change adaption strategy appraisal by the end of Concept Design (RIBA Stage 2) to identify and evaluate the impact of expected extreme weather conditions arising from climate change and, where feasible, mitigate against these impacts. As a minimum the assessment should cover:

- Hazard identification and assessment;
- Risk estimation and evaluation;
- Risk management.

EXEMPLARY CREDIT

In addition to the above requirements the following credit criteria should be achieved:

- Hea 04 Thermal Comfort – Criterion 6 is achieved
- Ene 01 Reduction of Energy Use and Carbon Emissions – At least 8 credits have been achieved
- Ene 04 Low Carbon Design – The passive design credit has been achieved
- Wat 01 Water Consumption – At least 3 credits have been achieved
- Mat 05 Design for Durability and Resilience – Criterion 2 linking to material degradation has been achieved
- Pol 03 Surface Water Runoff – A minimum of 1 credit has been achieved for Flood Risk and at least 2 credits have been achieved for Surface water run-off

Key assumptions for the Chocolate Factory (Block F)

This credit is not targeted.

Responsibility: -

Waste Was 06 | Functional adaptability

0 / 1

(Contribution: 0.00%)

Requirements

One credit is awarded where a building-specific functional adaptation strategy study has been carried out by the client / design team by Concept Design (RIBA Stage 2). The function adaptation measures are to be implemented during Technical Design (RIBA Stage 4), where these are practical and cost effective.

Key assumptions for the Chocolate Factory (Block F)

This credit is not targeted.

FUNCTION ADAPTATION STRATEGY

Should consider:

1. The potential for major refurbishment, including replacing the façade.
2. Design aspects that facilitate the replacement of all major plant within the life of the building e.g. panels in floors/walls that can be removed without affecting the structure, providing lifting beams and hoists.
3. The degree of adaptability to accommodate changes in working practices.
4. The degree of adaptability to accommodate change in-use.
5. Accessibility to local services, such as local power, data infrastructure etc.

ADAPTATION IMPLEMENTATION

Should account for:

1. The feasibility for multiple/alternative building uses and area functions
2. Options for multiple building uses and area functions based on design details
3. Routes and methods for major plant replacement
4. Accessibility for local plant and service distribution routes
5. The potential for the building to be extended, horizontally and/or vertically.

Responsibility: -

Land use and Ecology Le 01 | Site selection

1 / 2

(Contribution: 1.00%)

Requirements

1 Credit

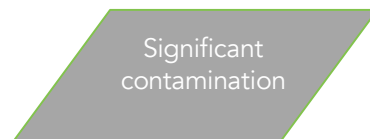
PREVIOUSLY DEVELOPED LAND



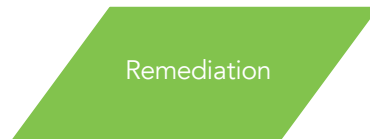
At least 75% of the proposed development footprint is on an area of land which has been previously occupied by buildings or fixed service infrastructure

1 Credit

CONTAMINATED LAND



The site is deemed to be significantly contaminated



The client or principal contractor confirms that remediation of the site will be carried out

Key assumptions for the Chocolate Factory (Block F)

The **Previously Developed Land** credit is targeted as the proposed development uses the footprint of a currently occupied site.



Responsibility: **Barton Willmore**

Land use and Ecology Le 02 | Ecological value of site and protection

2 / 2

(Contribution: 2.00%)

Requirements

When the development site is confirmed as land of inherently low ecological value and when ecological features are protected.

Key assumptions for the Chocolate Factory (Block F)

It is assumed that this credit can be achieved by default but this should be confirmed by the Ecologist.

Land within the
construction zone

Land of low
ecological
value

According to the advice of a
Suitably Qualified Ecologist

OR

Using the BREEAM checklist



Protection of all existing features of ecological value
surrounding the construction zone and site boundary area
during clearance, site preparation and construction activities,
in accordance with the SQE's recommendations and BS 42020:2013

e.g. trees of over 100mm trunk diameter, hedges, watercourses

Important notes

- If features of ecological value have been removed as part of the site clearance, this credit cannot be achieved, even if they are to be replaced.
- For sites cleared prior to purchase of the site and less than five years before assessment, the ecologist should estimate the ecological value prior to clearance using available desktop information. If impossible, the credit must be withheld.

Responsibility: **Aspect Ecology**

Land use and Ecology Le 03 | Minimising impact on existing site ecology

2 / 2

(Contribution: 2.00%)

Requirements

	1 Credit	2 Credits
Change in ecological value of the site	$-9 < x < 0$	≥ 0

Important notes

- This calculation can be carried out based on BREEAM benchmarks and procedures or by a suitably qualified ecologist.

Key assumptions for the Chocolate Factory (Block F)

An ecologist has been appointed and will advise on potential ecological enhancements

The recommendation should be adopted by the landscape architect and the architect.

Responsibility: **Aspect Ecology**

Land use and Ecology LE 04 | Enhancing site ecology

1 / 2

(Contribution: 1.00%)

Requirements

1 Credit

Appointment of a suitably qualified ecologist at RIBA Stage 1

Site survey undertaken by the end of RIBA Stage 2

Preparation of Ecology Report with recommendations on protecting and enhancing the site's ecology

Implementation of the report's recommendations in the final design and build



1 Credit

SQE confirms that the recommendations have been implemented, resulting in an ecological value increase of

Change in plant species
> + 6

Key assumptions for the Chocolate Factory (Block F)

An ecologist has been appointed and will advise on potential ecological enhancements

The recommendation should be adopted by the landscape architect and the architect.

Therefore it is currently assumed that the first credit can be achieved.

Important notes

Ecological recommendations to increase the site's ecological value may include:

- the planting of native species or those with a known attraction to local wildlife
- the installation of bird / bat / insect boxes at appropriate locations
- the integration of SuDS and biodiverse roofs
- the development of a full Biodiversity Management Plan

Responsibility: **Barton Willmore + Aspect Ecology**

Land use and Ecology LE 05 | Long term impact on biodiversity

2 / 2

(Contribution: 2.00%)

Requirements

Pre-requisite



Credits	Commitment to achieve:
1	2 of the following additional criteria
2	4 of the following additional criteria

Additional criteria

1. Creation of a new ecologically valuable habitat, appropriate to the local area
2. Nomination of a 'Biodiversity Champion' by the principal contractor
3. Site workforce trained by the principal contractor to protect site ecology
4. Actions taken to protect biodiversity are recorded by the principal contractor
5. Where flora and/or fauna habitats exist on site, consideration given to minimising disturbance in the programme.

Key assumptions for the Chocolate Factory (Block F)

The ecology report should confirm that these credits are achievable.

Responsibility: **Aspect Ecology**

Pollution Pol 01 | Impact of refrigerants

1 / 3

(Contribution: 0.77%)

Requirements

3 Credits

**NO
REFRIGERANTS**

Where the building does not require the use of refrigerants

OR

1 Credit

Direct Effect Life Cycle
CO₂ equivalent emissions
(DELCO_{2e}) < 1000
kgCO₂/kW

2 Credits

Direct Effect Life Cycle
CO₂ equivalent emissions
(DELCO_{2e}) < 100 kgCO₂/kW

OR

Refrigerant Global
Warming Potential (GWP) < 10

1 Credit

1. Systems with refrigerants in a moderately air tight enclosure or a mechanically ventilated plant room
1. Automated permanent refrigerant leak detection system OR refrigerant leakage/charge loss detection system (not based on concentration in air)
2. Automatic shutdown and pump down of refrigerant (triggered by an alarm and to either a separate storage tank or into the heat exchanger if valves are fitted)

Note: The fourth credit (grey box) can be awarded by default with small multiple systems with a refrigerant charge of less than 5 kg.

Guidance on the DELCO_{2e}

$$\text{DELCO}_{2e} = \frac{[(\text{Ref}_{\text{charge}} \times \text{Sys}_{\text{op-life}} \times (\text{L1} + \text{L2} + \text{S1} + \text{S2}) / 100) + (\text{Ref}_{\text{charge}} \times (1 - \text{Ref}_{\text{RecEff}} / 100))] \times \text{GWP}}{\text{Cooling Capacity}}$$

Where: Ref_{charge}: Refrigerant charge

Sys_{op-life}: 10 years

Ref_{RecEff}: Refrigerant Recovery Efficiency
25%

L1: Annual leakage rate (%) eg 10%

L2: Annual purge release (%)

S1: Annual service release (%), eg

S2: Probability for failure (%), eg 1%

Key assumptions for the Chocolate Factory (Block F)

Mechanical cooling is likely to be required. It is assumed that the first credit (DELCO < 1000 kgCO₂/kW) should be achievable with the procurement of a compliant VRF system.

If mechanical cooling is to be provided and if the refrigerant is to be either CO₂ (R744) or HFO (R1234), at least two credits can be assumed.

Responsibility: FGP

Pollution Pol 02 | NOx emissions

0 / 3

(Contribution: 0.00%)

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.
- Where building types required to assess NOx emissions from water heating do not have a large water demand for hot water (i.e. hot water represents less than 10% of the combined space heating and hot water energy demand) and as a result they are installing point-of-use electric hot water heaters only (grid-sourced electricity) such installations may be exempt from the above requirements.

Key assumptions for the Chocolate Factory (Block F)

It is currently assumed that the community heating system and VRF system will limit the number of credits which can be achieved under Pol 02.

Responsibility: FGP

Pollution Pol 03 | Surface Water Runoff

2 / 5

(Contribution: 1.54%)

Requirements

1 Credit	FLOOD RISK	2 Credits
Specific Flood Risk Assessment (FRA) ¹ + Medium or High annual probability of flood risk from <u>all sources</u> + Ground level and access 600mm above the flood level	OR	Specific Flood Risk Assessment (FRA) ¹ + Low annual probability of flood risk from <u>all sources</u>

SURFACE WATER RUN-OFF

1 Credit	Appropriate consultant appointed	+	1 Credit
Peak run-off rate for the 1 in 100 year event no greater than pre-development, including an allowance for climate change	No flooding as a result of local drainage failure + Run-off volume no greater than pre-development (over the lifetime) and SUDS to manage additional volume for the 100 year 6-hour event	OR	Justification why these criteria cannot be achieved and limitation of the post development peak rate of run-off in accordance with BREEAM requirements

1 Credit MINIMISING WATER COURSE POLLUTION

SUDS + No discharge from the site for rainfall up to 5mm + petrol interceptors + drainage plan + shut-off valves if chemical storage in the building

¹ for sites of less than 2000 m², the FRA can be prepared by the Contractor's Engineer

Key assumptions for the Chocolate Factory (Block F)

- The first Flood Risk credit is targeted. The site is located in an area with a low annual probability of flood risk from rivers, however there is potentially a high risk from other sources (surface water, reservoir). This has been confirmed by the FRA. The peak run off credits is targeted, but the volume run-off credit is not. The Minimising water course pollution credits is not targeted.



- The Surface Water Run-off credits are also targeted at this stage.

Responsibility: **Furness Partnership**

Pollution Pol 04 | Reduction of night-time light pollution

1 / 1

(Contribution: 0.77%)

Requirements

EXTERNAL LIGHTING STRATEGY

Designed in compliance with Table 2 of the ILP Guidance notes for the reduction of obtrusive light, 2011¹



EXTERNAL LIGHTING CONTROL

All external lighting (except for safety and security) can be switched off between 23:00 and 07:00 (e.g. timer)
+
Safety and security lighting complies with the lower levels of Table 2 of the ILP Guidance notes (e.g. automatic switch to reduce lighting levels after 23:00)



ILLUMINATED ADVERTISEMENT

Designed in compliance with ILE Technical Report 5 – the Brightness of Illuminated Advertisements

Key assumptions for the Chocolate Factory (Block F)

- The External Lighting Strategy will be designed in compliance with Table 2 of the ILP guidance notes;
- External Lighting Strategy Controls will switch off (reduce in the case of safety and security lighting) external lighting between 23:00 and 07:00;

Illuminated advertisement are not assumed to be present but this should be confirmed as the design progresses.

Important notes

- If there is no external lighting on or around the assessed development the credit can be awarded by default.

¹ The ILP Guidance notes are available free of charge from www.ilp.org.uk

Responsibility: FGP

Pollution Pol 05 | Reduction of noise pollution

1 / 1

(Contribution: 0.77%)

Requirements

NOISE IMPACT ASSESSMENT

Carried out by a suitably qualified acoustic consultant and in compliance with BS 7445



Indicating existing background noise levels at the nearest or most exposed noise-sensitive area (or at a location where they will be similar)



Indicating the rating noise level resulting from the new noise-source

PERFORMANCE



The impact of the new development results in an increase of less than:

+ 5 dB
between 07:00
and 23:00

+ 3 dB
between 23:00
and 07:00

OR

Attenuation measures are being implemented to comply with the above requirement

Key assumptions for the Chocolate Factory (Block F)

The Acoustic Consultant should confirm that these credits are achievable.

Important notes

- Noise sensitive areas include residential areas, hospitals and health centres, education buildings, libraries, places of worship, parks, etc.
- The credit can be awarded by default where there are or will be no noise-sensitive areas or buildings within 800m radius of the assessed development.

Responsibility: **Waterman**

Innovation Innovation credits

1 / 10

(Contribution: 1.00%)

Requirements

Up to a maximum of 10 credits are available in aggregate from a combination of the following (where applicable):

EXEMPLARY LEVEL OF PERFORMANCE

Where the building meets defined exemplary level performance criteria in:

- Man 03 | Responsible construction practices
- Man 05 | Aftercare
- Hea 01 | Visual comfort
- Hea 02 | Indoor air quality
- Ene 01 | Reduction of CO₂ emissions
- Wat 01 | Water consumption
- Mat 01 | Life cycle impacts
- Mat 03 | Responsible sourcing of materials
- Wst 01 | Construction site waste management
- Wst 02 | Recycled aggregates
- Wst 05 | Adaptation to climate change

INNOVATION

Where any new technology, design or construction process can potentially be recognised as 'innovative'.

One innovation credit can be awarded for each innovation application submitted to and approved by the BRE

Key assumptions for the Chocolate Factory (Block F)

Man 05 Aftercare – for post occupancy evaluation and energy and water monitoring at quarterly intervals for 3 years after construction. This should be required from the tenant.

Responsibility: **Workspace and/or tenant**

Status of this report

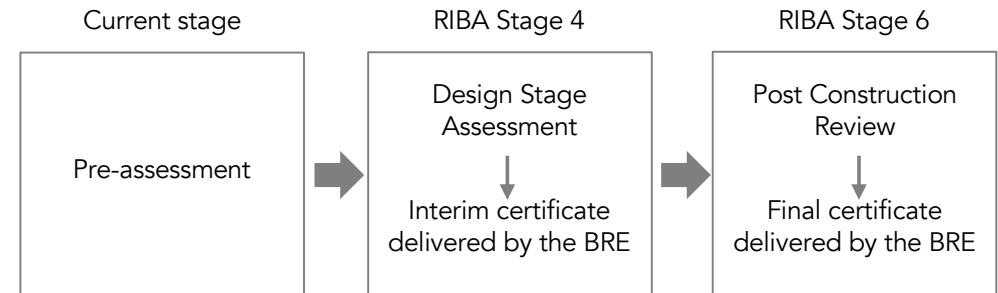
This pre-assessment, which has been prepared by Etude on behalf of Workspace, allows an initial evaluation of the likely rating to be achieved under a formal assessment. It indicates that a rating of Excellent can be achieved for the Offices.

The following targeted credits should particularly be noted:

- The building's energy performance should be at least 20% better than Part L 2013 through an energy efficient envelope, efficient services (most importantly ventilation and lighting), connection to the central energy centre and, potentially, a PV system;
- Water-efficient fittings, a leak detection system and flow control devices coupled with isolation valves should reduce water consumption;
- Cyclist facilities (including showers and changing facilities) should be provided;
- Best practice procedures should be put in place to manage the environmental impact of construction (e.g. Considerate Constructors Scheme, Monitoring) and of materials (Green Guide, Responsible sourcing);
- Cyclist safety and consultation on Secured by Design should inform the design.

Based on the assumptions summarised in this pre-assessment report, a score of 71.4% is achieved, i.e. 1.4% above the minimum score required to achieve a rating of Excellent under BREEAM 2014 (i.e. 70%).

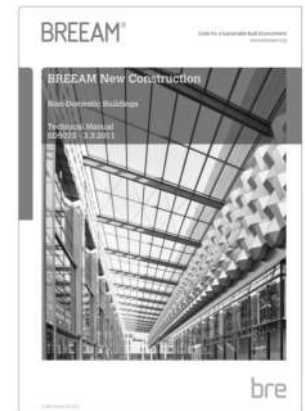
Next steps



The project team and contractor should always work with reference to the BREEAM 2014 pre-assessment and BRE's technical manual when undertaking design changes.

The latest version (SD5076 – 5.0: 2014) of this manual has been used to prepare this pre-assessment and can be obtained :

- at <http://www.breeam.org/page.jsp?id=109>
- by contacting Etude at london@etude.co.uk.



Three methodologies are recommended for managing design risks:

- A dedicated architectural series of BREEAM drawings, highlighting all features installed to discharge criteria, with a BREEAM credit reference;
- Credit references adjacent to any items required to discharge BREEAM criteria, listed in specifications and RIBA stage summary documents e.g. energy sub-meters (BREEAM 2014 credit: Ene 02).
- The BREEAM score should be reviewed periodically to reflect changes.

INDICATIVE CODE FOR SUSTAINABLE HOMES

PRE-ASSESSMENT FOR BLOCKS B, D1 AND E



Blocks B, D1 and E | Code for Sustainable Homes Pre-assessment



The Chocolate Factory | CfSH | Summary

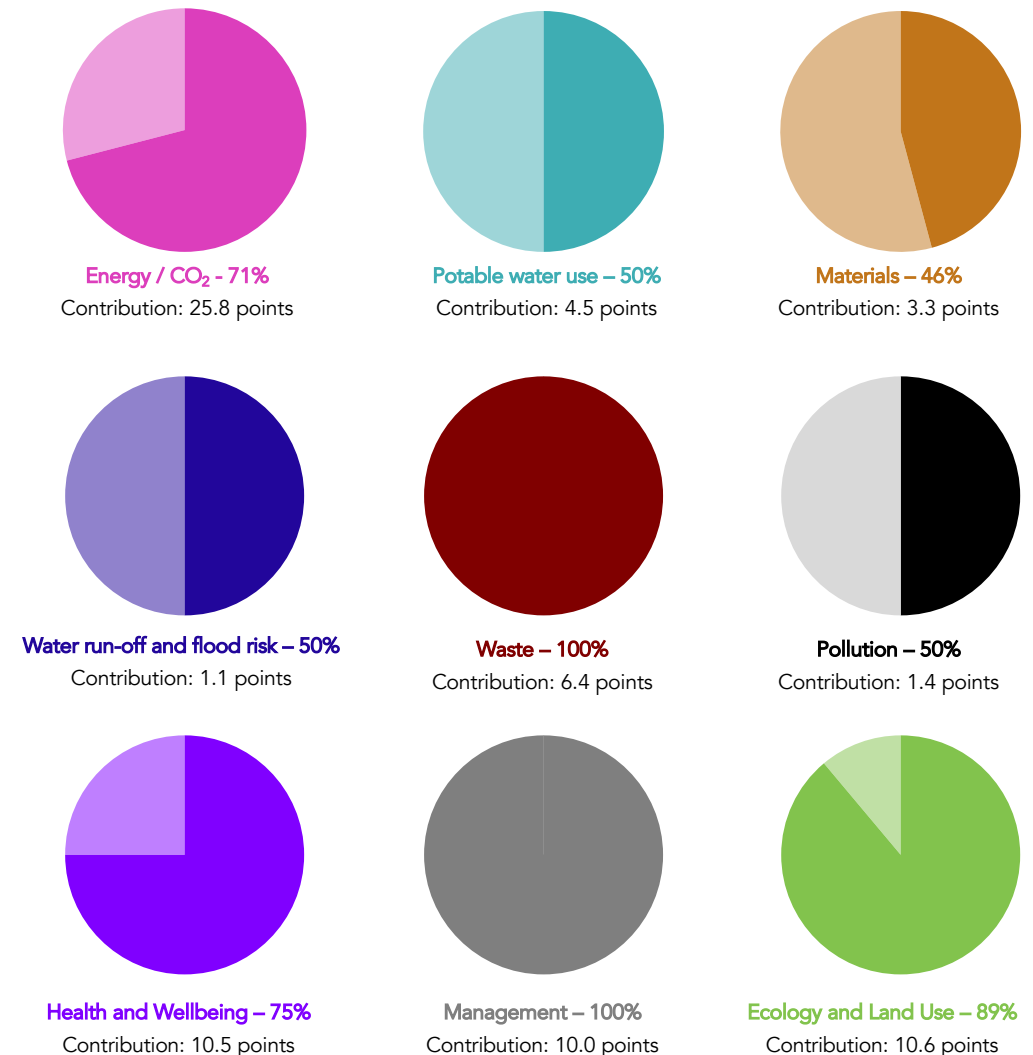
This Code for Sustainable Homes pre-assessment, which has been prepared by *Etude* on behalf of Workspace (hereby referred to as 'the Applicant'), allows an initial evaluation of the likely rating to be achieved under a formal CfSH assessment for the proposed redevelopment of the Chocolate Factory and the adjoining sites (hereby referred to as 'the Chocolate Factory').

Although the Code for Sustainable Homes has been technically withdrawn by the Government in March 2015, this Code pre-assessment has been prepared in order to summarise the energy and sustainability measures proposed for the residential element of the scheme including:

- On an area-weighted average basis, the dwellings are targeting to be **at least 35% better than Part L1A 2013**. This is likely to rely on an airtight and efficient envelope, efficient building services (including MVHR), connection into a low carbon heating system, and roof-mounted photovoltaic panels;
- The average water consumption must not exceed **105 litres/person/day**;
- The site is assumed to be of **low ecological value** and measures are proposed to **improve biodiversity on site**;
- The **green guide rating of materials** will influence the selection of materials;
- Best practice procedures will be implemented to manage the **impact of construction on the environment**.

Based on the assumptions summarised in this pre-assessment report, a score of **73.7%** is achieved, i.e. 5.7% above the minimum score to achieve CfSH Level 4, i.e. 68%.

This is a graphical summary of the proportion of credits targeted at the Chocolate Factory compared with the maximum number of credits available in each category.



The Chocolate Factory | CfSH | Context

Workspace is seeking to redevelop the Chocolate Factory and adjacent buildings in order to provide a mixed use development comprising approximately 10,657 sqm of employment space and 230 new dwellings (mix of 1, 2, 3 & 4 bed units). The site is located south east of Wood Green station and is well served by a number of transport links, including Wood Green Tube Station and Alexandra Palace Train station with a calculated Public Transport Accessibility Level (PTAL) of 4.



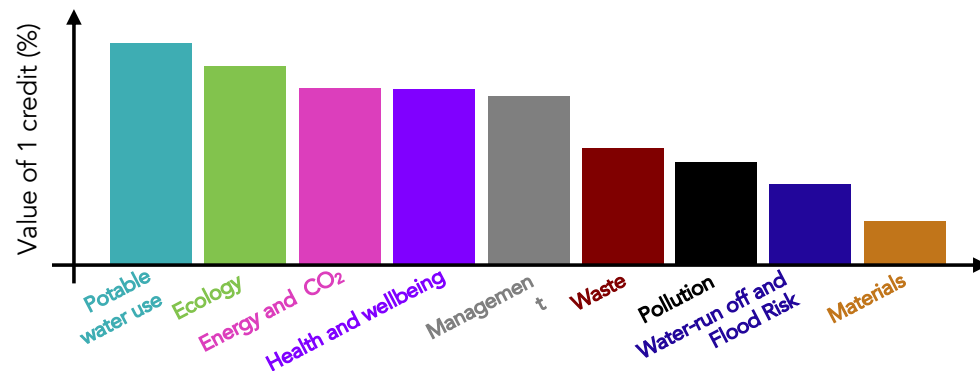
The Chocolate Factory | CfSH | Introduction

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 CO₂ 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 2013
1 (★)	36%	120 l/person/day	-
2 (★★)	48%	120 l/person/day	-
3 (★★★)	57%	105 l/person/day	-
4 (★★★★)	68%	105 l/person/day	19%
5 (★★★★★)	84%	80 l/person/day	100%
6 (★★★★★★)	90%	80 l/person/day	Zero Carbon

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:

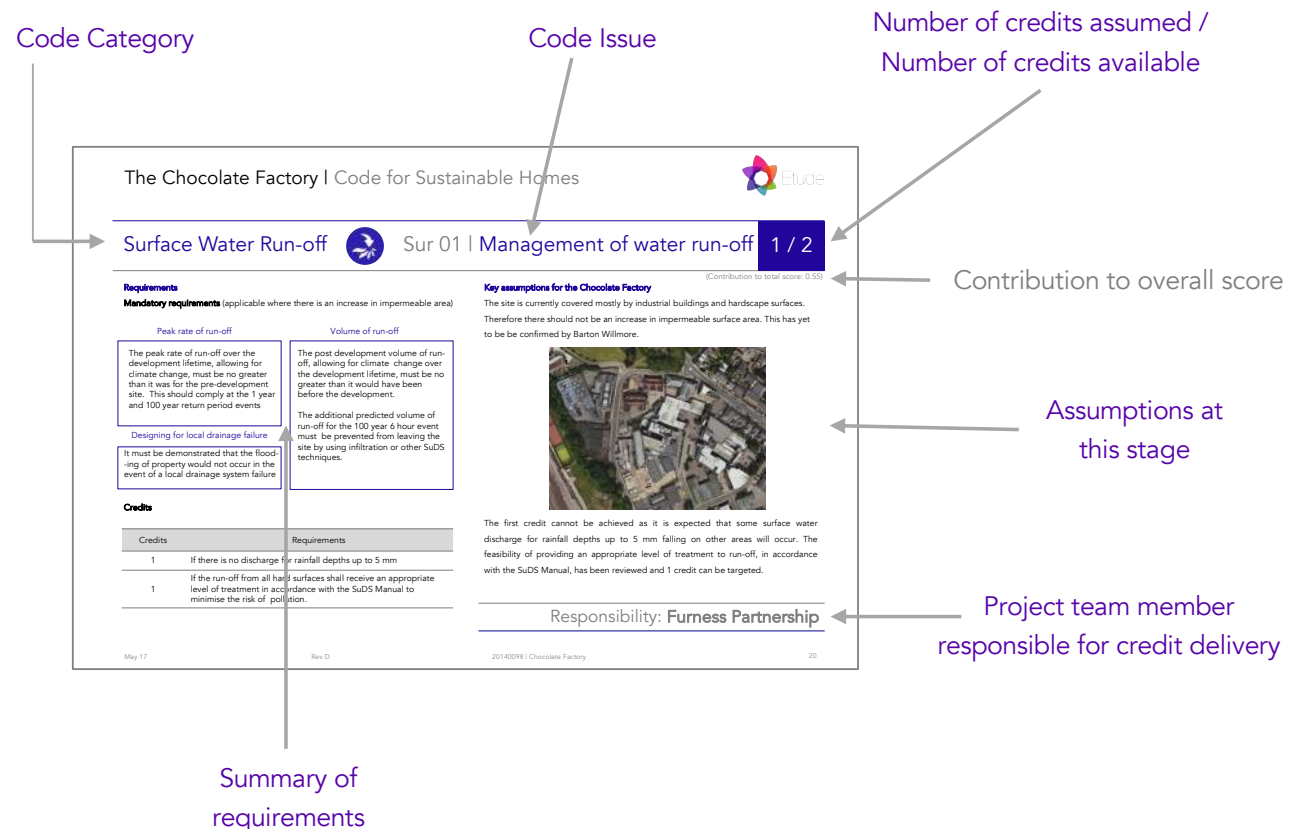
- at <https://www.gov.uk/government/publications/code-for-sustainable-homes-technical-guidance>
- by contacting Etude at london@etude.co.uk

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:



Energy / CO₂ Ene 01 | Dwelling Emission Rate

4 / 10

(Contribution to total score: 4.68)

Requirements

Credits are awarded based on the performance against Part L1A 2013.

Credits	% Improvement over Part L1A 2013	Mandatory level
1	≥ 6%	
2	≥ 12%	
3	≥ 19%	Level 4
4	≥ 32%	
5	≥ 44%	
6	≥ 56%	
7	≥ 70%	
8	≥ 84%	
9	≥ 100%	Level 5
	Zero net CO ₂ emissions	Level 6

Important notes

As the buildings contains multiple dwellings, it is acceptable to award credits based on the average percentage improvement of DER over TER for all dwellings on a 'block-by-block' basis.

Key assumptions for the Chocolate Factory

Initial energy modelling on a sample of representative dwellings will be carried out in order to confirm the level of performance required from the envelope and building services, as well as to determine the required type/size of Low or Zero Carbon energy systems.

At this stage the following design assumptions are assumed in order to be able to achieve a 35% improvement over Part L 2013 as required by the London Plan:

Building envelope

- Window U-value: 1.4 W/m².K
- External wall U-value: 0.20 W/m².K
- Ground Floor: 0.15 W/m².K
- Roof U-value: 0.13 W/m².K
- Air permeability rate: 3 m³/h/m² at 50 Pa
- Thermal bridges (y): Accredited Construction Details or better

Building services

- Heat supply from on-site energy centre
- Efficient Mechanical Ventilation with Heat Recovery (SFP < 0.7 and HR efficiency > 90%) with rigid and insulated ductwork
- 100% energy efficient lighting
- Roof mounted photovoltaic panels

Responsibility: **Barton Willmore + FGP + Etude**

Energy / CO₂



Ene 02 | Fabric energy efficiency

8 / 9

(Contribution to total score: 9.39)

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/m ² /yr	≤ 60 kWh/m ² /yr	
4	≤ 45 kWh/m ² /yr	≤ 55 kWh/m ² /yr	
5	≤ 43 kWh/m ² /yr	≤ 52 kWh/m ² /yr	
6	≤ 41 kWh/m ² /yr	≤ 49 kWh/m ² /yr	
7	≤ 39 kWh/m ² /yr	≤ 46 kWh/m ² /yr	Levels 5 and 6
8	≤ 35 kWh/m ² /yr	≤ 42 kWh/m ² /yr	
9	≤ 32 kWh/m ² /yr	≤ 38 kWh/m ² /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 the Chocolate Factory

Initial energy modelling on a sample of representative dwellings using key assumptions summarised on the previous page should confirm the level of fabric efficiency which can be achieved. At this stage, an average Fabric Energy Efficiency Standard (FEES) of less than 35 kWh/m²/yr is targeted.

This is to be checked and validated as the design of the scheme develops.

Responsibility: Barton Willmore + Etude



(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), CO₂ emissions, current tariff, current cost, accurate account balance information (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 the Chocolate Factory

Electricity and heat consumption will be displayed in each unit.

Examples of energy display devices:



Responsibility: FGP

Energy / CO₂



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:



Important notes

The drying space drying space must be heated and have either:

- controlled intermittent extract ventilation, which achieves a minimum extract rate of 30 l/s OR
- continuous extract ventilation, which achieves a minimum extract rate of 13 l/s.

Any fixings/fittings must be a permanent feature of the room/space.

Alternatively, a secure external space also meets the requirements of this credit.

Key assumptions for the Chocolate Factory

A drying line will be provided in the bathroom of each dwelling.

This room will be suitably ventilated and heated.

Responsibility: Barton Willmore + FGP

Energy / CO₂



Ene 05 | Energy labelled white goods

2 / 2

(Contribution to total score: 2.35)

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 the Chocolate Factory

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

A+



Dishwasher

A



Washer dryer

B

Responsibility: **Workspace**

Energy / CO₂



Ene 06 | External lighting

2 / 2

(Contribution to total score: 2.35)

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 the Chocolate Factory

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: FGP

Energy / CO₂



Ene 07 | Low and zero carbon technologies

1 / 2

(Contribution to total score: 1.17)

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 the Chocolate Factory

It is currently anticipated that the Chocolate Factory will receive its heat supply from an on-site energy centre. The total proportion of heat generated by Low or Zero Carbon Technologies will need to be confirmed during detailed design in order to check whether it is sufficient to achieve one or two credits under Ene 07. In addition, roof-mounted PVs will be provided that will further reduce CO₂ emissions and contribute to this credit.

Only one credit under Ene 7 is currently assumed, however this will be reviewed as the design progresses.



Solar PV system

Responsibility: Barton Willmore + FGP + Etude



(Contribution to total score: 1.17)

Requirements

Number of compliant cycle storage spaces per dwelling:

	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

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.

Key assumptions for the Chocolate Factory

Based on the currently proposed dwelling numbers and types shown within the scheme's Schedule of Accommodation dated 12/02/2018), the following table provides an estimate of the credits achievable under Ene 08.

Block	Number of units	Number of cycle spaces required for 1 credit	Number of cycle spaces required for 2 credit
B	64	47 cycle spaces	94 cycle spaces
D1	57	32 cycle spaces	63 cycle spaces
E	109	80 cycle spaces	159 cycle spaces

It is assumed that the London Plan standards will go beyond the above and therefore that it is proposed that two credits can be targeted.

Responsibility: **Barton Willmore + SDG**



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:

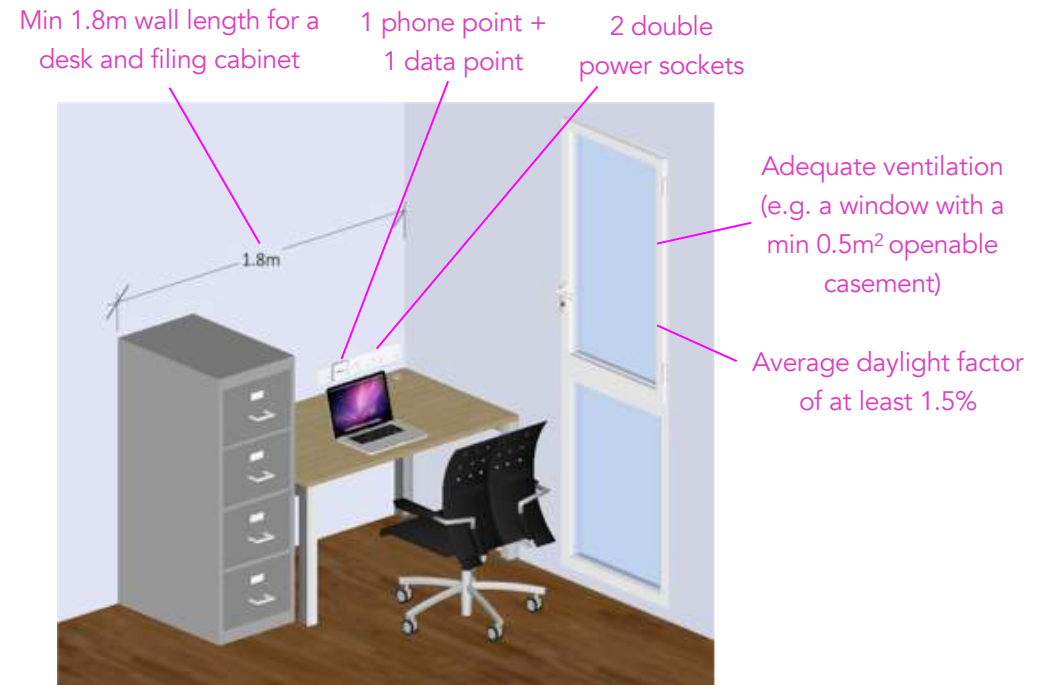
- It must achieve an Average Daylight Factor (ADF) of at least 1.5%.
- It should have sufficient space (1.8m wall length) to allow a desk, chair and filing cabinet or bookshelf to be installed with space to move around the front and the side of the desk.
- It must have sufficient services (i.e. two double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

Confirmation that the identified room for home office will achieve an Average Daylight Factor of at least 1.5% is to be provided as part of the daylight assessment.



Responsibility: BW + FGP + Daylight Consultant

Water Wat 01 | Indoor 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

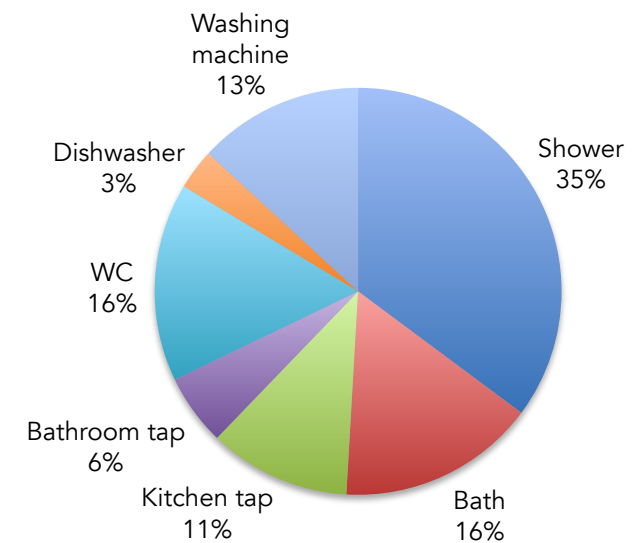
The calculation needs to be undertaken for each dwelling that has a different specification.

Key assumptions for the Chocolate Factory

The following flow rates are targeted. According to the Water Calculator this would represent a CfSH water consumption of 101.7 l/p/day and would therefore comply with the mandatory criterion for Code level 4.

101.7 litres / person / day

- **Shower:** 9 litres/min
- **Bath:** 160 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



Breakdown of internal water consumption at The Chocolate Factory

Responsibility: Barton Willmore + FGP

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 the Chocolate Factory

A communal rainwater recycling system for irrigation is not proposed.

Responsibility: **Barton Willmore + FGP**

Materials



Mat 01 | Environmental impact of materials

5 / 15

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 and ground 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 the Chocolate Factory

An initial Green Guide review for a number of assumed materials and build-ups has been carried out and is shown below. A more detailed review should be undertaken with input from Barton Willmore and Furness Partnership. At this stage it is considered reasonable to **target 5 out of the 15 credits** for The Chocolate Factory

Element	Reference	Description	Rating
Roof	1212540050	In situ reinforced concrete slab with 50% GGBS and 20% recycled coarse aggregate, vapour control layer, insulation, TPO single ply roofing membrane	C
External walls	806170033	Brickwork outer leaf, insulation, dense solid blockwork inner leaf, cement mortar, plasterboard on battens, paint	A+
Internal walls	809760002	Galvanised steel stud, plasterboard, paint	A
Floors	807280010	Post-tensioned slabs with screed	D
Windows	1213100004	Powder coated aluminium window (profile < 1.08 kg/m), double-glazed	A

Responsibility: **Barton Willmore + FP + Etude**

Materials



Mat 02 | Responsible sourcing of materials (basic elements)

4 / 6

(Contribution to total score: 1.20)

Requirements

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

- Frame
- Ground Floor
- 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

Key assumptions for the Chocolate Factory

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 **4 credits** can be achieved.

Responsibility: **Barton Willmore + Contractor**

Materials



Mat 03 | Responsible sourcing of materials (finishing elements)

2 / 3

(Contribution to total score: 0.60)

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

Key assumptions for the Chocolate Factory

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 **2 credits** can be achieved.

Responsibility: **Barton Willmore + Contractor**

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 flooding 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 the Chocolate Factory

The site is currently covered mostly by industrial buildings and hardscape surfaces. Therefore there should not be an increase in impermeable surface area. This has yet to be confirmed by Barton Willmore.



The first credit cannot be achieved as it is expected that some surface water discharge for rainfall depths up to 5 mm falling on other areas will occur. The feasibility of providing an appropriate level of treatment to run-off, in accordance with the SuDS Manual, has been reviewed and 1 credit can be targeted.

Responsibility: Furness Partnership

Surface Water Run-off



Sur 02 | Flood risk

1 / 2

(Contribution to total score: 0.55)

Requirements

Zone 1 (2 credits)

A Flood Risk Assessment (FRA) must be prepared to confirm that there is a low risk of flooding from all sources.

Zones 2 and 3a (1 credit)

The finished ground floor level of all habitable parts of dwellings and access routes to the ground level and the site must be at least 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 the Chocolate Factory

- Once Flood Risk credits is targeted. The EA Flood Map below indicates that the site is located in an area with a low annual probability of flood risk from rivers, however there is a high risk from other sources. FG are to confirm if the finished ground floor level of all habitable parts of dwellings and access routes to the ground level and the site are at least 600 mm above the design flood level of the flood zone.



Responsibility: Furness Partnership

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 the Chocolate Factory

In each dwelling, the following storage systems will be provided to maximise recycling rates:

- a bin for non recyclable waste
- a bin for recyclable waste (co-mingled) – at least 30 litres
- a caddy for food waste



An operational waste management strategy will be prepared by Etude and submitted as part of the planning application.

Communal bin stores will be located no further than 30m away from any residential front door and their storage capacity must be determined using BS 5906:2005.

Responsibility: Barton Willmore + Etude

Waste



Was 02 | Construction site waste management

3 / 3

(Contribution to total score: 2.40)

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 the Chocolate Factory

A Site Waste Management Plan (SWMP) will be prepared and a high diversion rate from landfill for non-hazardous waste will be targeted (i.e. > 85%).

The SWMP will include procedures in order to achieve the target above.

Responsibility: Contractor

Waste Was 03 | Composting

1 / 1

(Contribution to total score: 0.80)

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 the Chocolate Factory

The food waste collection service is currently available to around 70,000 properties in Haringey, as part of the weekly recycling service. It is assumed that this service will be available to residents of the Chocolate Factory. Individual food waste bins in apartments and communal 240-litre bins in bin stores are recommended.

Therefore, this credit is targeted.

Responsibility: Barton Willmore

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, CO₂, Pentane (iso-pentane, cyclopentane, n-pentane), Iso butene.

Key assumptions for the Chocolate Factory

This credit is targeted.

Responsibility: Barton Willmore + FGP

Pollution



Pol 02 | NOx emissions

1 / 3

(Contribution to total score: 0.70)

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 the Chocolate Factory

It is currently proposed that the site will receive its heat supply from an on-site energy centre with efficient gas fired boilers. The NOx emissions from this mix of heat sources will be confirmed during detailed design.

At this stage **1 credit has been assumed** under Pol 02, however this will be reviewed once the energy centre's plant mix and resultant NOx emissions rate are confirmed.

Responsibility: FGP

Health and Wellbeing



Hea 01 | Daylighting

1 / 3

(Contribution to total score: 1.17)

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 place in each kitchen, 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 position 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 the Chocolate Factory

It is currently assumed that only the second credit can be achieved, i.e. that living rooms, dining rooms and studies (including any room designated as a home office) will achieve a minimum Average Daylight Factor of 1.5%.

Daylight calculations to be undertaken by the Daylight Consultant should provide an indication of the likelihood of achieving these credits.

Responsibility: **GL Hearn**

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 ($D_{nT,w} + C_{tr}$) are at least 3dB higher - Impact sound insulation values ($L'_{nT,w}$) are at least 3dB lower
3	- Airborne sound insulation values ($D_{nT,w} + C_{tr}$) are at least 5dB higher - Impact sound insulation values ($L'_{nT,w}$) are at least 5dB lower
4	- Airborne sound insulation values ($D_{nT,w} + C_{tr}$) 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 the Chocolate Factory

An improvement of 5dB over the performance standards set out in Part E of the Building Regulations is targeted. Therefore 3 credits are targeted under Hea 02.

Responsibility: **Waterman**

Health and Wellbeing



Hea 03 | Private space

1 / 1

(Contribution to total score: 1.17)

Requirements

Where **accessible** outdoor space is provided:

Private

1.5 m² per bedroom

Semi-private / Communal

1 m² per bedroom

Important notes

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

Key assumptions for the Chocolate Factory

It is assumed that All dwellings will have access to a **private** outdoor balcony.

Therefore this credit is currently targeted in all dwellings.

Responsibility: Barton Willmore

Health and Wellbeing



Hea 04 | Lifetime Homes

4 / 4

(Contribution to total score: 4.68)

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 the Chocolate Factory

The 16 criteria of Lifetime Homes will be complied with.

01 - Parking

09 - Potential for entrance level bedspace

02 - Approach to dwellings from parking

10 - Entrance level WC and shower drainage

03 - Approach to all entrances

11 - WC and bathroom walls

04 - Entrances

12 - Stairs and potential through-floor lift in dwelling

05 - Communal stairs and lifts

13 - Potential for fitting of hoists in bathroom/bedroom

06 - Internal doorways and hallways

14 - Bathrooms

07 - Circulation space

15 - Glazing and window handle heights

08 - Entrance level living space

16 - Location of service controls

Responsibility: **Barton Willmore**

Management Man 01 | Home user guide

3 / 3

(Contribution to total score: 3.33)

Requirements

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

Key assumptions for the Chocolate Factory

A comprehensive Home User Guide will be prepared.

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

Important notes

- The Home User Guide should include the procedure for obtaining the guide in alternative 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.

Responsibility: **Contractor**

Management Man 02 | Considerate Constructors Scheme

2 / 2

(Contribution to total score: 2.22)

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 25 (and at least 5 in every section)
2	More than 35 (and at least 7 in every section)

Important notes

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

Key assumptions for the Chocolate Factory

The Chocolate Factory will be registered under the Considerate Constructor Scheme and a score of more than 35 will be achieved.



Responsibility: **Contractor**

Management



Man 03 | Construction site impacts

2 / 2

(Contribution to total score: 2.22)

Requirements

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

Procedures can cover the following items:

1. CO₂ production or energy use arising from site activities
2. CO₂ 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 the Chocolate Factory

A number of procedures will be implemented in order to manage the construction site in a manner that mitigates environmental impact.

At least four of the items listed on the left will be covered by these procedures. It is currently assumed that these will be the following:

- CO₂ production or energy use arising from site activities;
- Water consumption from site activities;
- Best practice policies in respect of air (dust) pollution arising from site activities;
- Best practice policies in respect of water (ground and surface) pollution;
- 80% of site timber to be reclaimed, re-used or responsibly sourced.

Responsibility: **Contractor**

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 the Chocolate Factory

Barton Willmore will consult with Haringey Council’s Architectural Liaison Officer (ALO) for recommendations on security issues.

Responsibility: **Barton Willmore**

Ecology and Land use



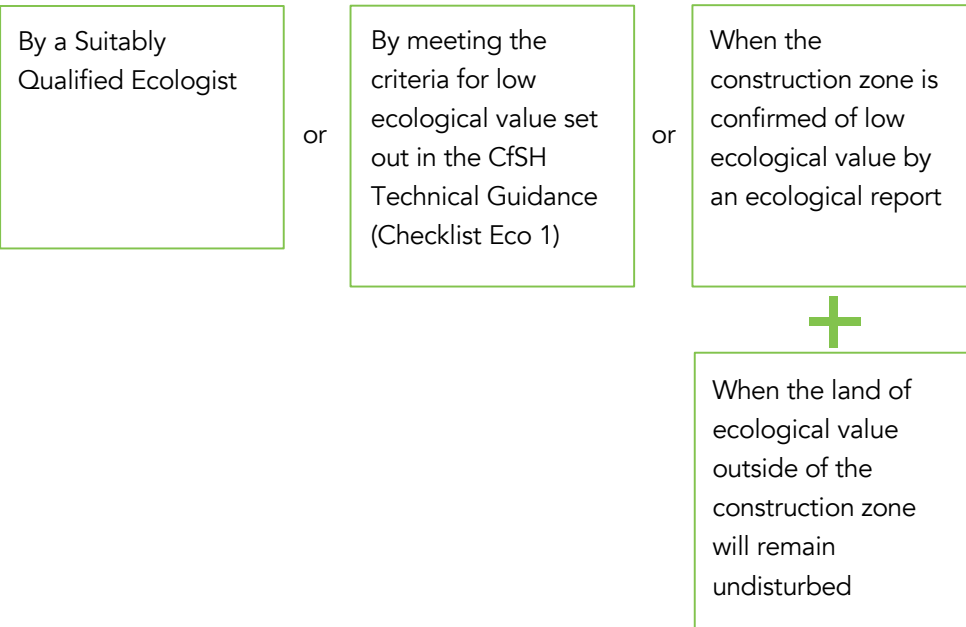
Eco 01 | Ecological value of site

1 / 1

(Contribution to total score: 1.33)

Requirements

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



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.

Key assumptions for the Chocolate Factory

An ecology survey will be undertaken shortly. It is currently assumed that it will confirm that the site is of 'low ecological value', given that it is mostly occupied by industrial buildings and almost entirely covered by hard surfaces (see below).



Responsibility: **Aspect Ecology**

Ecology and Land use



Eco 02 | Ecological enhancement

1 / 1

(Contribution to total score: 1.33)

Requirements

This credit is achieved if:

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

Important notes

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

Key assumptions for the Chocolate Factory

An ecology survey will be undertaken shortly by a suitably qualified ecologist. She/he will provide recommendations on how to positively enhance ecology of the site.

The design should incorporate a number of features that will enhance the ecology and biodiversity of the site.

Responsibility: **Aspect Ecology + Barton Willmore**

Ecology and Land use



Eco 03 | Protection

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 value AND no features of ecological value have been identified.

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.

Key assumptions for the Chocolate Factory

It has been assumed that the site is of 'low ecological value; and does not have any ecological features other than a small area of marginal planting. Therefore this credit can be awarded by default.

Responsibility: **Aspect Ecology**

Ecology and Land use



Eco 04 | Change in ecological value

3 / 4

(Contribution to total score: 4.00)

Requirements

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

Credits	Impact on site's ecological value (qualitative)	Impact on site's ecological value (quantitative)
1	Minor negative change	$-9 < \text{change} \leq -3$ species per hectare
2	Neutral	$-3 < \text{change} \leq +3$ species per hectare
3	Minor enhancement	$+3 < \text{change} \leq +9$ species per hectare
4	Major enhancement	$+9 \text{ species per hectare} < \text{change}$

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 the Chocolate Factory

The number of credits which can be achieved under Eco 4 will depend largely on the detailed specifications of the planted areas/green roofs. It is currently anticipated that a 'minor enhancement' will be achieved (i.e. 3 credits out of 4).

Responsibility: **Aspect Ecology + Barton Willmore**

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	$2.5:1 \leq \text{CfSH density ratio}$
2	$3:1 \leq \text{CfSH density ratio}$

For blocks of flats:

Credits	Requirement
1	$3:1 \leq \text{CfSH density ratio}$
2	$4:1 \leq \text{CfSH density ratio}$

For a combination of houses and flats:

Credits	Requirement
1	Area-weighted average between $2.5:1$ and $3:1 \leq \text{CfSH density ratio}$
2	Area-weighted average between $3:1$ and $4:1 \leq \text{CfSH density ratio}$

Key assumptions for the Chocolate Factory

From proposed building heights and dwelling densities, it is anticipated that the CfSH density ratio will be 4:1 or greater.

2 credits are therefore targeted under Eco 05.

Responsibility: Barton Willmore

Conclusion

This report is a Code for Sustainable Homes **pre-assessment**. Its aim is to summarise the energy and sustainability measures proposed for the residential element of the scheme including:

- On an area-weighted average basis, the dwellings are targeting to be **at least 35% better than Part L1A 2013**. This is likely to rely on an airtight and efficient envelope, efficient building services (including MVHR), connection into a low carbon heating system, and roof-mounted photovoltaic panels;
- The average water consumption must not exceed **105 litres/person/day**;

- Internal and communal **storage space** will be provided for **recyclables (co-mingled)** and **general waste**;
- The site is assumed to be of **low ecological value** and measures are proposed to **improve biodiversity on site**;
- The **green guide rating of materials** will influence the selection of materials;
- Best practice procedures will be implemented to manage the **impact of construction on the environment**.

Based on the assumptions summarised in this pre-assessment report, a score of **73.7% is achieved**, i.e. 5.7% above the minimum score required to achieve CfSH Level 4, i.e. 68%.



INDICATIVE CODE FOR SUSTAINABLE HOMES / HOME QUALITY MARK COMPARISON



Criteria			Issue	Max credits	Comparison with CfSH	Project Comments	Estimated Credits		
Our Surroundings	Transport and Movement	Accessible Public Transport	Public Transport Accessibility Index (AI) score (up to 16 credits).	16	Not specified.	AI score = 18.04 (Source: TfL)	16		
		Alternative Sustainable Transport Options	Cycle storage, 1 cycle space per bed (up to 6 credits).	6	Cycle storage specified in Ene 08.	Not confirmed but achievable.	6		
			Cycle routes (up to 3 credits).	3	Not specified.	Potential allowance for integrated route in low traffic zone.	0		
			Car charging points (up to 4 credits).	4	Not specified.	tbc	0		
			Car clubs (up to 2 credits).	2	Not specified.	tbc	0		
		Local Amenities	Close to 3 or more key amenities with walking distance (for 12 credits).	12	Not specified.	Assumed to be achievable based on location.	12		
	Close to 2 or more local amenities 30 minutes walk (for 7 credits).		7	Not specified.	Assumed to be achievable based on location.	7			
	Outdoors	Ecology	>75% Previously developed land (for 6 credits).	6	Not specified.	Development is >75% previously developed land.	6		
			Appointing an expert (for 2 credits).	2	Appointing an expert specified in Eco 02.	Achievable.	2		
			Early appointment (for 2 credits)	2	Not specified.	Good practice, assumed achievable.	2		
			Foundation route;						
			Survey (for 2 credits),	2	n/a	Comprehensive route assumed be more comparable.	n/a		
			Maintaining and enhancing ecological value (up to 4 credits),	4	n/a	Comprehensive route assumed be more comparable.	n/a		
			Local biodiversity records (for 1 credit).	1	n/a	Comprehensive route assumed be more comparable.	n/a		
			Comprehensive route;						
			Ecologist's survey (for 3 credits),	3	Ecologist's survey required for Eco 01 - 04.	Achievable.	3		
			Maintaining and enhancing ecological value (up to 10 credits),	10	Ecological value required for Eco 01 & 04.	Achievable.	10		
			Protecting against invasive or diseased species on site (for 2 credits)	2	Not specified.	Assumed to be achievable based on ecologist's recommendations.	2		
			Maintaining ecology in communal areas (for 3 credits).	3	Not specified.	Achievable additional requirement.	3		
			Local biodiversity records (for 2 credits)	2	Not specified.	Achievable additional requirement.	2		
		Recreational Space	Accessible public recreational space (for 4 credits).	4	Not specified.	tbc	0		
			Private space (up to 6 credits)	6	Private space specified in Hea 03.	It is assumed all dwellings will have a compliant private balcony.	6		
			Communal space (up to 2 credits).	2	Not specified.	tbc	0		
			Management strategy (for 3 credits)	3	Not specified.	tbc , linked to Ecology	0		
			Growing space (for 2 credits).	2	Not specified.	tbc , linked to Ecology	0		
			Expert input (for 1 credit).	1	Not specified.	tbc, Growing space must be achieved	0		
			Initial planting (for 2 credits).	2	Not specified.	tbc, Growing space must be achieved	0		
			Safety and Resilience	Flood Risk	Low flood risk (up to 18 credits).	18	Flood risk specified in Sur 02.	Achievable through FRA.	18
	Medium or high risk (up to 16 credits)	16			n/a	Low flood risk assumed be more comparable.	n/a		
	Managing the Impact of Rainfall	Home information (Pre-requisite)		n/a	Home user guide specified in Man 01.	Achievable.	n/a		
		Foundation route (up to 3 credits)		3	Surface water run-off specified in Sur 01.	Not targeted.	0		
		Comprehensive route;							
		Peak-rate of run-off (up to 5 credits),		5	Surface water run-off specified in Sur 01.	Not targeted.	0		
		Volume of run-off (up to 7 credits).		7	Surface water run-off specified in Sur 01.	Not targeted.	0		
		Water quality (for 2 credits).		2	Surface water run-off specified in Sur 01.	Not targeted.	0		
		Designing for maintenance and operation (for 2 credits).		2	Surface water run-off specified in Sur 01.	Not targeted.	0		
	Security	Security needs assessment (Pre-requisite).		n/a	Security specified in Man 04.	Achievable.	n/a		
		Security features (for 10 credits).		10	Security specified in Man 04.	Achievable.	10		
	My Home	Comfort	Indoor Pollutants	Minimising emissions from building product types (up to 4 credits).	4	Not specified.	Achievable additional requirement.	4	
				Minimising airborne formaldehyde from all sources (for 3 credits)	3	Not specified.	Achievable additional requirement.	3	
				Minimising airborne TVOCs (total volatile organic compounds) from all sources (for 3 credits).	3	Not specified.	Achievable additional requirement.	3	
			Daylight	Average daylight factor (kitchens) (for 6 credits).	6	Daylight specified in Hea 01.	Not targeted.	0	
Average daylight factor (living spaces) (up to 6 credits)				6	Daylight specified in Hea 01.	Achievable.	6		
View of sky (for 4 credits)				4	Daylight specified in Hea 01.	Not targeted.	0		
Internal and External Noise			Suitably qualified acoustician (Pre-requisite).	n/a	Acoustician specified in Hea 02	Achievable.	n/a		
			Internal noise levels (for 2 credits).	2	Not specified.	Achievable additional requirement.	2		
			External noise levels (up to 2 credits).	2	Not specified.	Achievable additional requirement.	2		
Sound Insulation			Sound insulation between dwellings (up to 4 credits).	4	Sound insulation specified in Hea 02	Achievable.	4		
			Sound insulation between rooms (up to 4 credits).	4	Sound insulation specified in Hea 02	Achievable.	4		
Temperature			Home information (Pre-requisite).	n/a	Home user guide specified in Man 01.	Achievable.	n/a		
		Foundation route;							
		Current conditions (for 5 credits),	5	Not specified.	Requirement for thermal modelling.	0			
		Predicted climate change environment (for 4 credits).	4	Not specified.	Requirement for thermal modelling.	0			
		Comprehensive route;							
		Current conditions (for 12 credits),	12	Not specified.	Requirement for thermal modelling.	0			
Ventilation		Predicted climate change environment (for 8 credits).	8	Not specified.	Requirement for thermal modelling.	0			
		Home information (Pre-requisite).	n/a	Home user guide specified in Man 01.	Achievable.	n/a			
		Ventilation air intakes (for 4 credits).	4	Ventilation specified in Ene 01.	Achievable additional requirement.	4			
		Ventilation rates (for 4 credits).	4	Ventilation specified in Ene 01.	Achievable additional requirement.	4			
		Maintenance & controls (for 4 credits).	4	Ventilation specified in Ene 01.	Achievable additional requirement.	4			
		Energy and Cost	Energy Forecast and Cost	Home information (Pre-requisite).	n/a	Home user guide specified in Man 01.	Achievable.	n/a	
Energy performance - Foundation route (up to 30 credits).				30	n/a	Comprehensive route assumed be more comparable.			
Energy performance - Comprehensive route (up to 42 credits).				42	Energy performance specified in Ene 01.	Achievable through additional modelling.	20		
Towards carbon negative (up to 6 credits).				6	LZC technologies specified in Ene 07.	Achievable additional requirement.	3		
Cost - Foundation route (up to 9 credits).				9	Not specified.	Not targeted.	0		
Cost - Comprehensive route (up to 14 credits).				14	Not specified.	Not targeted.	0		
Decentralised Energy			Home information (Pre-requisite).	n/a	Home user guide specified in Man 01.	Achievable.	n/a		
			Feasibility Study (for 2 credits).	2	Decentralised Energy (CHP) specified in Ene 07.	Achievable additional requirement.	2		
			Installation (for 6 credits).	6	Decentralised Energy (CHP) specified in Ene 07.	Achievable additional requirement.	6		
			Infrastructure (for 3 credits).	3	n/a	Installation assumed.	n/a		
			Monitors and controls (for 2 credits).	2	Decentralised Energy (CHP) specified in Ene 07.	Achievable additional requirement.	2		
			Impact on Local Air Quality	Impact on local air quality;					
Natural gas (up to 11 credits),			11	Nox emissions specified in Pol 02.	Dry NOx Level <100 (mg/kWh) assumed.	0			
Electricity (for 11 credits),			11	n/a	Natural gas specified.	n/a			
Oil (not connected to the gas grid) (for 5 credits),	5		n/a	Natural gas specified.	n/a				
Biomass (not connected to the gas grid) (for 5 credits).	5		n/a	Natural gas specified.	n/a				
Multiple appliances with a mixture of fuel types (not connected to the gas grid) (for 5 credits).	5		n/a	Natural gas specified.	n/a				
Materials	Responsible Sourcing of Construction Products		Legally harvested and traded timber (Pre-requisite).	n/a	Timber requirement specified in Man 03.	Achievable.	n/a		
		Product procurement policy and product environmental information (for 3 credits).	3	Part specified in Mat 02, 03 & Man 03.	Achievable additional requirement.	3			
		Responsible sourcing of construction products assessment (up to 28 credits).	28	Specified in Man 02 & 03.	Target of 80%.	28			
	Environmental Impact from Construction	Product procurement policy and product environmental information (up to 8 credits).	8	Part specified in Mat 02, 03 & Man 03.	Achievable additional requirement.	8			
		Foundation route (up to 8 credits).	8	Specified in Man 02 & 03.	Target of 80%.	8			
		Comprehensive route (up to 23 credits).	23	n/a	Foundation route assumed.	n/a			
	Life Cycle Costing of Materials	Homeowner's life cycle cost report (for 9 credits).	9	Not specified.		0			
		Component level life cycle cost optimisation (for 9 credits).	9	Not specified.		0			
	Durability of Construction Products	Integral elements (for 7 credits).	7	Not specified.		0			
		Finishing elements (for 3 credits).	3	Not specified.		0			
Space	Drying Space	Adequate external drying space (for 1 credits).	1	External drying space specified in Ene 04.	Achievable.	1			
		Adequate internal drying space (for 2 credits).	2	Internal drying space specified in Ene 04.	Achievable.	2			
	Access and Space	Nationally described space standards (for 4 credits).	4	Not specified.	Achievable additional requirement.	4			
		Flexible design (for 2 credits).	2	Not specified.	Achievable additional requirement.	2			
	Recyclable Waste	Accessible design (for 4 credits).	4	Accessible design considered in Hea 04.	Achievable.	4			
		Consultation with the waste collection authority (for 2 credits).	2	Not specified.	Achievable additional requirement.	2			
		Recyclable waste (for 5 credits).	5	Recyclable waste specified in Was 01.	Achievable.	5			
		Composting (for 3 credits).	3	Composting specified in Was 03.	Achievable.	3			
Water	Water Efficiency	Water efficient fittings (up to 8 credits).	8	Water use specified in Wat 01.	Achievable.	8			
		Water recycling, 2 credits	2	Water recycling specified in Wat 02.	Not targeted.	0			
Knowledge Sharing	Home Delivery	Commissioning and performance	Commissioning and testing strategy (Pre-requisite).	n/a	Not specified.	Good practice, assumed achievable.	n/a		
			Commissioning building services and control systems (for 5 credits).	5	Not specified.	Good practice, assumed achievable.	5		
			Testing building fabric (for 5 credits).	5	Not specified.	Good practice, assumed achievable.	5		
		Quality Improvement	Collaborative working (for 2 credits).	2	Not specified.	Project consultation required at stage 2.	0		
			Quality control (for 5 credits).	5	Not specified.	Project consultation required at stage 2.	0		
			Feedback from previous projects (for 3 credits).	3	Not specified.	Project consultation required at stage 2.	0		
		Considerate Construction	Considerate Construction (up to 4 credits).	4	Consideration construction specified in Man 02.	Target score of 35.	4		
			Contractor's energy efficiency checklist (for 2 credits).	2	Not specified.	Achievable additional requirement.	2		
			Energy monitoring and reporting (for 2 credits).	2	Energy monitoring specified in Man 03.	Achievable.	2		
		Construction Energy Use	Detailed monitoring and reporting (for 1 credit).	1	Energy monitoring specified in Man 03.	Achievable.	2		
			Contractor's water efficiency checklist (for 2 credits).	2	Not specified.	Achievable additional requirement.	2		
			Construction Water Use	Water monitoring and reporting (for 2 credits).	2	Water monitoring specified in Man 03.	Achievable.	2	
		Detailed monitoring and reporting (for 1 credit).		1	Water monitoring specified in Man 03.	Achievable.	1		
		Site Waste		Product procurement policy (for 1 credit).	1	Specified in Was 02.	Achievable.	1	
			Construction resource efficiency (up to 8 credits)	8	Not specified.	Achievable additional requirement.	8		
			Diversion of construction waste from landfill (up to 4 credits).	4	Specified in Was 02.	Target of 85%.	4		
		Diversion of excavation waste from landfill (for 2 credits).	2	Specified in Was 02.	Target of 85%.	2			
		User Experience	Aftercare	Building warranty (Mandatory).	n/a	Not specified.	Mandatory requirement	n/a	
	Basic aftercare support (Pre-requisite).			n/a	Not specified.	Good practice, assumed achievable.	n/a		
	4-6 week visit (for 3 credits).			3	Not specified.		0		
	Remote support (up to 3 credits).			3	Not specified.		0		
	Home Information		On-site support (up to 4 credits).	4	Not specified.		0		
			Core home information (for 2 credits).	2	Home user guide specified in Man 01.	Achievable.	2		
			Issue specific home information (for 3 credits).	3	Not specified.		0		
			Connectivity (for 1 credit).	1	Not specified.	Achievable additional requirement.	1		
	Smart Homes	Basic starter solutions (for 2 credits).	2	Energy display devices specified in Ene 03.	Achievable.	2			
		Advanced starter solutions (for 3 credits)	3	Not specified.	Achievable additional requirement.	3			
		Controls (for 1 credit).	1	Not specified.	Achievable additional requirement.	1			
		Future Learning	Post-occupancy Evaluation	Foundation Route;					
	Basic POE (for 3 credits),			3	Not specified.		0		
	Enhanced POE (for 3 credits).			3	Not specified.		0		
	Comprehensive Route;								
	Basic POE (for 4 credits),			4	Not specified.		0		
	Enhanced POE (for 5 credits).			5	Not specified.		0		