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Lancaster Grove

Code for Sustainable Homes Pre-Assessment Report

Project No: 22895
Report: v1
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Executive Summary

Price & Myers has been commissioned to carry out a Code for Sustainable Homes pre-assessment for the 18-20 Lancaster Grove development in the London Borough of Camden. The project involves the construction of a new house which will comprise basement, ground, first and attic floors.

This report demonstrates that the dwelling has the potential to achieve a score of 69.57%, which equates to a Level 4 CSH rating.

It is key for the design team to remain in contact with the assessor throughout the process and to check that all specifications are in line with the pre-assessment to ensure the required level is achieved upon construction. In order to sign off the planning condition, a Design Stage and Post Construction Stage assessment will be required and the reports submitted to the BRE for certification.

Contents

1. Introduction

Price & Myers has been appointed to carry out a Preliminary Code for Sustainable Homes assessment of the 18-20 Lancaster Grove for Adam Architecture.

The development involves the new construction at existing property in the London Borough of Cmaden. The development will comprise basement, ground, first and attic floors. This report will provide brief guideline how the proposed development perform under the Code for Sustainable Homes scheme.

Fig 1 -

This report comprises a pre-assessment of the development against the Code for Sustainable Homes scheme in support of the planning application. It concludes the CSH score and rating that the development can achieve based on the individual credits targeted by the design team.

2. The Code for Sustainable Homes

The Code for Sustainable Homes (CSH) is an environmental assessment method for rating and certifying the sustainability performance of new homes.

It is a national standard for use in the design and construction of new homes with a view to encouraging continuous improvement in sustainable home building. The implementation of the CSH is managed by BRE Global under contract to Communities and Local Government.

The CSH assessment covers nine sustainability categories:

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

Each category includes a number of environmental and sustainability issues, where each issue is assessed against a performance target and awarded one or more credits. The CSH performance targets are more demanding than the minimum standards required to meet Building Regulations or other legislation and represent good or best practice.

The CSH assessment is a two-stage process (design stage and post construction stage) whereby the final rating is determined by a qualified CSH assessor and quality assured and certified by the BRE.

A pre-assessment provides an initial evaluation of the CSH rating likely to be achieved. In addition to demonstrating that sustainability related planning requirements can be met, the results can be used to feed into the design process in order to maximise the score achieved.

Scoring and Mandatory Standards

The CSH level is derived from the total percentage points achieved within each of the nine categories and represented on the certificate by an equivalent number of stars from 1 to 6.

Code Level	Total Percentage Points Score
Level 1 (*)	≥ 36%
Level 2 (**)	≥ 48%
Level 3 (***)	≥ 57%
Level 4 (****)	≥ 68%
Level 5 (*****)	≥ 84%
Level 6 (******)	≥ 90%

In order to achieve particular benchmark ratings there are a number of mandatory requirements within the CSH.

For some credits a single mandatory requirement is set which must be met whatever CSH level rating is sought and credits are not awarded for these issues. There are also credits with increasing mandatory minimum standards which are dependant on the target CSH level as detailed below.

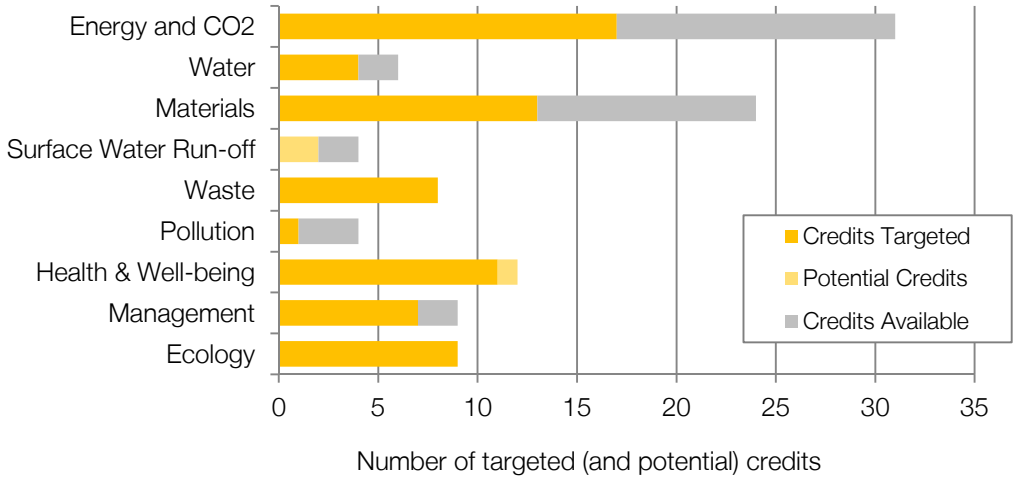
Levels for Mandatory Minimum Standards in Energy and Water		
Code Level	(Ene 1) Min % Improvement over Part L 2010	(Wat 1) Max indoor water consumption (l/person/day)
Level 1 (*)	0%	120
Level 2 (**)	0%	120
Level 3 (***)	0%	105
Level 4 (****)	25%	105
Level 5 (*****)	100%	80
Level 6 (******)	Net Zero CO_2 Emissions	80

Depending on the target rating level by the project, there will also be minimum standards for both the Fabric Energy Efficiency (Ene 2) and Lifetime Homes (Hea 4) credits.

Further credits are available on a free-choice or tradable basis from other issues so that the design team may choose how to add performance credits (converted through weighting to percentage points) to achieve the target CSH rating.

3. Score Summary

The potential CSH score and rating of the development has been determined based on discussions with the design team and is expected to achieve the following:



CSH Category	Credits Available	Credits Targeted	% of Credits Achieved	Section Weighting	Section Score
Energy and CO_2	31	17.0	54.8%	36.4%	19.96
Water	6	4	66.7%	9.0%	6.00
Materials	24	13	54.2%	7.2%	3.90
Surface Water Run-off	4	0	0.0%	2.2%	0.00
Waste	8	8	100.0%	6.4%	6.40
Pollution	4	1	25.0%	2.8%	0.70
Health & Well-being	12	11	91.7%	14.0%	12.83
Management	9	7	77.8%	10.0%	7.78
Ecology	9	9	100.0%	12.0%	12.00
Targeted CSH Score			**69.57**		
Targeted CSH Rating			**Level 4**		
Potential CSH Score			71.84		
Potential CSH Rating			Level 4		

Minimum CSH Standards					
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Yes	Yes	Yes	Yes	No	No

This report demonstrates that the development has met all of the minimum standards and can achieve a CSH Level 4 rating.

4. Pre-Assessment Credit Summary

Energy and CO_2				
Criteria	Available Score	Status	Target Score	Assumptions
Ene 1 Dwelling Emissions Rate				
% Improvement of DER/TER			3.74	Preliminary SAP calculations show a 27% improvement over Part L 2010. This will be achieved through passive design and energy efficient measures, along GSHP. See SWP Energy strategy for further details.
≥ 8%	1.17	Targeted		
≥ 16%	2.34	Targeted		
≥ 25% (Lvl 4)	3.51	Targeted		
≥ 36%	4.68	Not Achievable		
≥ 47%	5.85	Not Achievable		
≥ 59%	7.02	Not Achievable		
≥ 72%	8.19	Not Achievable		
≥ 85%	9.36	Not Achievable		
≥ 100% (Lvl 5)	10.53	Not Achievable		
Net Zero CO_2 Emissions (Lvl 6)	11.70	Not Achievable		
Ene 2 Fabric Energy Efficiency				
End Terrace, Semi-Detached & Detached			4.45	Preliminary SAP calculations show that the average FEE for the dwellings is 56 kWh/m^2/year.
FEE (kWh/m^2/yr)				
≤60	3.51	Targeted		
≤55	4.68	Not Achievable		
≤52	5.85	Not Achievable		
≤49	7.02	Not Achievable		
≤46 (Lvl 5 & 6)	8.19	Not Achievable		
≤42	9.36	Not Achievable		
≤38	10.53	Not Achievable		
Ene 3 Energy Display Devices				
Electricity fuel consumption data is displayed to occupants by a correctly specified energy display device	1.17	Targeted	1.17	Meters with a Code compliant VDU may be provided to record and display electricity and primary heating fuel consumption. The meters must meet all the CfSH criteria and this is to be confirmed by the design team. Energy Display Devices will be specified in accordance with the requirements detailed in Appendix A1.
Primary heating fuel consumption data is displayed to occupants by a correctly specified energy display device	1.17	Targeted	1.17	
Ene 4 Drying Space				
Where the following amount of drying line space and equipment is provided for drying clothes: • 1 – 2 bedroom dwellings = 4m+ • 3+ bedroom dwellings = 6m+ The drying space (internal or external) must be secure	1.17	Targeted	1.17	At least a 6m drying line will be installed in the utility. The utility will be a heated space with controlled intermittent extract ventilation. Extract ventilation will have a minimum extract rate of 30l/s and be controlled according to the requirements for intermittent extract ventilation defined in AD F.

Ene 5 Energy Labelled White Goods				
Fridges and freezers, or fridge-freezers have an A+ rating under the EU Energy Efficiency Labelling Scheme	1.17	Targeted	1.17	A fridge and freezer (or fridge freezer), dishwasher and washing machine will be provided and all products will meet the required EU Energy Efficiency ratings. EU Energy Efficiency Labelling Scheme Information will also be provided to each dwelling in place of a tumble dryer or a washer dryer
Washing machines and dishwashers have an A rating AND EITHER Tumble dryers or washer dryers achieve a B rating OR EU Energy Efficiency Labelling Scheme Information is provided to each dwelling in place of a tumble dryer or a washer dryer	1.17	Targeted	1.17	
Ene 6 External Lighting				
Space Lighting All external space lighting (including lighting in common areas) is provided by dedicated energy efficient fittings (luminous efficacy greater than 40 lumens per circuit watt) with controls to avoid unnecessary use	1.17	Targeted	1.17	Space Lighting External space lighting and lighting to internal common areas will be provided by dedicated energy efficient fittings and fitted with PIR, daylight sensors or time switches to reduce use during daylight. Security Lighting Burglar security lights will be max. 150W and be fitted with movement detecting control devices and daylight cut-off sensors. All other security lights will have dedicated energy efficient fittings and fitted with daylight cut-off sensors or timers.
Security Lighting All burglar security lights have: • A maximum wattage of 150 W • Movement detecting control devices (PIR) • Daylight cut-off sensors All other security lighting: • Is provided by dedicated energy efficient fittings • Is fitted with daylight cut-off sensors OR a time switch	1.17	Targeted	1.17	
Ene 7 LZC Technologies				
The use of LZC technologies achieves a 10% reduction in CO_2 emissions	1.17	Not Achievable	0.00	No credits are awarded as incorporating GSHP can achieve less than 10% reduction in CO2 emissions.
The use of LZC technologies achieves a 15% reduction in CO_2 emissions	1.17	Not Achievable	0.00	

Ene 8 Cycle Storage				
Individual or communal cycle storage is provided, that is adequately sized, secure and convenient, for the following number of cycles: • Studios/1 bed – 1 space per 2 dwellings • 2 / 3 bed – 1 space per dwelling • ≥4 bed + – 2 spaces per dwelling OR	1.17	Targeted	1.17	Safe, secure and weatherproof cycle storage will be provided at the front of the house. according to the number of bedrooms. There will be space for 4 bikes with a minimum size of 2x2.5 +1m2. Stores will be designed in line with the size requirements in Appendix A2.
• Studios/1 bed – 1 space per dwelling • 2 / 3 bed – 2 spaces per dwelling • ≥4 bed – 4 spaces per dwelling	1.17	Targeted	1.17	
Ene 9 Home Office				
Sufficient space for a home office: • Located in a suitable room • 1.8m available wall length • Two double power sockets • Two telephone points (or one point where broadband is available) • Openable window (≥ 0.5m^2) or alternative ventilation • Average daylight factor of ≥1.5%	1.17	Targeted	1.17	Provisions for a home office space are provided in a study. Provisions will be made in accordance with those detailed in Appendix A3.

Water				
Criteria	Available Score	Status	Target Score	Assumptions
Wat 1 Indoor Water Use				
≤ 120 l/p/day (Lvl 1 & 2)	1.50	Targeted	4.5	Water fittings will be specified with the following flow rates to meet the target water consumption of 105 l/p/day: • Wash basin taps - 3 l/min • Baths -1no. 230 litre overflow (master bathroom) 3no.150 litre overflow • Showers - 1no. 13 l/min (master bathroom), 3no. 10 l/min, 1no. 9 l/min, • Dishwasher - 1.0 l/place setting • Washing machine - 7 l/kg load • WC - 4/2.6 litre dual flush • Kitchen taps - 6 l/min
≤ 110 l/p/day	3.00	Targeted		
≤ 105 l/p/day (Lvl 3 & 4)	4.50	Targeted		
≤ 90 l/p/day	6.00	Not Achievable		
≤ 80 l/p/day (Lvl 5 & 6)	7.50	Not Achievable		
Wat 2 External Water Use				
A system to collect rainwater for external/internal irrigation/use has been provided OR The dwelling has no outdoor space	1.50	Targeted	1.50	An underground rainwater tank will be located in the garden, and it is larger than that of minimum requirements. Water collection criteria are detailed in Appendix B1.

Materials				
Criteria	Available Score	Status	Target Score	Assumptions
Mat 1 Environmental Impact of Materials				
Where at least three of the following five key elements of the building envelope achieve a rating of A+ to D in the Green Guide: • Roof • External walls • Internal walls (including separating walls) • Upper and ground floors (including separating floors) • Windows	4.50	Targeted	2.70	The following materials have been proposed: • Roof - timber roof with slate covering (A) • External walls - Masonry (brick / stone) (A+) • Internal walls (including separating walls) - Blockwork (B) • Upper and ground floors - Concrete beam & block construction (including separating floors) (B) • Windows - Timber framed double glazed (A) The Code Mat 1 Calculator Tool has been used to confirm that 9 credits can be achieved.
Mat 2 Responsible Sourcing of Materials – Basic Building Elements				
Where 80% of the assessed materials in the following building elements are responsibly sourced: a) Frame b) Ground floor c) Upper floors (including separating floors) d) Roof e) External walls f) Internal walls (including separating walls) g) Foundation/substructure (excluding sub-base materials) h) Staircase 100% of any timber in these elements must be legally sourced	1.80	Targeted	0.90	The design team are commited to ensuring that materials for finishing elements are sourced to achieve at least 3 credit. This will include timber being FSC/PEFC certified and suppliers having ISO14001 or EMS certification where relevant. Responsible sourcing criteria are detailed in Appendix C1.
Mat 3 Responsible Sourcing of Materials – Finishing Elements				
Where 80% of the assessed materials in the following finishing elements are responsibly sourced: a) Staircase b) Windows c) External & internal doors d) Skirting e) Panelling f) Furniture g) Fascias h) Any other significant use 100% of any timber in these elements must be legally sourced	0.90	Targeted	0.30	The design team are commited to ensuring that materials for finishing elements are sourced to achieve at least 1 credit. This will include timber being FSC/PEFC certified and suppliers having ISO14001 or EMS certification where relevant. Responsible sourcing criteria are detailed in Appendix C2.

Surface Water Run-off				
Criteria	Available Score	Status	Target Score	Assumptions
Sur 1 Management of Surface Water Run-off from Developments				
Minimum Standard 1) Peak rate of run-off Where there is an increase in impermeable area, ensure that the peak rate of run-off over the development lifetime, allowing for climate change, will be no greater for the developed site than it was for the pre-development site 2) Volume run-off Ensure that the post development volume of run-off is no greater than it would have been before the development or reduce the post development peak rate of run-off to the limiting discharge		Targeted		The mandatory requirements will be met, however there are no plans to incorporate SUDS into this development.
There is no discharge from the developed site for rainfall depths up to 5 mm	0.55	Not Achievable	0.00	
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	0.55	Not Achievable	0.00	
Sur 2 Flood Risk				
The development's situated in Zone 1 – low annual probability of flooding AND The site-specific Flood Risk Assessment (FRA) indicates that there is low risk of flooding from all sources	1.10	Potential	0.00	Flood risk assessment may be carried out by FRA to assure that there is at low risk of flooding from watercourses.

Waste				
Criteria	Available Score	Status	Target Score	Assumptions
Was 1 Storage of Non-recyclable Waste and Recyclable Household Waste				
Minimum Standard Adequate external space allocated for waste storage and sized to accommodate containers according to the largest of the following two volumes: • 100 litres for a single bedroom dwelling plus 70 litres for each additional bedroom, OR • The total volume of the external waste containers provided by LA		Targeted		External space will be large enough to meet the requirements. Recycling is collected by the LA in the form of a roadside mixed recycling collection scheme and so a 30l internal storage space will be provided in the kitchen. The mandatory size and accessibility requirements set out in Appendix D1 will be adhered to.
A combination of internal storage capacity provided in an adequate internal space, with either: • a LA collection scheme, or • no LA collection scheme but adequate external storage capacity	3.20	Targeted	3.20	
Was 2 Construction Site Waste Management				
There is a Code compliant Site Waste Management Plan	0.80	Targeted	0.80	A compliant SWMP will be produced and implemented. There will be procedures and commitments to minimise waste generated on site and to sort, reuse and recycle construction waste. Specific SWMP requirements are detailed in Appendix D2.
There is a compliant Site Waste Management Plan including procedures and commitments to sort and divert waste from landfill AND At least 50% by weight or by volume of non-hazardous construction waste generated by the project has been diverted from landfill	0.80	Targeted	0.80	
At least 85% by weight or by volume of non-hazardous construction waste generated by the project is diverted from landfill	0.80	Targeted	0.80	

Was 3 Composting				
Individual home composting facilities are provided OR A local communal or community composting service, which the Local Authority runs or where there is a management plan in place OR A Local Authority green/kitchen waste collection system (this can include an automated waste collection system)	0.80	Targeted	0.80	For this credit to be achieved, external composting facilities will be provided with a composting spaces within the garden.

Pollution				
Criteria	Available Score	Status	Target Score	Assumptions
Pol 1 Global Warming Potential (GWP) of Insulants				
All insulating materials in the elements of the dwelling listed below only use substances that have a GWP < 5 (in manufacture AND installation): • Roofs: including loft access • Walls: internal and external including lintels and all acoustic insulation • Floors: including ground and upper floors • Hot water cylinder: pipe insulation and other thermal stores • Cold water storage tanks: where provided • External doors	0.70	Targeted	0.70	All insulants for the applicable elements will be specified to have a GWP of less than 5. Details of insulants to be considered are covered in Appendix E1.
Pol 2 NOx Emissions				
Dry NOx emissions from all space and hot water heating boilers are: ≤ 100 mg/kWh	0.70	Not Achievable	0.00	The credits are not achievable as NOx emissions from the house exceed 100 mg/kWh.
≤ 70 mg/kWh	0.70	Not Achievable	0.00	
≤ 40 mg/kWh	0.70	Not Achievable	0.00	

Health and Well-being				
Criteria	Available Score	Status	Target Score	Assumptions
Hea 1 Daylighting				
Kitchens achieve a minimum Average Daylight Factor of ≥ 2%	1.17	Potential	0.00	The main kitchen would achieve an ADF 2% however, the second kitchen on the basement needs to be confirmed whether the point is achievable by BRE. It is anticipated that the living room, dining room and study will achieve an ADF of 1.5%. A view of the sky is not assumed to be achievable for all relevant rooms. Credits have been assumed subject to daylighting study which will be required to achieve credits.
Achieve a minimum Average Daylight Factor of ≥ 1.5% in: • Living rooms • Dining rooms • Studies / Home office	1.17	Targeted	1.17	
80% of the working plane of the following has a view of the sky: • Kitchen • Living rooms • Dining rooms • Studies / Home office	1.17	Targeted	1.17	
Hea 2 Sound Insulation				
For party walls: • airborne sound insulation values are at least 3dB higher; • impact sound insulation values are at least 3dB lower; than AD Part E 2003	1.17	Targeted	1.17	The site met the default cases criteria as the house is a detached dwelling. It can achieve 4 credits.
For party walls: • airborne sound insulation values are at least 5dB higher; • impact sound insulation values are at least 5dB lower; than AD Part E 2003 OR Separating walls or floors occur only between non-habitable rooms	2.34	Targeted	2.34	
For party walls: • airborne sound insulation values are at least 8dB higher; • impact sound insulation values are at least 8dB lower; than AD Part E 2003 OR The dwelling is detached	1.17	Targeted	1.17	
Hea 3 Private Space				
There is a provision of a (private or semi-private) outdoor space; • Private: 1.5m^2 per bedroom • Shared: ≥ 1m^2 per bedroom	1.17	Targeted	1.17	The size of garden is significant larger than minimum requirements.
Hea 4 Lifetime Homes				
All principles of Lifetime Homes, applicable to the dwelling being assessed, have been achieved	4.68	Targeted	4.68	Lifetimes Homes is achievable for this house. The approach to all entrances should be level or gently sloping.

Management				
Criteria	Available Score	Status	Target Score	Assumptions
Man 1 Home User Guide				
Provision of a Home User Guide (available in alternative formats)	2.22	Targeted	2.22	A fully Code compliant Home User Guide will be produced by the contractor, covering all sections detailed in Appendix F1.
Where the guide includes additional information relating to the site and its surroundings	1.11	Targeted	1.11	
Man 2 Considerate Constructors Scheme				
Achieve 24 - 34 on the CCS scheme (score ≥ 5 in each of the 5 sections)	0.00	Not Applicable	0.00	The contractor will be required to achieve a score of at least 35 on the CCS scheme (with a score of at least 7 in each of the 5 sections).
Achieve 35 - 39 on the CCS (score ≥ 7 in each of the 5 sections)	2.22	Not Applicable	0.00	
Man 3 Construction Site Impacts				
Where there are procedures that cover two or four or more of the following items:	2.22		2.22	It is currently assumed that four of these measures will be undertaken during construction. The specific undertakings are dependant on the contractor's final choice. Full details on how to achieve these credits are detailed in Appendix F2.
• Monitor, report and set targets for CO_2 production or energy use arising from site activities		Targeted		
• Monitor and report CO_2 or energy use arising from commercial transport to and from site		Targeted		
• Monitor, report and set targets for water consumption from site activities		Targeted		
• Adopt best practice policies in respect of air (dust) pollution arising from site activities		Targeted		
• Adopt best practice policies in respect of water (ground and surface) pollution occurring on the site		Targeted		
• 80% of site timber is reclaimed, re-used or responsibly sourced		Targeted		
Man 4 Security				
An Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA) is consulted at the design stage and their recommendations are incorporated into the design AND Section 2 – Physical Security from 'Secured by Design – New Homes' is complied with (Secured by Design certification is not required)	2.22	Targeted	2.22	An Architectural Liaison Officer or Crime Prevention Design Advisor will be consulted by the design team, and their recommendations will be implemented. The relevant Secure by Design guidance will also be followed.

Ecology				
Criteria	Available Score	Status	Target Score	Assumptions
Eco 1 Ecological Value of Site				
The land is defined as having a low ecological value, using either: Checklist Eco 1 OR Is confirmed by a suitably qualified ecologist OR Where an independent ecological report, prepared by a SQE, confirms the site is of low or insignificant ecological value AND Any land of ecological value outside the construction zone but within the development site will remain undisturbed by the construction	1.33	Targeted	1.33	An ecologist will be appointed and it is expected that they will confirm that the site has low ecological value. The checklist is provided in Appendix G1.
Eco 2 Ecological Enhancement				
Where a suitably qualified ecologist has been appointed to recommend appropriate ecological features that will positively enhance the ecology of the site AND The developer adopts all key recommendations and 30% of additional recommendations	1.33	Targeted	1.33	An ecologist will be appointed to provide recommendations to achieve the credit.
Eco 3 Protection of Ecological Features				
All existing features of ecological value on the site potentially affected by the works are maintained and adequately protected during site clearance, preparation and construction OR Site has a low ecological value AND no features of ecological value have been identified	1.33	Targeted	1.33	An ecologist will be appointed and it is expected that they will confirm that the site has low ecological value. Any features do have values will be protected.
Eco 4 Change in Ecological Value of Site				
The overall change in species per hectare before and after development is: Minor negative change: –9 to ≤–3	1.33	Targeted	1.33	There will be no large changes to the area and landscaping of the development and so a neutral change in ecological value is expected. An ecologist will be appointed to provide recommendations to achieve at least minor enhancement.
Neutral: –3 to ≤ +3	1.33	Targeted	1.33	
Minor enhancement: >+3 to ≤+9	1.33	Targeted	1.33	
Major enhancement:> +9	1.33	Not Achievable	0.00	
Eco 5 Building Footprint				
For houses, NIFA:NIGFA ≥ 2.5:1 OR For flats, NIFA:NIGFA ≥ 3:1	0.00	Targeted	0.00	2 credits can be ahieved as the ratio of NIFA:NIGFA is 3:1
For houses, NIFA:NIGFA ≥ 3:1 OR For flats, NIFA:NIGFA ≥ 4:1	1.33	Targeted	1.33	

5. Conclusion

This pre-assessment report demonstrates that a CSH 4 rating can be achieved, with a score of 69.57%, based on the credits targeted by the design team.

This provides a small buffer over the target score of 68% (the threshold for a Level 4 rating) and, therefore in order to achieve additional credits other potential credits could be reviewed in detail and where possible included in the design.

Appendices

Appendix A - Energy and CO_2
- A1: Ene 3 - Energy Display Devices
- A2: Ene 8 – Cycle Storage
- A3: Ene 9 – Home Office

Appendix B - Water
- B1: Wat 2: External Water Use

Appendix C - Materials
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Appendix D - Waste
- D1: Was 1 – Household Waste and Recycling
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Appendix E - Pollution
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Appendix F - Management
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- F2: Man 3 – Construction Site Impacts

Appendix G - Ecology
- G1: Eco 1 – Ecological Value of Site

Appendix A - Energy

A1: ENE 3 – Energy Display Devices

A correctly specified energy display device meets the following requirements:

As a minimum the visual display unit must be capable of displaying the following information:

- Local time
- Current mains energy consumption (kilowatts and kilowatt hours)
- Current emissions (g/kg CO2)
- Current tariff
- Current cost (in pounds and pence). For pre-payment customers this should be 'real time' data and for 'credit' paying customers cost should be displayed on a monthly basis
- Display accurate account balance information (amount in credit or debit)
- Visual presentation of data (i.e. non-numeric) to allow consumers to easily identify high and low level of usage
- Historical consumption data so that consumers can compare their current and previous usage in a meaningful way. This should include cumulative consumption data in any of the following forms day/week/month/billing period.

A2: ENE 8 – Cycle Storage

Adequately Sized Cycle storage

The requirements for this are as follows:

- The minimum storage area required to store cycles on the floor, defined by the New Metric Handbook which includes space to allow the cycles to be moved independently.
    - 1 cycle: 2m long x 0.75m wide
    - 2 cycles: 2m long x 1.5m wide
    - 4 cycles: 2m long x 2.5m wide

OR

- 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 and meet all other criteria.

- Where cycle storage is provided in a shed a minimum of 1m2 is required for garden tools (in addition to the above dimensions). The shed should be set on a concrete foundation and secure fixing needs to be provided.

- Where cycle storage is provided in a garage, adequate space must be provided to store both the bicycle(s) and the car(s) at the same time.

- For double garages, it must be assumed that each garage space is occupied by a car. Storage areas above should be added to the typical minimum garage sizes below:
    - 2.4m x 4.9m for a single garage; and
    - 5m x 5.2m for a double garage

Convenient Access

The requirements for this are as follows:

- Easy and direct access from/to the dwelling(s) and from/to the cycle store to a public right of way.

- Access from the store to public right of way through the dwelling is not acceptable i.e. where cycles are stored in a shed in the back garden in a mid-terraced home and there is no back garden gate.

- Communal cycle store(s) should be located within 100m (from the front door or the main entrance to a block of flats).

- If for strategic reasons outside the control of the developer the store cannot be located within the required distance, exceptions to the rule may be allowed. Full details must be provided and BRE the Code Service Provider consulted prior to awarding credits.

Cycle Storage

The requirements for this are as follows:

- Cycles may be stored in any of the following:
    - garage or shed
    - external or internal communal cycle store
    - proprietary system

Secure Entrance Lock

The requirements for this are as follows:

- A permanent mortice deadlock or mortice sash lock that conforms to BS 3621:2007 can be used where the door is at least 44mm thick and is locked to the doorframe. Alternatively a ‘sold secure’ Silver Standard padlock with a hasp and staple that are coach bolted through the structure is deemed compliant.

- Where communal cycle storage will be provided within a block of flats, the entrance must be a secure doorset and 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. Note that this room should have no windows.

Secure Fixing

The requirements for this are as follows:

- A ground anchor certificated to ‘Sold Secure’ Silver Standard.

- Where a communal cycle store will be used, a stand must be provided to support the bike, and a secure ground anchor point for each cycle space (certificated to ‘Sold Secure’ Silver Standard). Alternatively a *secure stand* can be provided.

Secure Stand

The requirements for this are as follows:

- A stand which allows both wheel and frame to be locked and must, as a minimum, be of galvanised steel bar construction (with a minimum thickness of 3mm) and have a minimum foundation depth of 300mm with a welded anchor T-bar set in concrete to prevent it being easily removed from the ground.

Secure Storage

The requirements for this are as follows:

- Secure storage is defined as the provision of a fully enclosed solid structure with a secure entrance lock and/or secure fixings depending the situation and solution.
- In individual dwellings:
    - for halls and solid enclosed structures: entrance lock or secure fixing(s)
    - for non-solid structures: entrance lock or secure fixing(s)
    - for non-fully enclosed structures (just three walls and a roof) secure fixing(s) are required
- Blocks of flats and multi dwellings, with communal areas:
    - communal halls and solid enclosed structures: secure entrance lock and secure fixing(s), to enable all cycle(s) to be locked
    - for non-solid structures: entrance lock and secure fixing(s)
    - Where an external container specifically designed for secure cycle storage will be provided it must be certified to LPS 1175 SR 1.

Weather-Proof

The requirements for this are as follows:

- Adequate protection from the elements. This would normally mean at least a roof and three walls.

A3: ENE 9 – Home Office

Adequate Ventilation

The requirements for this are as follows:

- In all cases the room must have an openable window with an openable casement of a minimum of 0.5m2. A room with only an external door will not meet the minimum requirements for adequate ventilation.

Sufficient Services

The requirements for this are as follows:

- The following services must be provided in the *suitable room* intended as a home office:
    - Two double power sockets
    - Two telephone points (or double telephone point) or one telephone point where the dwelling is connected to cable or broadband is available at the address
    - Window (Note: The room chosen to be the nominated home office must have a daylight factor of at least 1.5%)
    - *Adequate ventilation*, either through an openable window or with alternative ventilation such as passive stack, etc.

Sufficient Space

The requirements for this are as follows:

- This is defined as the minimum size (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 side of the desk, use the chair appropriately and operate the filing cabinet safely, (the 1.8m wall size requirement can, in some circumstances, be altered if drawings can prove that a desk can

be fitted in any other type of arrangement, i.e. alcove or similar, fulfilling all the above criteria).

Suitable Room

The requirements for this are as follows:

- For dwellings with three or more bedrooms, a suitable room is a room other than the kitchen, living room or, master bedroom or bathroom.

- For dwellings with one or two bedrooms or studio homes, a suitable room may be in the living room, one of the bedrooms or any other suitable area in the home such as a large hall or dining area (provided the minimum service requirements defined above are met).

- In all cases, the room must be large enough not to prevent the intended use of that room i.e. if a home office is to be set up in the main bedroom that room also needs to be able to fit in a double bed and other necessary furnishing.

Appendix B - Water

B1: WAT 2 – External Water Use

Sufficient Size

Water butt volume requirements for homes with individual gardens, patios and terraces:

- Terraces and patios – 100 litres minimum
- 1–2 bedroom home with private garden – 150 litres minimum
- 3+ bedroom home with private garden – 200 litres minimum

- The above volume requirements can be halved if there is no planting provided and the whole of the external space is covered by a hard surface.

- For houses with a front and a rear garden a water butt is required only in the main (i.e. larger) garden but should meet the capacity requirements above.

Size requirements for communal gardens:

- 1 litre/m2 of land allocated to the dwelling with a minimum of 200 litres per communal garden. Where the communal garden is allocated to more than 6 dwellings, a maximum of 30 litres per dwelling can be applied. The allocated land can either be planted (including grass) or left as unplanted soil and can be either split into plots or communally maintained.

Correctly Specified

The specification of the rainwater collector must meet the following criteria:

- No open access at the top of the collector (a child-proof lid is allowed)

- Provision of a tap or other arrangement for drawing off water

- Connection to the rainwater downpipes with an automatic overflow into the conventional rainwater drainage system

- A means of detaching the rainwater downpipe and access provision to enable the interior to be cleaned

- Where the collection system is to be sited outside, and not buried, it must be stable and adequately supported; the material used for the container shall be durable and opaque to sunlight

- Where the system is part of a rainwater collection system providing internal water, water for external use may be provided in a separate tank to water required for internal use. This could be an overflow pipe leading from the main tank to a correctly specified water butt for external water use.

Appendix C – Materials

C1: MAT 2 - Responsible Sourcing of Materials – Basic Building Elements

80% of the assessed materials in the following Building Elements must be responsibly sourced:

- Frame
- Ground floor
- Upper floors (including separating floors)
- Roof
- External walls
- Internal walls (including separating walls)
- Foundation/substructure (excluding sub-base materials)
- Staircase
- Additionally, 100% of any timber in these elements must be legally sourced

Applicable materials within above elements:

- Brick (including clay tiles and other ceramics)
- Resin-based composite materials, including GRP and polymeric render
- Concrete (including in-situ and pre-cast concrete, blocks, tiles, mortars, cementitious renders etc.)
- Glass
- Plastics and rubbers (including EPDM, TPO, PVC and VET roofing membranes including polymeric renders)
- Metals (steel, aluminum etc.)
- Dressed or building stone including slate
- Timber, timber composite and wood panels (including structural laminated timber components, plywood, OSB, MDF, chip-board and cement bonded particleboard)
- Plasterboard and plaster
- Bituminous materials, such as roofing membranes and asphalt
- Other mineral-based materials, including fibre cement and calcium silicate
- Products with recycled content

Note: Insulation materials, fixings, adhesives and additives are excluded from the assessment.

Compliant responsible sourcing schemes

The following table details all compliant responsible sourcing schemes. The higher the tier achieved by the materials in the building, the higher the score in this section is likely to be, with 1 being the best and 4 the worst.

Responsible Sourcing & Tiers				
Tier Level	Issue Assessed	Points Available per Element	Evidence / Measure Assessed	Examples of Compliant Schemes
1	Legality & Responsible Sourcing	3	Certification Scheme	FSC, CSA, SFI with CoC, PEFC, Reused Materials, Schemes compliant with BES6001:200861 (or similar) Excellent* and Very Good* Performance Ratings
2a	Legality & Responsible Sourcing	2.5	Certification Scheme	Schemes compliant with BES6001:2008 (or similar) 'Good' Performance Rating (
2b	Legality & Responsible Sourcing	2	Certification Scheme	Schemes compliant with BES6001:2008 (or similar) 'Pass' Performance Rating
3	Legality & Responsible Sourcing	1.5	Certification Scheme / EMS	Timber: MTCC, Verified, SGS, TFT Other materials: Certified EMS for the Key Process and Supply Chain Recycled materials with certified EMS for the Key Process
4	Legality & Responsible Sourcing	1	Certification Scheme / EMS	Certified EMS for the Key Process

* Performance ratings for schemes compliant with BES6001:2008 (or similar) can only be used to demonstrate compliance with the assessment criteria for this issue where certification covers the key process and supply chain processes for the material being assessed.

Key process and supply chain (extraction) processes by material type		
Material	Key Process	Supply Chain Processes
Brick (including clay tiles and other ceramics)	Product Manufacture	Clay Extraction
Resin-based composites and materials (including GRP and polymeric render but excluding timber based composites)	Composite product manufacture	Glass fibre production (or other principle matrix material) Polymer production
In situ Concrete (including ready mix and cemetitious mortars and renders)	Ready mixed concrete plant	Cement production Aggregate extraction and production
Precast concrete and other concrete products (including	Concrete product manufacture	Cement production Aggregate extraction and

blocks, cladding, precast flooring, concrete or cementitious roof tiles)		production
Glass	Glass production	Sand extraction Soda Ash production or extraction
Plastics and rubbers (including polymeric renders, EPDM, TPO, PVC and VET roofing membranes)	Plastic/rubber product manufacture	Main polymer production
Metals (steel, aluminum etc)	Metal Product manufacture - e.g. cladding production, steel	Metal production: Steel: Electric arc furnace or Basic oxygen furnace process Aluminium: ingot production Copper: ingot or cathode production
Dressed or building stone (including slate)	Stone product manufacture	Stone extraction
Plasterboard and plaster	Plasterboard or plaster manufacture	Gypsum extraction Synthetic gypsum (from flue gas desulphurisation) by default (recycled content)
Virgin timber and timber products such as laminated veneered lumber, glulam, etc	Timber from certified sources	Timber from certified sources
Cement bonded particle board	Key supply chain process for the production of cement bonded particle board and the associated timber certification(s) are required.	Cement production Timber from certified sources
Wood panel products such as oriented strand board, plywood, chipboard/particle board, etc)	Wood panel products, including those with recycled content, can only use the timber certification route	

C2: MAT 3 - Responsible Sourcing of Materials – Finishing Elements

80% of the assessed materials in the following Finishing Elements must be responsibly sourced as detailed for Mat 02:

- Staircase
- Windows
- External & internal doors
- Skirting
- Panelling
- Furniture
- Fascias
- Any other significant use
- Additionally, 100% of any timber in these elements must be legally sourced

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Appendix D - Waste

D1: WAS 1 – Household Waste and Recycling

Storage of household waste - Mandatory

An adequate external space should be allocated for waste storage and sized to accommodate containers according to the largest of the following two volumes:

- The minimum volume recommended by British Standard 5906 (British Standards Institution, 2005) based on a maximum collection frequency of once per week. This volume is 100 litres for a single bedroom dwelling, with a further 70 litres for each additional bedroom.
- The total volume of the external waste containers provided by the Local Authority.

The following table must be used to demonstrate how the storage meets the mandatory requirements:

Table: Cat 5.1: Supplementary Information Sheet for Was 1 – Storage of Non-recyclable Waste and Storage of Recyclable Household Waste		
Development name:		
Dwelling reference:		
Number of Bedrooms:		
Minimum Requirements of BS 5906:2005 (according to assessment criteria):		
Calculation	Total Volume:	
Local Authority Provision or other (according to assessment criteria):		
Refuse	Dimensions:	Volume:
Recycling 1	Dimensions:	Volume:
Recycling 2	Dimensions:	Volume:
Recycling 3	Dimensions:	Volume:
Recycling 4	Dimensions:	Volume:
Total Volume:		
Space Provided:		
Demonstrate (through the use of drawings) how the space allowed for waste storage has been sized to accommodate the maximum requirements of either the volume of storage provided by the Local Authority or the minimum from BS 5906 (100 litres for a single bedroom plus 70 litres for each additional bedroom).		

Access to storage - Mandatory

Storage space must provide inclusive access and usability in line with Checklist IDP, as follows:

Checklist IDP - Inclusive design principles necessary to provide access and usability to amenities recognised under Was 1, Was 3 and Hea 3				
		Applicability		Tick
Inclusive access and usability requirement	Specifications and dimensions to meet requirement	Typology	Issue	
The following guidelines are drawn from BS 8300:2009, BS 5709:2006, BS 1703:2005, Approved Documents Part M and H				
1) The distance of the inclusive access route, taken as the route between the closest external entrance door and the external amenity (the waste storage space, composting facility or private space for which mandatory elements or credits are being awarded), must be kept to a minimum and be level or gently sloping. In all cases, the inclusive access route towards the waste storage/composting facility/private space must be from the closest external entrance door and be direct and the shortest possible.	Pathways making up any part of the inclusive access route must preferably be level (no gradient exceeding 1:60 and/or no crossfall exceeding 1:40) or gently sloping. Where topography prevents this, a 'gently sloping' pathway must be provided. Maximum gradients permitted dependent on the distance are given below: 1:12 on an individual slope up to 2 metres; 1:13 on an individual slope up to 3 metres; 1:14 on an individual slope up to 4 metres; 1:15 on an individual slope up to 5 metres; 1:16 on an individual slope up to 6 metres; 1:17 on an individual slope up to 7 metres; 1:18 on an individual slope up to 8 metres; 1:19 on an individual slope up to 9 metres; 1:20 on an individual slope of 10 metres, or more than 10 m* *Providing there are top, bottom and intermediate landings of not less than 1.2 m excluding the swing of doors and gates for each 10 metre length of slope. Steps specified in accordance with section 6 of Approved Document Part M are only acceptable on an alternative/secondary route, this secondary route being in addition to the inclusive access route provided to the amenity. Where any part of the inclusive access route is gently sloping (with maximum gradients as set out above), a secondary stepped approach in accordance with section 6 of Approved Document M must also be provided. Note: All dwellings, regardless of site topography, must meet this requirement. Allowance is given for walk-up and basement flats below.	All forms of dwelling – For dwellings with individual entrance doors, an inclusive access route must be provided from the closest entrance door to each amenity (regardless of whether this is a principal or secondary entrance). For blocks of dwellings with communal entrances, this requirement applies to the closest communal entrance door to each amenity (regardless of whether this is a principal or secondary entrance). For walk-up or basement flats with individual external entrances, this requirement applies from the closest external entrance door of the flat to the amenity, regardless of whether the entrance is principal or secondary. In this situation, external stairs are permitted provided they comply with criterion 8.	Was 1, was 3, Hea 3	

2) The inclusive access route from the closest external entrance door must not exceed: a) 50 m walking distance to the private space.	As a principal aim, both private space and composting facilities must be as close to the dwelling or block as possible. Please note that to comply with Part H of the Building Regulations, storage areas for waste containers and chutes should be sited so that the distance householders are required to carry refuse does not usually	All forms of dwelling – as above.	Hea 3	
b) 30 m walking distance to composting facilities.	exceed 30 m. It is not the role of the Code assessor to confirm this.			
3) Any pathways making up part of the inclusive access route must be made of a suitable surface. Those within the curtilage of an individual dwelling must have a minimum width of 900 mm. Communal paths must have a minimum width of 1200 mm.	Suitable surfaces must be firm, slip-resistant and reasonably smooth, and must contrast visually against adjacent surfaces. Surfaces in accordance with section 6 of Approved Document Part M can achieve this requirement.	All forms of dwelling.	Was 1, was 3, Hea 3	
4) Waste containers must be sited on a suitable surface.	As above	All forms of dwelling.	Was 1	
5) There must be space for turning a wheelchair at the amenity.	A turning circle of 1500 mm diameter or a 1700 mm x 1400 mm ellipse is required. This area must be made of a surface in accordance with criterion 3 above.	All forms of dwelling.	Was 1, was 3, Hea 3	
6) The closest external entrance door to the amenity must: a) Have level access over the threshold. b) Have a clear opening width of at least 800 mm (including balcony and roof terrace entrances). The minimum clear opening width of any communal entrances along the inclusive access route must be at least 875 mm.	a) If raised, the threshold must be no higher than 15 mm and is to have as few upstands and slopes as practicable; any upstand in excess of 5 mm in height is to be chamfered. b) For details of how to measure the clear opening width of doors please see Figure 11 of BS 8300:2009.	All forms of dwelling. For dwellings with individual entrance doors, this requirement applies to the closest entrance door to each facility. For blocks of dwellings with communal entrances, this requirement applies to the closest communal entrance door to each amenity.	Was 1, was 3, Hea 3	
c) Be equipped with door opening furniture specified in accordance with section 6.4 of BS 8300:2009.	c) It must be possible to operate all door opening furniture with one hand, without the need to grasp or twist. Door opening furniture used in conjunction with locks and latches must have a lever action.			

7) Gates positioned along the inclusive access route must: a) Have level access over the threshold. b) Have a clear opening width of at least 900 mm.	 a) As 6a above. b) As 6b above. Gates must not be spring loaded and must be operable from both sides.	All forms of dwellings.	Was 1, was 3, Hea 3	
8) Any external stairs that form part of the inclusive access route from walk-up/basement flats to the amenity must provide easy access.	A stepped approach in accordance with section 6 of Approved Document Part M must be provided. The AD sets out the following requirements for a staircase: 1. Has flights whose unobstructed widths are at least 900 mm; 2. The rise of a flight between landings is not more than 1.8 m; 3. Has a top and bottom and, if necessary to comply with the AD, intermediate landings, each of whose lengths is not less than 900 mm; 4. Has steps with suitable tread nosing profiles (see Diagram 27 of Approved Document Part M) and the rise of each step is uniform and between 75 mm and 150 mm; 5. The going of each step is not less than 280 mm, which for tapered treads, must be measured at a point 270 mm from the 'inside' or the tread; and 6. Where the flight comprises three or more risers, there is a suitable continuous handrail on at least one side of the flight. A suitable handrail should have a grippable profile; be between 850 mm and 1000 mm above the pitch line of the flight; and extend 300 mm beyond the top and bottom nosings.	Walk-up or basement flats (providing accommodation above or below the ground floor of the building and with an individual external entrance accessed by external steps).	Was 1, was 3, Hea 3	
9) Communal waste storage and composting facilities must be provided with		All forms of dwelling – communal bin stores/composting facilities only.	Was 1, Was 3	
a) Signs and information specified in accordance with section 9.2 of BS 8300:2009.	a) Visual signs must be provided at the communal waste storage and composting facility giving instructions on how to use the facility (identifying different waste types, collection times etc). Signs must comprise simple words, clearly separated from one another, in short sentences. A sans serif typeface with an x height of at least 15 mm to 25 mm (lower case letter height) to capital height must be used. Any symbols or pictograms used on visual signs must be at least 100 mm in overall height. Letters, symbols and pictograms			

	must contrast visually with the signboard. Signboards must contrast visually with their backgrounds.			
b) Lighting specified in accordance with section 9.4 of BS 8300:2009 with adequately controlled dedicated energy efficient fittings.	b) Artificial lighting systems should be designed to maintain a level of illumination that is suitable for blind and partially sighted people and is compatible with electronic and radio frequency installations. Where artificial lighting is provided, it should use high frequency electronic ballasts to avoid any perception of flicker. Space lighting must meet the requirements of the Ene 6 Issue (capable of only accepting lamps having a luminous efficacy greater than 40 lumens per circuit Watt and controlled by push button time switches/PIR sensors or equivalent).			
10) Switches, sockets and service controls must be at a height usable by all.		All forms of dwelling.		
11) Refuse hoppers** must be located at a height usable by all.		All forms of dwelling.		
** A fitting into which refuse is placed and from which it passes into a chute or directly into a refuse container. The fitting consists of a fixed frame and hood unit and a hinged or pivoted combined door and receiving unit, as defined in British Standard 1703 (British Standards Institution, 2005).				

D2: WAS 2 – Construction Site Waste Management

Checklist Was 2a - Mandatory Requirement
Confirmation that SWMP includes procedures for monitoring site waste and target setting to promote resource efficiency (Adapted from DEFRA, 2008).
Criteria
1) Confirmation that target benchmarks are set to reduce waste generated on site. These should be reported as part of the SWMP implementation and on completion. Waste minimisation targets during the construction process can be set using best practice.
2) Set procedures and commitments to minimize non-hazardous construction waste at design stage. Specify waste minimisation actions relating to at least 3 waste groups and support them by appropriate monitoring of waste.
3) Procedures for minimising hazardous waste.

Checklist Was 2b - Waste Groups

Actions identified to monitoring, reduce, sorting and diverting from landfill site construction waste (fill in where applicable, i.e. waste groups arising on housing project) :

Codes (European Waste Catalogue)	Key Group	Examples
170102	Bricks	Bricks
170101	Concrete	pipes, kerb stones, paving slabs, concrete rubble, precast and in situ
170604	Insulation	Glass fibre, mineral wool, foamed plastic
1501	Packaging	Paint pots, pallets, cardboard, cable drums, wrapping bands, polythene sheets
170201	Timber	Softwood, hardwood, boards products such as plywood, chipboard, medium density fibreboard (MDF)
1602	Electrical and electronic equipment	Electrical & electronic TVs, fridges, air-conditioning units, lamps equipment
	Canteen/office	Office waste, canteen waste, vegetation
	Oils	Hydraulic oil, engine oil, lubricating oil
1703	Asphalt and tar	Bitumen, Coal tars, Asphalt
170103	Tiles and ceramics	Ceramic tiles, clay roof tiles, ceramic, sanitary ware
1705	Inert	Mixed rubble/excavation material, glass
1704	Metals	Radiators, cables, wires, bars, sheet
170802	Gypsum	Plasterboard, render, plaster, cement, fibre cement sheets, mortar
170203	Plastics	Pipes, cladding, frames, non-packaging sheet
	Floor coverings (soft)	Carpets, vinyl flooring
200307	Furniture	Tables, chairs, desks, sofas
	Liquids	Non-hazardous paints, thinners, timber treatments
1705	Soils	Soils, clays, sand; gravel, natural stone
	Hazardous	defined in Environment Agency technical guidance (see www.environment-agency.gov.uk/subjects/waste)
	Architectural Features	Roof tiles, reclaimed bricks, fireplaces
Other/Mixed		Efforts should be made to categorise waste into the above categories wherever possible

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Checklist Was 2C: Diverting from Landfill Construction Waste Generated on Site			
Criteria	**Evidence Demonstrating how Criteria will be Met**	**Reference**	**Tick**
1) Procedures and commitments to sort and divert waste from landfill, either; a. Re-use on site (in situ or for new applications) b. Re-use on other sites c. Salvage/reclaim for re-use d. Return to the supplier via a 'take-back' scheme e. Recovery and recycling using an approved waste management contractor f. Compost g. According to the defined waste groups (according to the waste streams generated by the scope of the works).			
2) Confirmation of the percentage of non-hazardous construction waste generated by the project that has been diverted from landfill			

Appendix E

E1: POL 1 – Global Warming Potential of Insulants

Table: Cat 6.1: Foamed and Non-foamed Insulating Materials	
Foamed Insulation	**Non-foamed Insulation**
Expanded polystyrene	Mineral wool or fibre
Extruded polystyrene	Glass wool or fibre
Polyurethane (PU) insulation	Cork
Cellular glass or foamed glass	Cellulose insulation
Nitrile rubber or elastomeric insulation	Wood fibre board
Phenolic insulation	Wool
Polyisocyanurate foam	Flax
Icynene foam	Recycled newspaper and jute
Tripolymer foam	Straw or strawboard
Foamed polyethylene	

Table: Cat 6.2: Blowing agents deemed to satisfy the issue requirements and/or believed to have a GWP of less than 5
Air
Carbon dioxide (CO2)
Pentane (iso-pentane, cyclopentane, n-pentane)
Isobutene

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Appendix F

F1: MAN 1 – Home Users Guide

Checklist Man 1 - Home User Guide	
Part 1 - Operational Issues **The list below indicates the type of information that should be included**	
a. Environmental strategy/design and features	• Details of any specific environmental/energy design strategy/features including an overview of the reasons for their use (e.g. environmental and economic savings and restrictions on making alterations) and how they should best be operated (where they are not passive features such as insulation and SUDS). Strategies/features could include passive solar design, super insulation, energy efficient timber windows, heat recovery systems, solar hot water systems, photovoltaics, passive vents or the use of certified timber or SUDS within the boundary of individual properties. (Each dwelling will in any case be issued with a copy of the Code Certificate.)
b. Energy	• Information as described in the Building Regulations ADL1A (requirement note c) i.e. Sufficient information about the building, the fixed building services (this should include things like the implication of covering heating outlets with bags etc and other hazards) and their maintenance requirements so that the building can be operated in such a manner as to use no more fuel and power than is reasonable in the circumstances • A way of complying would be to a provide suitable set of operating and maintenance instructions aimed at achieving economy in the use of fuel and power in a way that householders can understand. The instructions should be directly related to the particular system/s installed in the dwelling • The instructions should explain to the occupier how to operate the system(s) efficiently. These should include: the making of seasonal adjustments to control settings and what routine maintenance is needed to enable operating efficiency to be maintained at a reasonable level through the service live/s of the system/s • Details of any renewable system/s and how it/they operate/s • Details of low-energy light fittings, their use and their benefits, e.g. how much energy they save compared to traditional light fittings and what this can mean in terms of reduced energy bills • Details of the EU labelling scheme for white goods • General information on energy efficiency
c. Water Use	• Details of water-saving measures and tips • External water use and efficiency, e.g. the use of water butts or other type of rainwater recycling systems
d. Recycling and Waste	• Information about the Local Authority collection scheme (if applicable) • If the home is not covered by a Local Authority collection scheme, details and location of communal recycling bins/skips/facilities • Information on the location and use of any recycling bins • Information on the location and use of any compost bins • Information on WRAP which can offer guidance on recycling and sustainable waste disposal
e. Sustainable DIY	• Environmental recommendations for consideration in any home improvement works, such as the use of low VOC products or the purchase of certified timber
f. Emergency	• Information on smoke detector/s

Information	
g. Links, References and Further Information	• Include references/links to other information including websites, publications and organisations providing information on how to run the home efficiently and in the best environmentally sound way. As a minimum, this should include links to: – The Energy Saving Trust good practice guidance (*www.est.org.uk/myhome*) – The Local Authority – The company responsible for the construction of the property – The company responsible for the management of the home (where applicable) • In all instances both an address/telephone contact number and a web link will need to be provided
h. Provision of Information in Alternative Formats	• Include details of the procedure for obtaining a copy of the guide in alternative formats, including foreign languages, Braille, large print or audio cassette / CD. It should include the contact details of the person/organisation responsible for producing the guide
Part 2 – Site and Surroundings **The list below indicates the type of information that should be included**	
a. Recycling and Waste	• Information on what to do with waste not covered by the standard weekly Local Authority collection scheme for example fridges/freezers, computer equipment, batteries and other potentially hazardous equipment. In some areas the Local Authority will collect these items. If this is the case details and information of such a collection should be provided • Information and location of local recycling facilities and waste tips
b. Sustainable (Urban) Drainage Systems (SUDS)	• Details of SUDS within the site boundary including an overview of the reasons and benefits behind their use (e.g. prevention of localised flooding) and advice on maintenance and operation
c. Public Transport	• Details of local public transport facilities including maps and timetables and the location of nearby bus stops and/or train/tube stations • Details of cycle storage and cycle paths in the area including, if available, cycle path network maps for the whole town/local area • Details of car parking and information on available park and ride, car sharing schemes and/or car pools/car hire in the area • Details on how to get to local amenities in the area by public transport or cycling
d. Local amenities	• The location of food shops, post boxes, postal facilities, bank/cash points, pharmacies, schools, medical centres, leisure centres, community centres, places of worship, public houses, children's play areas, outdoor open access public areas • Other local amenities such as places of interest/cultural value, areas of beauty / wildlife / conservation / allotments etc.
e. Responsible Purchasing	• Include information about the purchasing of: – Low energy/low water white goods – Electrical equipment, including light fittings and bulbs – Timber products from sustainable sources – Organic food procurement/food growing/local produce/local food provision, e.g. farmers markets, organic box schemes etc
f. Emergency	• Contact details for emergency services including:

Information	– Location of local minor injuries clinics and A&E departments – Location of nearest police/fire station
g. Links, References and Further Information.	• This should include references/links to other information including websites, publications and organisations providing information on how to reduce the environmental impact in terms of transport, the use of local amenities, responsible purchasing etc. Such links/references may include links to: – Sustrans (for cycle networks, www.sustrans.org.uk) – The local authority (including information about recycling and waste tips) – Local transport providers (e.g. bus or train companies) – Local amenities • In all instances both an address/telephone contact number and a web link will need to be provided
By entering a 'YES' against the criteria above, I confirm that all dwellings of this specification type on the ENTER SITE NAME site meet the stated criteria.	
Signature: Date: Print Name:	

F2: MAN 3 – Construction Site Impacts

Checklist Man 3 - Construction Site Impacts
a. Commitment to monitor, report and set targets for CO_2 production of energy use arising from site activities
Criteria
1. Confirmation is required that monthly measurements of energy use will be recorded and displayed on site.
2. Appropriate target levels* of energy consumption must be set and displayed (targets could be annual, monthly, or project targets).
3. As a minimum, monitoring must include checking the meters and displaying some form of graphical analysis in the site office to show consumption over the project duration and how actual consumption compares to the targets set.
4. The design/site management team is to nominate an individual who will be responsible for the monitoring and collection of data.
* Targets for energy consumption during the construction process should be set using DTI's Environmental KPI benchmarks. These documents do not specify targets but facilitate projects in setting appropriate targets (see references section of main credit for further details). Note: The Code does not require targets to be met but is encouraging the process of setting, monitoring and reporting against targets.
b. Commitment to monitor and report CO_2 or energy arising from commercial transport to and from the site
Criteria
1. Confirmation is required that a site monitoring system will be in place to monitor and record deliveries*. This system will need to record:
The number of deliveries
The mode of transport
The kilometres/miles travelled for all deliveries
Where the delivery is specifically for the site, a figure of total distance travelled should be used, i.e. a round trip (from the point of origin, to the site and back to the point of origin).
Where the delivery to the site is part of a multiple delivery route, the recorded figure for distance travelled should be the distance travelled to the site (from the previous delivery), plus the distance to the next delivery or return.
This information can then be used to estimate a total figure for kg of CO_2 for the project. The Code does not require this information to be converted to CO_2 but the information must be made available to the senior project and site management staff/suppliers to establish benchmarks and aid future decision-making towards improving site and transport efficiency. If the project team wishes to convert this information into CO_2 emissions, there are tables provided at the end of this checklist, which can be used.
2. If the design team or contractor confirms that the project is aiming to achieve the "Construction Site Transport" 'measures for traffic movements and distances' (published April 2003, see references) then this aspect has been achieved automatically. The information obtained for this item can also be used to satisfy the DTI's Environmental KPI on transport.

3. The design/site management team is to nominate an individual who will be responsible for the monitoring and collection of data.
* Please see *Tables 1-4* below on monitoring site transport CO_2
c. Commitment to monitor, report and set targets for water consumption arising from site activities
Criteria
1. Compliance is demonstrated by the design/site management team confirming, in writing, that monthly measurements of water consumption will be recorded and displayed on site.
2. Appropriate target* levels of water consumption must be set and displayed (targets could be annual, monthly or project targets).
3. As a minimum, monitoring must include checking the meters and displaying some form of graphical analysis in the site office to show consumption over the project duration and how actual consumption compares to targets set.
4. The design/site management team is to nominate an individual who will be responsible for the monitoring and collection of data.
* Targets for water consumption during the construction process should be set using DTI's Environmental KPI benchmarks. These documents do not specify targets but facilitate projects in setting appropriate targets (see *References and Further Information* for details). Note: The Code does not require targets to be met but is encouraging the process of setting, monitoring and reporting targets.
d. Commitment to adopt best practice policies in respect of air (dust) pollution arising from site activities
Criteria
1. Confirmation is required of the site's procedures to minimise air/dust pollution. This can include:
'dust sheets'
regular proposals to damp down the site in dry weather
covers to skips etc.
2. The site team must indicate how this information is disseminated to site operatives.
Note: Further information can be obtained from DTI/BRE publications 'Control of Dust from Construction and Demolition Activities' and Pollution Control Guide Parts 1-5 provide good practice guidelines on construction related pollution (see *References and Further Information* for details).
e. Commitment to adopt best practice policies in respect of water (ground and surface) pollution occurring on the site
Criteria
1. Confirmation is required of the site's procedures to minimise water pollution following best practice guidelines outlined in the following documents.
PPG 1 - General guide to the prevention of pollution. Environment Agency

PPG 5 - Works in, near or liable to affect watercourses. Environment Agency
PPG 6 - Working at demolition and construction sites. Environment Agency
2. The site team must also indicate how this information is disseminated to site operatives

f. 80% of site timber is reclaimed, re-used or responsibly sourced

Criteria

1. 80% of timber used during construction, including formwork, site hoardings and other temporary site timber used for the purpose of facilitating construction, is to be procured from sustainably managed sources, independently certified by one of the top two levels as set out in the Responsible Sourcing of Materials Issues (Mat 2 and Mat 3) in the Materials section of this document.

Re-used timber from off site can be counted as equivalent but re-usable formwork only complies if it meets the above criteria.

This credit can be awarded where all the timber used is reclaimed timber.

Appendix G

G1: ECO 1 – Ecological Value of Site

Checklist Eco 1: Ecological Value of Site	
General Information: In order for the development to be defined as 'land of low ecological value', the assessor must answer NO to all of the questions in Section 1 and YES to any of the questions in Section 2.	
Section 1: Ecological features of the site	
Instruction: Criteria 1.1-1.5 can be used to determine the presence of existing ecological features across the site. If YES is recorded against **any** question in Section 1 then the site cannot be defined as having *land of low ecological value* and the credit cannot be awarded. If NO is recorded against **all** the questions in Section 1 then proceed to Section 2.	
1.1	Does the site contain any trees or hedges above 1m high or with a trunk diameter greater than 100mm?
1.2	Are there any ponds, streams or rivers on, or running through the site?
1.3	Is there any marsh or other wetland present on the site?
1.4	Are there any meadows or species-rich grassland present on the site?
1.5	Is there any heath land, consisting of heather and/or scrub present on site?
Section 2: Type of land	
Instruction: in addition to answering NO to all the questions in Section 1, if YES is recorded against one or more of the questions in Section 2, the *development site* can be defined as having *land of low ecological value* and the credit can be awarded. (The assessor **MUST** check that these agree with the site drawings.)	
2.1	Does the *development site* consist of land which is entirely within the floor plan(s) of existing building(s) or building(s) demolished within the past two years?
2.2	Does the *development site* consist of land which is entirely covered by other constructions such as sporting hard surfaces, car parking or such constructions which have been demolished within the past two years?
2.3	Does the *development site* consist of land which is contaminated by industrial or other waste to the extent that it would need decontamination before building?
2.4	Does the *development site* consist of land which is a mixture of either existing building, hard surfaces and/or contaminated land?
2.5	Does 80% of the land within the *development site* comply with statements 2.1, 2.2 or 2.3 and the remaining 20% of the *development site* extend into land which has been either; used for single-crop arable farming for at least 5 years, or consists of regularly cut lawns and sports fields?