

# CODE FOR SUSTAINABLE HOMES PRE-ASSESSMENT

7 Upper St. Martin's Lane

LONDON WC2H 9DL

September 2011

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### 1.0 INTRODUCTION

### 1.1 PROJECT DESCRIPTION

7 Upper St. Martin's Lane WC2H 9DL is an existing property located in the Seven Dials conservation area. The property has been previously used as retail and office accommodation with a top floor dwelling. It is now proposed to change use to 4 new residential dwellings, retaining retail space at Basement and Ground Floor levels.

With the creation of new dwellings, a Code for Sustainable Homes pre-assessment rather than an EcoHomes (for refurbished existing dwellings) has been commissioned in order to determine the sustainable aspects of the proposed new dwellings.

This document outlines the methodology by which the two new dwellings shall achieve the Code for Sustainable Homes (CfSH or 'Code') and to what level is practically achievable with consideration to the adoption of existing buildings and the very tight nature of the sites with very little or no additional area between the buildings external walls and site boundary.

With the retail space remaining as existing with exception of structural changes to facilitate the incorporation of the dwellings, a BREEAM assessment has not been undertaken for the retail element. However, any fit-out of the retail area will be encouraged to undertake a BREEAM fit-out assessment.

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# 1.2 THE CODE FOR SUSTAINABLE HOMES

The Code for Sustainable Homes is an environmental assessment rating method. It assesses the environmental performance of commercial property or new homes in a two stage process (Design stage and Post-construction) using objective criteria and verification. The results of the BREEAM and Code assessment are recorded on a certificate assigned to the building or dwelling.

The categories to which dwellings are assessed are as follows:

- Energy and CO2 emissions
- Water
- Materials
- Surface Water Run-off

- Waste
- Pollution
- Health and Wellbeing
- Management
- Ecology

The criteria assigns one or more performance requirements (assessment criteria) to all of the environmental issues. When each performance requirement is achieved, a credit is awarded (except the four mandatory requirements with no associated credits). The total number of credits available to a Category is the sum of credits available for all the issues within it.

Each category is weighted in association with is perceived agenda criticality. The 2010 Code weighting is as follows:

Category	Total Credits Available	Percentage of final score	Weighted value of each
			credit
Energy & CO <sub>2</sub> emissions	31	36.4%	1.17
Water	6	9.0%	1.50
Materials	24	7.2%	0.30
Surface Water Run-off	4	2.2%	0.55
Waste	8	6.4%	0.80
Pollution	4	2.8%	0.70
Health and Wellbeing	12	14%	1.17
Management	9	10%	1.11
Ecology	9	12%	1.33

As can be seen from the above table, efforts made to increase credits in Energy or Water will have a much greater impact on the score than improving a lesser weighted topic such as Materials.

Mandatory minimum performance standards are set for some issues. For three of these, a single mandatory requirement is set which must be met, whatever Code level rating is sought. Credits are not awarded for these

issues. Confirmation that the performance requirements are met for all three is a minimum entry requirement for achieving a Level 1 rating. The three un-credited issues are:

- Environmental impact of materials
- Management of surface water run-off from developments
- Storage of non-recyclable waste and recyclable household waste

If the mandatory minimum performance standard is met for the three un-credited issues, four further mandatory issues need to be considered. These are agreed to be such important issues that separate Government policies are being pursued to mitigate their effects. For two of these, credits are awarded for increasing levels of achievement recognised within the Code.

The two issues with increasing mandatory minimum standards are:

- Dwelling emission rate
- Indoor water use.

The final two issues with mandatory requirements are Fabric Energy Efficiency and Lifetime Homes. To achieve an overall Code rating of level 5 it is necessary to achieve at least 7 credits in Ene 2. To achieve an overall Code rating of level 6 it is necessary to achieve at least 7 credits in Ene 2 and 3 credits in Hea 4 – Lifetime Homes.

# 2.0 CODE FOR SUSTAINABLE HOMES PRE-ASSESSMENT

# 2.1 RESULTS SUMMARY

The credits to be targeted are as agreed with the professional team and MSMR Architects Limited. These credits result in a score of **58.99%** which results in a **LEVEL 3** rating although leaves little room for loss of credits as the threshold for a level 3 is **57 points**.

The level achieved is unlikely to be improved due to the constraints associated with the existing nature of the site. Sustainability factors such as re-use of an existing building and the substantially reduced carbon emissions required to convert as opposed to undertaking a similar sized new construction project should be considered alongside this score.

Category	Percentage of credits achieved	Overall contribution to score
Energy	41.93%	15.26 points
Water	66%	6 points
Materials	50%	3.6 points
Surface Water Run-off	50%	1.1 points
Waste	100%	6.4 points
Pollution	100%	2.8 points
Health and wellbeing	41%	5.83 points
Management	100%	10 points
Ecology	66%	8 points

A breakdown of performance is as follows:

# 3.0 CODE FOR SUSTAINABLE HOMES DESIGN GUIDANCE

### 3.1 INTRODUCTION

This section provides guidance to meeting the selected criteria for achieving the Code for Sustainable Homes level 3, specific to the proposed conversion of existing office accommodation into four new dwellings at 7 Upper St. Martin's Lane, London.

Where the credit states 'Mandatory Credit' adjacent to the heading, its compliancy is not optional. Failure to comply the remaining credits will require other credits previously ruled out as part of the initial pre-assessment meeting to be re-evaluated in order to retain the Level 3 rating.

### 3.2 ENERGY

# 3.2.1 ENE 1 – DWELLING EMISSION RATE

Targeted 2 credits representing a 16% improvement over 2010 building regulations.

Credits are awarded based on the percentage improvement in the Dwelling Emission Rate (DER), (estimated carbon dioxide emissions in kg per m2 per annum arising from energy use for heating, hot water and lighting for the actual dwelling), over the Target Emission Rate (TER) (the maximum emission rate permitted by Building Regulations), for the dwelling where DER and TER are as defined in AD L1A 2010 Edition of the Building Regulations.

In order to determine compliancy with this credit, SAP 2009 calculations are required. A target of 16% improvement is in place to achieve 2 of the 10 credits available.

The following methodology should be adopted to achieve this requirement:

- Super-insulating the existing fabric beyond Building Regulations standards.
- High performance glazing
- Exploring renewable and low carbon energy supplies
- Solar energy used where possible (Building is in a dense urban area, restricting available surface area)
- Low energy light fittings throughout
- Very high level of air tightness
- Whole house heat recovery ventilation system with ultra low power fan.

# 3.2.2 ENE 2 – BUILDING FABRIC

Credits are awarded based on the fabric energy performance, measured in kWh/m²/yr.

All 4 apartments are targeted to achieve 48kWh/m²/yr

The above target results in a score of 3 credits under this criteria for each property. This criteria can be achieved by super-insulating the property as noted under Ene 1.

SAP 2009 calculations shall be required to demonstrate compliance with the above.

# 3.2.3 ENE 3 – ENERGY DISPLAY DEVICES

Credits are awarded for the specification of a device which displays the energy being used within the property. For this project, it is proposed to provide a device which monitors both the electricity supply as well as gas, the primary heating fuel for the dwellings.

### Correctly Specified Energy Display Device

It is imperative that the correct type of device is specified. This would be a system comprising a self-charging sensor(s) 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 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.

This would achieve 2 of the available 2 credits under this criteria.

### 3.2.4 ENE 4 – DRYING SPACE

Credits are awarded based on the provision for drying space for each dwelling type Where space with posts and footings or fixings capable of holding 4m+ of drying line for 1–2 bed dwellings, and 6m+ of drying line for 3+ bed dwellings, is provided for drying clothes. The space (internal or external) should be secure.

A fixed internal device with greater than 6m of drying line is required to achieve the credit targeted under this criteria. With the additional bedrooms this dwelling had, it may be prudent to provide a larger device, although this is not a requirement to achieve this credit.

This achieves the 1 credit available for this criteria.

# 3.2.5 ENE 5 – ENERGY LABELLED WHITE GOODS

Credits are awarded where information is provided relating to the provision of energy efficient white goods, or where energy efficient white goods are supplied in accordance with the criteria in the table below for each dwelling:

A credit is available where the following appliances are provided and have an A+ rating under the EU Energy Efficiency Labelling Scheme:

• Fridges and freezers or fridge-freezers

A credit is available where the following appliances are provided and have an A rating under the EU Energy Efficiency Labelling Scheme:

• Washing machines and dishwashers

#### AND EITHER

• Washer-dryers or tumble dryers have a B rating

OR

 Where washer-dryers or tumble dryers are not provided, information on the EU Energy Labelling Scheme is provided to each dwelling where this is the case. Note: Where washer dryers are provided it is not necessary to provide a washing machine to obtain this credit

ALTERNATIVELY, a credit is available If no (or not all) white goods are provided but information on the EU Energy Efficiency Labelling Scheme of efficient white goods is provided to each dwelling where this is the case In order to award credits, any white goods provided must be compliant with the above criteria (even if not all white goods listed above are provided).

The aforementioned EU Energy efficiency labelling information is to be provided on this scheme. This shall achieve 1 of the 2 available credits.

# 3.2.6 ENE 6 – EXTERNAL LIGHTING

Where all external lighting within the development is provided by dedicated energy efficient fittings, as follows:

### Space Lighting

Where all external space lighting, including lighting in the common areas, is provided by dedicated energy efficient fittings.

Note: Statutory safety lighting is not covered by this requirement.

### **Security Lighting**

Where all security light fittings are designed for energy efficiency and are adequately controlled such that:

### All burglar security lights have:

• A maximum wattage of 150 W

# AND

Movement detecting control devices (PIR)

### AND

Daylight cut-off sensors

#### All other security lighting:

Has dedicated energy efficient fittings

### AND

· Is fitted with daylight cut-off sensors OR timers

### **Default Cases**

If no security lighting is installed, then the security lighting credit can be awarded by default, provided all the conditions of the first issue covering space lighting have been met. Dual lamp luminaires with both space and security lamps can be awarded both credits provided they meet the above criteria for energy efficiency.

No security lighting is required for these properties and the lantern to be provided adjacent to the front door shall meet with the required criteria, achieving 2 of the available 2 credits.

# 3.2.7 ENE 7 – LOW OR ZERO CARBON TECHNOLOGIES

Credits are awarded based on the percentage reduction in total carbon emissions that result from using Low or Zero Carbon (LZC) Energy Technologies for each dwelling using the calculation method detailed in Calculation Procedures, with credits awarded as detailed below:

- There is a 10% reduction in CO2 emissions as a result, 1 credit
- There is a 15% reduction in CO2 emissions as a result, 2 credits.

These properties are not targeted to achieve this level of reduction due to the small available roof space and lack of plant space. An assessment of renewable technology has been carried out separate to this report.

### 3.2.8 ENE 8 – CYCLE STORAGE

Credits are awarded where adequately sized, safe, secure, convenient and weatherproof cycle storage is provided for each dwelling.

Provision is to be made to provide 1 cycle space for each dwelling. It is noted that the location of the cycle storage is not ideal and that this is due to constraints associated with the existing building.

### 3.2.9 ENE 9 – HOME OFFICE

Credits are awarded on the basis of the provision of space and services that enable a room to be used effectively as a home office.

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.

Suitable space 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).

The 3 bedroom duplex has a defined study area. The three mid floor apartments have second bedrooms of sufficient size to allow this credit to be achieved subject to the provision of adequate electrical / telecoms points and compliant daylight provision.

# 3.3 WATER

### 3.3.1 WAT 1 – INDOOR WATER USE

MANDATORY CREDIT - Maximum 105 litres per person per day water consumption - 3 CREDITS

Up to 5 credits are available for performance which reduces the amount of potable water used in the dwelling. There are minimum mandatory performance requirements for achieving all levels of the Code. The minimum mandatory requirements begin at level 1 increasing at level 3 and again at level 5.

Credits are available for all the indoor potable water performance levels required in the Code. Credits are awarded based on a whole house assessment of the efficiency of internal water fittings against a benchmark figure. The assessment is measured in litres per person per day using the Water Efficiency Calculator for New Dwellings.

As noted, this credit is not optional. To comply with this credit, we would recommend 2/4 litre flush WC's, basins with taps limited to 1.7 l/min flow, Kitchen sinks limited to 3l/min flow, showers limited to 9l/min flow, baths with max capacity of 170l and specification and installation of low water use washing machine & dishwashers.

### 3.3.2 WAT 2 – EXTERNAL WATER USE

One credit is awarded for providing a system to collect rainwater for use in irrigation.

This credit is awarded by default as there is no external space allocated to any of the four properties.

# 3.4 MATERIALS

### 3.4.1 MAT 1 - ENVIRONMENTAL IMPACT OF MATERIALS

#### MANDATORY CREDIT

There is a mandatory requirement with no available credits to achieve a Green Guide rating of between A+ and D for at least three of the following five elements of the building envelope:

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

Between 1 and 15 credits are available depending on the Green Guide ratings and relative distributions of different materials across the five main elements of the building envelope.

A predicted final score of 8 out of 15 credits has been used which would be achieved by the specification of the following:

**ROOF:** Use of A+ rated materials throughout where refurbished or replaced.

External Walls: Use of A rated materials on at least 80% of the construction, remainder D. Note - re-use of facade is A+ rated.

Internal Walls: Use of A rated material for at least 60% of the construction with the remainder at least B rated.

Floors: Use of B rated materials throughout (where not existing).

Windows: Use of B rated materials throughout.

With most of the floors and external walls being retained – 8 credits are to be targeted as a minimum.

# 3.4.2 MAT 2 - RESPONSIBLE SOURCING OF MATERIALS - BASIC BUILDING ELEMENTS

Credits are awarded where materials used in key building elements are responsibly sourced according to the following:

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

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

Compliant responsible sourcing accreditation includes:

- CSA Canadian Standards Association
- EMS Environmental Management System
- EMAS Eco-Management and Audit Scheme
- EPDM Ethylene propylene Diene Monomer
- FSC Forest Stewardship Council
- MTCC The Malaysian Timber Certification Council
- PEFC Programme of Endorsement of Forest Certification Schemes
- SGS Sociéte Générale de Surveillance. A Swiss based private monitoring company
- SFI Sustainable Forestry Initiative
- TFT Tropical Forest Trust

Verified "Verified" is a scheme produced by SmartWood

Note: Recycled materials are not required to demonstrate a Supply Chain EMS. If EMS certification is provided for the Key Processes for recycled materials, this is assumed by default.

3 out of the 6 credits are sought from this criteria. The specification of materials must be wherever possible available from responsible sources and requirements made of the contractor via specification documentation that materials are to be responsibly sourced and supply chain paperwork / certification is to be provided. Failure to provide this evidence will result in credits being withheld.

### 3.4.3 MAT 3 – RESPONSIBLE SOURCING OF MATERIALS – FINISHING ELEMENTS

Up to 3 credits are available where 80% of the assessed materials in the following Finishing Elements are responsibly sourced:

- a) Stair
- b) Window
- c) External & internal door
- d) Skirting
- e) Panelling
- f) Furniture
- g) Fascias
- h) Any other significant use

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

Responsible sourcing is as described in the preceding subsection.

1 out of the 3 credits are to be achieved. The specification of materials will be wherever possible available from responsible sources and requirements made of the contractor via specification documentation that materials are to be responsibly sourced and supply chain paperwork / certification is to be provided. Failure to provide this evidence will result in credits being withheld.

# 3.5 SURFACE WATER RUN-OFF

# 3.5.1 SUR 1 – MANAGEMENT OF SURFACE WATER RUN-OFF FROM DEVELOPMENTS

### MANDATORY CREDIT

Mandatory Elements must be achieved. There are up to 2 credits are available for further improving management of rainfall runoff.

### MANDATORY ELEMENTS (No credits are available)

### 1) Peak Rate of Runoff

Ensure that the peak rate of runoff into watercourses is no greater for the developed site than it was for the predevelopment site. This should comply with the Interim Code of Practice for Sustainable Drainage systems (SUDS) (CIRIA, 2004) or for at least the 1 year and 100 year return period events.

### Calculation Criteria:

- For sites of less than 200ha, the calculation of Greenfield runoff rates should be in accordance with Flood estimation for small catchments (Marshall and Bayliss, 1994) and any subsequent updates.
- For sites of 200ha and more, the calculation of Greenfi eld runoff rates should be in accordance with the Flood Estimation Handbook (Centre for Ecology and Hydrology, 1999) and any subsequent updates.
- An allowance for climate change should be made in accordance with current best practice (PPS25, 2006).

### 2) Volume of Runoff

Ensure that the additional predicted volume of rainwater discharge caused by the new development, for a 1 in 100 year event of 6 hour duration including an allowance for climate change (PPS25, 2006), is entirely reduced

using:

Infiltration

### AND / OR

• Is made available for use in the dwelling as a replacement for potable water use in non-potable applications such as WC flushing or washing machine operation.

Any residual additional rainwater volume that cannot be prevented from being discharged (reasons must be provided with supporting evidence), for all events up to the 100-year return period, the peak discharge rate from the site should be reduced to (in order of priority):

A: the pre-development site's estimated mean annual flood flow rate (Qbar); or

B: 2l/s/ha; or

C: a minimum flow rate (litres per second), based on good practice guidelines to prevent easy blockage, by ensuring the outlet throttle is not too small; unless rainwater is being discharged to a public sewer or adopted surface water sewer, and there is a specific minimum requirement defined by the Sewerage Undertaker.

Note; reasons for discounting any of the options above must be provided with supporting evidence.

Once the mandatory requirements are achieved, 2 credits are available for using SUDS to improve water quality of the rainwater discharged or for protecting the quality of the receiving waters by:

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

OR

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

Site restrictions prevent a Code compliant SUDS being developed for this site. Mandatory requirements shall be met. Therefore no credits shall be scored but the mandatory requirements shall still be complied with.

# 3.5.2 SUR 2 – FLOOD RISK

Up to 2 credits are awarded where the assessed dwelling is located either in an area of low annual probability of flooding, or where a Flood Risk Assessment (FRA) shows that appropriate measures have been taken to ensure safe access and escape routes and flood resilient and resistant construction.

This site is outside the flood risk zone identified by the Environment Agency flood maps. Therefore 2 of the available 2 credits are targeted. Note that a flood risk assessment (FRA) in compliance with PPS25 shall be required to demonstrate this.

### 3.6 WASTE

### 3.6.1 WAS 1 – STORAGE OF NON-RECYCLABLE AND RECYCLABLE HOUSEHOLD WASTE

#### MANDATORY CREDIT

The first issue of household waste storage sets a mandatory performance requirement with no available credits. This requirement must be met if a Code rating is to be achieved. Adequate internal space and adequate external space are defined as:

#### Adequate External Space

Refers to outdoor space supplied for storing non-recyclable waste and recyclable materials. External recycling bins should be located on level hard standing and must be covered and within a reasonable distance of the external door to the dwelling / block of flats.

#### **Adequate Internal Space**

Refers to indoor space supplied for storing non-recyclable waste and recyclable materials. Internal recycling bins should be located in a dedicated non obstructive position. This should be in a cupboard in the kitchen, close to the non-recyclable waste bin, or located adjacent to the kitchen in a utility room or connected garage. Free-standing recycling bins placed directly on the floor or in a cupboard do not comply.

Care should be taken to make sure that facilities are accessible to disabled people.

#### Storage of household waste (Mandatory)

The space allocated for waste storage should be able to accommodate containers with at least the minimum volume recommended by British Standard 5906 (British Standards, 2005) based on a maximum collection frequency of once per week. This is 100 litres volume for a single bedroom dwelling, with a further 70

litres volume for each additional bedroom. A Local Authority recycling scheme offering containers equal to or greater than this volume would meet the requirement, providing adequate external space is allocated to accommodate them. If the Local Authority provides containers with a smaller volume, or if no Local Authority scheme exists, the developer will need to ensure and demonstrate that the minimum volume according to BS 5906 2005 and defined above, is met. All containers must be accessible to disabled people, particularly wheelchair users, and sited on a hard, level surface. To ensure easy access, the containers must not be stacked.

### 4 Credits are gained where in addition to the Mandatory Requirement:

A combination of internal storage capacity provided in an adequate internal space, with either:

- A Local Authority collection scheme; or
- No Local Authority collection scheme but adequate external storage capacity.

### Local Authority Collection Scheme

In addition to a Local Authority Collection Scheme (with a collection frequency of at least fortnightly) at least one of the following requirements must be met:

- Where recyclable household waste is sorted after collection and at least a single 30 litre bin is provided in an adequate internal space.
- Where materials are sorted before collection and at least three separate bins are provided with 30 litres total capacity. Every bin must have a capacity of at least 7 litres and be located in an adequate internal space.
- An automated waste collection system which collects at least 3 different types of recyclable waste.

### No Local Authority collection scheme but adequate external storage capacity

For houses and flats, there must be at least 3 identifiably different internal storage bins for recyclable waste, located in an adequate internal space:

- With a minimum total capacity of 30 litres
- Where every bin has at least 7 litres capacity

### AND

For houses, an adequate external space must be provided for storing, at least, three external bins for recyclable waste:

- With a minimum total capacity of 180 litres
- With no bin smaller than 40 litres
- All bins should be located within 30m\* of an external door

For blocks of flats, a private recycling scheme operator must be appointed to maintain bins and collect recyclable waste regularly. Recycling containers must:

- Be located in an adequate external space
- Be sized according to the frequency of collection, based on guidance from the recycling scheme operator
- Store at least 3 types of recyclable waste in identifiably different bins
- Be located within 30m\* of an external door

\* Where strategic reasons outside the control of the developer make it impossible to meet this requirement, the maximum allowable distance is 50m, and a written justification must be provided to the Code Assessor.

On the basis that a local recycling scheme is provided and that suitable bins are to be installed, 4 credits are awarded. Details of the local authority collection scheme shall be required and mandatory criteria relating access and size is to be complied with.

# 3.6.2 WAS 2 – CONSTRUCTION SITE WASTE MANAGEMENT

### MANDATORY CREDIT

#### Mandatory Element:

A Site Waste Management Plan must be developed and implemented. This will require:

Monitoring and reporting of waste generated on site in defined waste groups, and compliance with legal requirements as set in SWMP regulations 2008 for and with best practice. The plan should include the setting of

targets to promote resource efficiency in accordance with guidance from WRAP, Envirowise, BRE and DEFRA. Specific quantitative targets are not set within this Technical Guidance. It is the responsibility of the client and/or the principal contractor (as defined by the SWMP regulations 2008) to ensure that appropriate targets are set for the site.

### 2 credits available for Minimising Construction Waste:

The Site Waste Management Plan must include procedures and commitments for reducing waste generated on site in accordance with best practice and the defined waste groups.

#### AND

The Site Waste Management Plan must include procedures and commitments to sort and divert waste from landfill (reuse, recycle, compost or otherwise recover) according to the defined waste groups. This must be performed either on site or through a licensed external contractor, in accordance with best practice.

Site waste management plan is to include:

- Monitoring of waste generated on site
- Targets to promote resource efficiency
- Details of each waste group

- Compliance with best practice
- Procedures for reducing waste
- Commitments for reducing waste
- Procedures to sort, reuse and recycle waste
- Commitments to sort, reuse and recycle waste

# Waste Groups include:

- Bricks
- Concrete
- Insulation
- Packaging
- Timber
- Electrical and Electronic equipment
- Canteen / office / ad-hoc waste
- Oils
- Asphalt and tar
- Tiles and ceramics
- Inert
- Metals
- Gypsum
- Plastics
- Soft floor coverings
- Furniture
- Liquids
- Soils

- Hazardous
- Architectural features
- Other / Mixed

The Site Waste Management Plan shall include all necessary criteria to achieve the mandatory and 2 additional credits. The requirement for this must be made to whoever shall be compiling the SWMP and tendering contractor where they are not the same.

# 3.7 POLLUTION

# 3.7.1 POL 1 – GLOBAL WARMING POTENTIAL (GWP) OF INSULANTS

Credits are awarded where all insulating materials in the elements of the dwelling listed below only use substances that have a GWP < 5 (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

This credit is to be achieved

# 3.7.2 POL 2 – NOX EMISSIONS

Credits are awarded where heat generating appliances achieve low NOx (Emissions of Nitrous Oxides) levels as follows, when measured at 0% O<sub>2</sub>.

- Equal to or less than 100mg/kWh or boiler class 4 (BSEN 297:1994) achieves 1 credit.
- Equal to or less than 70mg/kWh or boiler class 5 (BSEN 297:1994) achieves 2 credits.
- Equal to or less than 40mg/kWh achieve 3 credits.

Nitrous Oxides are contributors to poor air quality in built up areas and can lead to formation of smog.

Boilers are to be installed which achieve an in operation NOx emissions of less than 40mg/kWh

# 3.8 HEALTH AND WELLBEING

### 3.8.1 HEA 2 – SOUND INSULATION

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

Where:

- Airborne sound insulation values are at least 3dB higher
- Impact sound insulation values are at least 3dB lower

The above achieves 1 credit.

#### OR

- Airborne sound insulation values are at least 5dB higher
- Impact sound insulation values are at least 5dB lower

The above achieves 3 credits.

OR

- Airborne sound insulation values are at least 8dB higher
- Impact sound insulation values are at least 8dB lower

The above achieves 4 credits.

The above values represent an improvement over the performance standards set out in the Building regulations approved for England and Wales, Approved Document E (2003 Edition, with amendments 2004).

#### This can be demonstrated through EITHER

A programme of pre-completion testing based on the Normal programme of testing described in Approved Document E, for every group or sub-group of houses or flats, demonstrating that the above standard or standards are achieved.

OR

Use of constructions for all relevant building elements that have been assessed and approved by Robust Details Limited (RDL), and found to achieve the performance standards stated above and all relevant dwellings are registered with RDL.

With consideration of existing structure, the target additional improvement of 3dB is to be pursued on this project to achieve 1 credit. This can be achieved via following guidance provided by an acoustic consultant or, if possible, using 'Robust Details'.

### 3.8.2 HEA 4 – LIFETIME HOMES

Where all principles of Lifetime Homes, applicable to the dwelling being assessed, have been complied with as follows:

1). Where there is car parking adjacent to the home, it should be capable of enlargement to attain 3300mm width (No car parking available on site)

2). The distance from the car parking space to the home should be kept to a minimum and should be level or gently sloping (No car parking available on site)

- 3). The approach to all entrances should be level or gently sloping
- 4). All entrances should:
  - a). be illuminated
  - b). have level access over the threshold and
  - c). have a covered main entrance (May not be possible)

5). Communal stairs should provide easy access and where homes are reached by a lift, it should be fully accessible (No communal stairs)

6). The width of the doorways and hallways should conform to the required specification.

7). There should be a space for turning a wheelchair in dining areas and living rooms and adequate circulation space for wheelchairs elsewhere

8). The living room should be at entrance level

9). In houses of two or more storeys, there should be space on the entrance level that could be used as a convenient bed-space.

- 10). There should be;
  - a). a wheelchair accessible entrance level WC, with
  - b). drainage provision enabling a shower to be fitted in the future
- 11). Walls in bathrooms and toilets should be capable of taking adaptations such as handrails

- 12). The design should incorporate;
  - a). provision for a future stair lift

b). a suitably identified space for a through-the floor lift from the ground to the first floor, for example to a bedroom next to a bathroom

- 13). The design should provide a reasonable route for a potential hoist from a main bedroom to the bathroom
- 14). The bathroom should be designed to incorporate ease of access to the bath, WC and wash basin

15). Living room window glazing should begin at 800mm or lower and windows should be easy to open/operate

16). Switches, sockets, ventilation and service controls should be at a height usable by all (i.e. between 450 and 1200mm from the floor)

The above items are targeted for compliance and thus 3 to 4 of 4 credits have been provisionally awarded. It should be noted however that some adjustments may be required to achieve this criteria and streetscape arrangement will prevent the requirement for a covered entrance to be achieved.

### 3.9 MANAGEMENT

### 3.9.1 MAN 1 – HOME USER GUIDE

Up to 3 credits are awarded for the provision of a simple user guide which covers information relevant to the 'non-technical' tenant/owner on the operation and environmental performance of their home.

This is to be achieved and detailed information on what is to be included to achieve the targeted 3 credits can be provided on request.

# 3.9.2 MAN 2 – CONSIDERATE CONSTRUCTORS SCHEME

Credits are available for achievements in relation to the considerate constructors scheme. 2 credits are targeted for the contractor to achieve a score of 32 or higher, with a minimum score in each section of 3.

This requirement must be made known to the tendering contractors and proof that they have experience in achieving this should be included in the selection process.

# 3.9.3 MAN 3 – CONSTRUCTION SITE IMPACTS

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

### 2 Credits are sought and the following are to be undertaken to achieve this:

- Monitor, report and set targets for CO2 production or energy use arising from site activities
- Monitor and report CO2 or energy use arising from commercial transport to and from site
- Monitor, report and set targets for water consumption from site activities
- Adopt best practice policies in respect of air (dust) pollution arising from site activities
- Adopt best practice policies in respect of water (ground and surface) pollution occurring on the site
- 80% of site timber is reclaimed, re-used or responsibly sourced

This requirement must be made known to the tendering contractors and proof that they have experience in achieving this should be included in the selection process.

# 3.9.4 MAN 4 – SECURITY

2 Credits are achieved by complying with Section 2 – Physical Security from 'Secured by Design New Homes', as follows:

 Where an Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA) from the local police force is consulted at the design stage and their recommendations are incorporated into the design of the dwelling (an actual Secured by Design Certificate is not required).

MSMR to commence liaison with an ALO or CPDA at the next stage.

# 3.10 ECOLOGY

# NOTE – AN ECOLOGIST SHALL BE REQUIRED TO BE APPOINTED PRIOR TO COMMENCEMENT ON SITE

# 3.10.1 ECO 1 – ECOLOGICAL VALUE OF SITE

1 credit is awarded as the land is fully developed in its current state and has a low ecological value.

# 3.10.2 ECO 2 – ECOLOGICAL ENHANCEMENT

1 credit is awarded for a commitment to appoint a suitably qualified ecologist and adopt all key recommendations and 30% of other recommendations.

# 3.10.3 ECO 3 – PROTECTION OF ECOLOGICAL FEATURES

1 credit is awarded as the land is fully developed in its current state and has a low ecological value. Any remaining items of ecological value as identified by the Ecologist shall be protected.

# 3.10.4 ECO 4 – CHANGE OF ECOLOGICAL VALUE OF SITE

2 of the 4 available credits are awarded as a neutral change in ecological value is to be targeted.

# 3.10.5 ECO 5 – BUILDING FOOTPRINT

1 credit is awarded as a dwelling to footprint ratio for a house of 2.5 will be achieved for both properties.