

## **Church House Building Sustainability**

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### **THE CODE FOR SUSTAINABLE HOMES PRE-ASSESSMENT**

SOLUM REGENERATION PARTNERSHIP

Proposed Mixed-Use Development  
Twickenham Station  
London

28/04/11

Revision C

PB/JL/9090

## CONTENTS

### 1.0 INTRODUCTION

### 2.0 THE CODE FOR SUSTAINABLE HOMES

### 3.0 MANDATORY REQUIREMENTS

#### 3.1 ENERGY AND CO<sub>2</sub> EMISSIONS

#### 3.2 WATER – INTERNAL CONSUMPTION

#### 3.3 MATERIALS

#### 3.4 WATER – SURFACE RUN-OFF

#### 3.5 WASTE – HOUSEHOLD

#### 3.6 WASTE – CONSTRUCTION

### 4.0 TRADABLE REQUIREMENTS

#### 4.1 ENERGY AND CO<sub>2</sub> EMISSIONS

#### 4.2 WATER

#### 4.3 MATERIALS

#### 4.4 SURFACE WATER RUN-OFF

#### 4.5 WASTE

#### 4.6 POLLUTION

#### 4.7 HEALTH AND WELLBEING

#### 4.8 MANAGEMENT

#### 4.9 ECOLOGY

### 5.0 CODE FOR SUSTAINABLE HOMES VERSION

### 6.0 RESULTS

### 7.0 APPENDIX

### CODE FOR SUSTAINABLE HOMES PRE-ASSESSMENT CALCULATION

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## 1.0 INTRODUCTION

This Code for Sustainable Homes pre-assessment has been prepared on behalf of Solum Regeneration Partnership. The report summarises the results of, and assumptions made, within the production of a Code for Sustainable Homes pre-assessment for 115 residential units within a proposed mixed use development at Twickenham Station, London.

The report is based on plans and building layouts provided in the following drawings provided on 21/04/11 by Rolfe Judd;

4674 / T(20)E01 B  
4674 / T(20)E02 B  
4674 / T(20)E03 B  
4674 / T(20)E04 C  
4674 / T(20)E05 B  
4674 / T(20)E06 B

4674 / T(20)P -1 D  
4674 / T(20)P -1M B  
4674 / T(20)P00 B  
4674 / T(20)P0M B  
4674 / T(20)P01 B  
4674 / T(20)P02 B  
4674 / T(20)P03 B  
4674 / T(20)P04 B  
4674 / T(20)P05 B  
4674 / T(20)P06 B  
4674 / T(20)P07 B

4674 / T(20)S01 B  
4674 / T(20)S02 B  
4674 / T(20)S03 B  
4674 / T(20)S04 B

The report will explain the importance of, and methodology behind, the Code for Sustainable Homes.

The report will detail which credits are likely to be achieved based on the experience of the assessor and any preliminary information provided.

Throughout the report, reference will be made to evidence required to prove credits, although more detail of these evidential requirements will be outside of the scope of this report and provided in an initial design stage assessment report.

Due to the nature of the pre-assessment being undertaken at an early stage assumptions have been made and these will all be clearly noted within the body of this report.

## 2.0 THE CODE FOR SUSTAINABLE HOMES

### Context

The Code for Sustainable Homes is a holistic measure of the sustainability of new dwellings. The Code was developed not only to reduce the carbon dioxide emissions from new dwellings, in order to meet the Government requirements to try and mitigate the worst impacts of climate change, but also to minimise other environmental impacts due to the construction and use of dwellings such as waste generation, water consumption and pollution.

The importance of developing dwellings with a Code Rating of at least a Level 3 now is that this both future-proofs our buildings and also prepares developers and construction professionals for the proposed changes to the Building Regulations which will require the equivalent energy performance of Level 3 in 2010, Level 4 by 2013 and Level 5/6 by 2016.

A Code Level 4 is mandatory for funding of Affordable Housing Developments and some Local Authorities have planning policy stating a requirement for Level 3, or Level 4 in some cases, for all new dwellings.

### How the Code Works

The Code for Sustainable Homes is made up of nine categories, and several issues are covered within each category, with credits available for meeting the particular criteria of that issue.

Each category has a weighting factor for which the proportion of the maximum credits achieved in that category is multiplied by, and then summed across, all categories to achieve the final Code Rating percentage.

Category	Weighting	Approximate weighted value of 1 credit
Energy & CO <sub>2</sub> Emissions	36.4%	1.26
Water	9.0%	1.50
Materials	7.2%	0.30
Surface Water Run-off	2.2%	0.55
Waste	6.4%	0.91
Pollution	2.8%	0.70
Health & Wellbeing	14.0%	1.17
Management	10.0%	1.11
Ecology	12.0%	1.33

The Code levels can be achieved through scoring percentage points as follows (assuming mandatory requirements are met), it should be noted that decimals are always rounded down to the nearest integer.

Percentage Points	Code Rating
36	Level 1
48	Level 2
57	Level 3
68	Level 4
84	Level 5
90	Level 6

Mandatory criteria will be discussed in chapter 3.0 before consideration of the tradable credits, which will be summarised in chapter 4.0. The full Code for Sustainable Homes calculation is shown in the Appendix.

## **3.0 MANDATORY REQUIREMENTS**

### **3.1 ENERGY AND CO<sub>2</sub> EMISSIONS**

Initial SAP2005 calculations have been performed as a part of developing an Energy Strategy for the site and initial proposals indicate that reductions in DER over TER in the region of 44 - 49% will be achieved. This level of carbon dioxide emissions reduction is sufficient to meet the mandatory 44% reduction required in order to achieve Code Level 4.

### **3.2 WATER – INTERNAL CONSUMPTION**

In order to meet Code Level 4 it is a mandatory requirement that the maximum potable water consumption per person per day is no more than 105 litres as calculated by the Water Efficiency calculator for new Dwellings. Typical figures for flow rates and capacities of water consuming fixtures and fittings in order to meet this requirement are provided in Section 4.2.

### **3.3 MATERIALS**

In order to meet any level of the Code then at least three of the following elements must achieve a Green Guide (2008) Rating of A+ to D; Roof, External Walls, Internal Walls, Upper and Ground Floors, and Windows.

The proposed construction details/building materials list should be provided to the Code Assessor at an early stage of the design process to allow for feedback to be included into the designs in order to maximise the Green Guide Ratings for the main building elements.

### **3.4 WATER – SURFACE RUN-OFF**

In order to meet any level of the Code, it must be shown that water run-off rates and volumes post-development will be no greater than the previous conditions on site.

Compliance with this mandatory requirement can be proven by ensuring that a suitably qualified engineer's Flood Risk Assessment (FRA) Report or Surface Water Drainage Report includes the required calculations of surface water run-off rates and volumes to the specific requirements of the Code for Sustainable Homes.

If the report shows that the peak rate of runoff and volume of runoff have increased due to developing the site then Sustainable Drainage Solutions (SUDs) are likely to be necessary in order to meet this mandatory requirement.

### **3.5 WASTE – HOUSEHOLD**

In order to meet any level of the Code, space must be provided for either; all of the containers provided by the Local Authority Recycling Scheme, without stacking; or the minimum capacity of waste storage calculated under BS5906, whichever is the greatest.

The Local Authority will have to be consulted to confirm the waste and recycling service which they provide to ensure that the household waste storage provision is sufficient to meet this mandatory requirement.

The storage area must be sited on a hard, level surface to allow easy access to disabled people, especially wheelchair users.

### **3.6 WASTE – CONSTRUCTION**

In order to meet any level of the Code a Site Waste Management Plan (SWMP) is required.

The SWMP must be developed and implemented to set targets and monitor waste generated on site in defined waste groups. The targets for waste management should be designed to encourage resource efficiency in accordance with guidance provided by WRAP, Envirowise, BRE and DEFRA.

## 4.0 TRADABLE REQUIREMENTS

### 4.1 ENERGY AND CO<sub>2</sub> EMISSIONS

#### DWELLING EMISSION RATE

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8 OF 15 CREDITS AWARDED

Initial SAP2005 calculations have been performed as a part of developing an Energy Strategy for the site and initial proposals indicate that reductions in DER over TER in the region of 44 - 49% will be achieved.

Detailed design stage SAP calculations should be used to ensure that the dwellings are designed to meet the mandatory reduction in carbon dioxide emissions with a sufficient margin to ensure that as-built compliance can be achieved.

The evidence required to achieve these credits include full SAP 2005 worksheets.

#### BUILDING FABRIC

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2 OF 2 CREDITS AWARDED

Initial SAP2005 calculations have been performed as a part of developing an Energy Strategy for the site and initial proposals indicate that the area weighted dwelling Heat Loss Parameter (HLP) is 1.04, hence two credits can be achieved.

A low HLP is achieved as the Energy Strategy utilises energy efficiency design principles such as specifying high levels of insulation and a low air tightness to reduce the carbon dioxide emissions of the proposed dwellings. The HLP is also a product of the geometry of the dwellings, including the heat loss area to floor area ratio and proportion of glazing.

The evidence required to achieve these credits include full SAP 2005 worksheets.

#### INTERNAL LIGHTING

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2 OF 2 CREDITS AWARDED

It has been assumed that 75% or more of the light fittings in each dwelling will be dedicated energy efficient, only capable of accepting lamps with an efficacy greater than 40 lumens per circuit watt.

For the design stage assessment; the evidence can be met if this requirement is stated within the specification.

#### DRYING SPACE

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1 OF 1 CREDIT AWARDED

At least 4 m of washing line for 1-2 bed dwellings and at least 6 m of washing line for dwellings of 3 beds or more is assumed to be provided. The drying space can be provided in the form of a permanently fixed bathroom dryer.

It should be ensured that the ventilation in the room where the dryer is located is in compliance with both Building Regulations Approved Document Part F and the Energy Saving Trust recommendations regarding ventilation of indoor spaces supplied with drying fixings.



For the design stage assessment; the evidence can be met if this requirement is stated within the specification.

## ENERGY LABELLED WHITE GOODS

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1 OF 2 CREDITS AWARDED

It is assumed that no white goods will be provided, but information will be provided to the homeowner regarding the EU Energy Efficiency Labelling Scheme of efficient white goods.

For the design stage assessment; the evidence can be met if the specification states that an information leaflet on the EU Energy Efficiency Labelling Scheme of efficient white goods is provided to each dwelling and a copy of the leaflet is provided.

## EXTERNAL LIGHTING

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2 OF 2 CREDITS AWARDED

It is assumed that all external space lighting is provided by dedicated energy efficient fittings. If security lighting is not provided then a further credit can be awarded by default as long as energy efficient space lighting is provided. If security lighting is provided it must be energy efficient and controlled to ensure that it does not operate during daylight hours.

For the design stage assessment; the evidence can be met if this requirement is stated within the specification in detail ensuring that all of the specific requirements of this Code for Sustainable Homes issue are met.

## LOW OR ZERO CARBON (LZC) TECHNOLOGIES

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2 OF 2 CREDITS AWARDED

The Energy Strategy includes the use of gas-fired Combined Heat and Power (CHP) and Photovoltaic (PV) panels in order to significantly reduce the carbon dioxide emissions of the dwelling beyond the reductions achieved through energy efficient design alone.

The proposals within the Energy Statement would reduce the dwelling carbon dioxide emission rates by in excess of 15% allowing all credits to be achieved for this issue.

The design stage evidence required for this issue includes a Renewable Energy Feasibility Study and compliant SAP2005 calculation of carbon dioxide emissions reduction. Either specification text or drawings are also required to confirm the installation of LZC technologies.

## CYCLE STORAGE

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1 OF 2 CREDITS AWARDED

It is assumed that secure and weatherproof cycle storage facilities are provided for each dwelling. Communal cycle storage must have fittings set into concrete to allow both frame and wheel to be locked securely and a permanent entrance lock which conforms to BS 3621:2004.

The minimum requirement to achieve one credit is to provide one cycle store for every two studio or one bedroom dwellings, one cycle store for every two or three bedroom dwelling and two cycle stores for every four bedroom dwelling.

The drawings T(20)P-1 D and T(20)P00 B indicate that provision for sufficient number of cycles has been allocated to each of the proposed residential blocks.

In the case of Block C an additional credit is available here as this block is served by sufficient cycle storage to allow one space for each one bed dwelling and two spaces for each two or three bed dwelling.

If a proprietary system is not used then it must be ensured that the dimensions of the cycle storage areas comply with the guidance within the New Metric Handbook.

The design stage evidence can be satisfied with drawings and specification text.

## HOME OFFICE

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0 OF 1 CREDIT AWARDED

In order to achieve this credit a specific level of daylighting must be achieved within the dedicated home office space along with the provision of home office services.

It is assumed that this credit cannot be achieved due to the daylighting requirements. (See section 4.7)

## 4.2 WATER

### INDOOR WATER USE

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3 OF 5 CREDITS AWARDED

The mandatory Code Level 3 and 4 requirements for indoor water consumption, being no more than 105 litres per person per day, must be met.

Generally this may be achieved by using water efficient fittings and appliances. Typical values required in order to achieve this are as follows:

- 4.5 / 3 litres dual flush WCs
- 4 litres per min taps
- 155 litre capacity bath
- 6 litres per min shower

For the design stage assessment; the evidence can be met if the specification states specific performance capacity and flow rates for water consuming fittings.

### EXTERNAL WATER USE

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0 OF 1 CREDIT AWARDED

Some rooftop terraces are provided and the dwellings on the lower ground floor of Block C have a garden area, therefore the provision of outdoor space to the dwellings is not through private balconies alone, where the only outdoor space provided is through balconies this credit can be achieved by default.

This credit can be awarded by providing water butts to the several garden and terraces spaces proposed. Water butts should be at least 100 litres for a terrace/patio or at least 150 litres for a small private garden of a 1 or 2 bed dwelling. These minimum requirements can be halved if no planting is provided and all of the outdoor space is hard standing only. The water butts must be correctly specified in accordance with the Code for Sustainable Homes Technical Guide.

It is considered that there are potential difficulties in providing downpipes from rooftop drainage to several small individual water butts; therefore it is assumed that this credit is not achieved at this time but there is potential to pursue it at a later stage if required.

## 4.3 MATERIALS

### ENVIRONMENTAL IMPACT OF MATERIALS

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10 OF 15 CREDITS AWARDED

The BRE MAT1 calculator is used to calculate the credits for this issue depending on the Green Guide 2009 rating of the dwelling external walls, internal walls, roof, floors and windows.

It is assumed that a Green Guide rating as follows is achieved for the five key building elements;

Roof	A+
External Walls	A
Internal Walls	A
Upper & Ground Floors	B
Windows	A

These Green Guide ratings should be viewed as a minimum standard rather than a target as there is potential to achieve further credits in this issue through specifying construction materials with a higher Green Guide rating.

For further information on which construction materials achieve the required ratings see the BRE Green Guide 2009 ([www.bre.co.uk/greenguide](http://www.bre.co.uk/greenguide)).

Drawings and/or specification documents detailing the proposed construction materials and areas for the key building elements are required for the design stage evidence.

### RESPONSIBLE SOURCING OF MATERIALS-BASIC BUILDING ELEMENTS

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4 OF 6 CREDITS AWARDED

It is assumed that the requirements of this issue are met in order to achieve 4 credits.

In order to meet the requirements of this credit all timber must be legally sourced and 80% of assessed materials within the frame, ground floor, upper floors, roof, external walls, internal walls, foundation/substructure and staircase must be responsibly sourced.

At least five of the basic building elements must be assessed.

The assessed materials are brick, resin based composites, concrete, glass, plastic and rubber, metals, dressed or building stone, timber, wood panels, wood based composites, plasterboard, plaster, bituminous materials, mineral based materials including fibre cement and calcium silicate and products with a recycled content.

Evidence must be provided for responsible sourcing, although a detailed commitment is sufficient for the design stage assessment, recognised schemes for responsible sourcing include FSC, BES 6001:2008 and certified EMS for key processes and the supply chain.

Further guidance on complying with the requirements of this issue will be provided at the design stage assessment, or can be found within the Code for Sustainable Homes Technical Guide May 2009.

## RESPONSIBLE SOURCING OF MATERIALS-FINISHING ELEMENTS

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2 OF 3 CREDITS AWARDED

It is assumed that the requirements of this issue are met in order to achieve 2 credits.

In order to meet the requirements of this credit all timber must be legally sourced and 80% of assessed materials within the stairs, windows, external & internal doors, skirting, panelling, furniture, fascias or any other significantly used finishing element must be responsibly sourced.

At least five of the finishing elements must be assessed.

The assessed materials are brick, resin based composites, concrete, glass, plastic and rubber, metals, dressed or building stone, timber, wood panels, wood based composites, plasterboard, plaster, bituminous materials, mineral based materials including fibre cement and calcium silicate and products with a recycled content.

Evidence must be provided for responsible sourcing, although a detailed commitment is sufficient for the design stage assessment, recognised schemes for responsible sourcing include FSC, BES 6001:2008 and certified EMS for key processes and the supply chain.

Further guidance on complying with the requirements of this issue will be provided at the design stage assessment, or can be found within the Code for Sustainable Homes Technical Guide May 2009.

### 4.4 SURFACE WATER RUN-OFF

#### MANAGEMENT OF SURFACE WATER RUN-OFF FROM DEVELOPMENTS

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2 OF 2 CREDITS AWARDED

It is assumed that the mandatory requirements are met for this credit as described in Section 3.4.

To achieve the credits Sustainable Urban Drainage Solutions (SUDS) must be used to ensure that there will be no surface run-off to a watercourse at rainfalls of 5 mm, or agreements must be established for the long term operation and maintenance of all sustainable drainage elements.

For the design stage evidence a copy of the consultant's report detailing the design of SUDs to meet the requirements, or plans for establishing an agreement for the long term operation and maintenance of all sustainable drainage elements are required.

## FLOOD RISK

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2 OF 2 CREDITS AWARDED



From the Environment Agency Flood Map, shown above, it can be seen that the site is located in a low-risk zone where the annual probability of fluvial flooding is less than 1 in 1000 in any given year.

A Flood Risk Assessment (FRA) report by an appropriately qualified hydrological consultant or engineer will be required to clarify that the site is in a low flood risk area from all sources of flooding. This report should be prepared according to good practice guidance as outlined in *PPS25 Development and Flood Risk*.

With the current evidence available it is assumed that the site is in a low flood risk zone, therefore these credits can be awarded based on a Flood Risk Assessment (FRA) report clarifying that the site is within a low flood risk zone.

## 4.5 WASTE

### STORAGE OF NON-RECYCLABLE WASTE AND RECYCLABLE HOUSEHOLD WASTE

4 OF 4 CREDITS AWARDED

It is assumed that the mandatory requirements are met as described in section 3.5.

It is assumed that there will be a Local Authority recycling collection scheme in place serving the proposed development.

The full credits can be achieved for this issue if;

- there is either a single 30 litre bin in an adequate internal space
- Or
- there are at least three separate bins with a total capacity of 30 litres and a single capacity of at least 7 litres in an adequate internal space.

Whether several bins or a single bin is required depends on whether the Local Authority recycling scheme in this area is sorted before or after collection.

If a Local Authority Recycling and Household Waste Collection Service is not provided then three internal bins with a total capacity of 30 litres and at least 7 litres each are required and external waste storage should be sized according to guidance from the private recycling and waste scheme operator.

For the design stage assessment; the evidence can be met if this requirement is stated within the specification in detail ensuring that all of the specific requirements of this Code for Sustainable Homes issue are met.

## CONSTRUCTION SITE WASTE MANAGEMENT

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2 OF 2 CREDITS AWARDED

The mandatory requirement of developing a Site Waste Management Plan (SWMP) is assumed, see section 3.6.

Credits can be achieved if the SWMP includes procedures and commitments for actively reducing waste generated on site in accordance with best practice for each waste group and includes procedures and commitments to sort and divert waste from landfill.

A fully compliant SWMP is required for the design stage evidence; the Code for Sustainable Homes Technical Guide should be referred to for the detailed requirements of a compliant SWMP.

It is recommended that meeting these requirements is written into the contractor's specification.

## COMPOSTING

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0 OF 1 CREDIT AWARDED

It is assumed there will be no composting scheme available.

## 4.6 POLLUTION

### GLOBAL WARMING POTENTIAL OF INSULANTS

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1 OF 1 CREDIT AWARDED

It is assumed that all insulation materials used within the roof, walls, floors, hot water cylinder, pipe insulation, cold water storage and external doors have a GWP<5.

Meeting this requirement should be added to all relevant specification documents.

Checklist POL1 should be completed in order to meet the design stage evidence and will be provided at the initial stage of the design stage assessment.

### NO<sub>x</sub> EMISSIONS

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3 OF 3 CREDITS AWARDED

The Energy Strategy for the site utilises centralised gas-fired CHP and high efficiency gas-fired condensing boilers feeding a site-wide heat network to distribute heat for space and water heating throughout the site.

Initial calculations provided by a manufacturer of gas-fired CHP systems demonstrates that a negative NO<sub>x</sub> Emission can be achieved for the heat delivered from the system, therefore when coupled with a high efficiency gas-fired condensing boiler it is anticipated that maximum credits can be achieved for this issue by demonstrating a NO<sub>x</sub> emission of less than or equal to 40 mg/kWh.

For the design stage assessment; the evidence can be met if the specification includes a commitment to achieve a combined dry NO<sub>x</sub> emission of less than or equal to 40 mg/kWh arising from the operation of space and water heating systems within the dwellings.

## 4.7 HEALTH AND WELLBEING

### DAYLIGHTING

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0 OF 3 CREDITS AWARDED

It is assumed that no credits can be awarded for achieving average daylight factors as follows;

Kitchen	2%
Other habitable rooms	1.5%

It is also assumed that a view of the sky cannot be achieved from 80% of all habitable room areas.

These credits are typically difficult to achieve on city-centre mixed use redevelopments where there are several buildings closely adjacent to one another.

### SOUND INSULATION

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3 OF 4 CREDITS AWARDED

Building Regulations Approved Document E states minimum requirements for sound insulation between habitable rooms of adjacent dwellings. It is assumed that the minimum requirements can be surpassed with airborne sound insulation values at least 5 dB higher and impact sound insulation values at least 5 dB lower.

Use of enhanced details can have a large impact in achieving this target and good performance for sound insulation often goes hand-in-hand with high levels of air tightness and thermal insulation.

Pre-completion testing by a Compliant Test Body or use of relevant constructions assessed and approved by Robust Details Limited (RDL) will be required to ensure that this requirement is met.

Design stage evidence can be satisfied by specification text committing to the detailed requirements of this Code for Sustainable Homes issue.

### PRIVATE SPACE

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0 OF 1 CREDIT AWARDED

The drawings provided indicate that all but one dwelling is provided with a private balcony, winter garden, terrace or garden which is sufficient to meet the minimum space requirement of 1.5 m<sup>2</sup> of private outdoor space per bedroom.

However, winter gardens are assumed to not meet the criteria for compliant outdoor space as the requirements state that conservatories and other enclosed areas do not comply with the criteria.

It is therefore assumed that this credit cannot be awarded.

If this credit is to be targeted for those dwellings which do have compliant outdoor space then it must be ensured that all outdoor space provided is compliant with the relevant sections of BS 8300; this should be stated within specification text or annotated on the relevant drawings in order to meet all of the design stage evidential requirements of this issue.

## LIFETIME HOMES

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4 OF 4 CREDITS AWARDED

It is assumed that all of the principles of Lifetime Homes have been complied with for these dwellings; this is a minimum requirement of developments within London as required by the London plan

The Lifetime Homes checklist should be considered to clarify that all requirements are met, and can be found at [www.lifetimehomes.org.uk](http://www.lifetimehomes.org.uk)

The Lifetime Homes Checklist HEA4 should be completed in order to meet the design stage evidence and will be provided at the initial stage of the design stage assessment.

### 4.8 MANAGEMENT

#### HOME USER GUIDE

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3 OF 3 CREDITS AWARDED

It is assumed that a comprehensive user guide will be provided to the occupants of each dwelling providing information and instructions relating to the operation of the dwelling along with the site and surrounding area.

Design stage evidence can be satisfied by specification text committing to producing a Home User Guide which meets the detailed requirements of this Code for Sustainable Homes issue and providing the document to all dwellings at completion.

#### CONSIDERATE CONSTRUCTORS SCHEME

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2 OF 2 CREDITS AWARDED

It has been assumed that the main construction contractors will make a commitment to go significantly beyond best practice within the Considerate Constructors Scheme (CCS) or any other nationally or locally recognised similar certification scheme. A CCS score of at least 32, with no less than 3, in each section must be achieved.

To meet the design stage evidence the main construction contractor should be bound by specification to achieve the required CCS score of at least 32 with no less than 3 in each section and confirmation of registration of the site with CCS prior to commencement of the construction phase must be provided.

#### CONSTRUCTION SITE IMPACTS

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2 OF 2 CREDITS AWARDED

It is assumed that the main construction contractor will make a commitment and strategy to manage the site so that there are procedures for at least four of the items on the following list;

1. Monitor, report and set targets for CO<sub>2</sub> emissions or energy use arising from site activities.
2. Monitor and report CO<sub>2</sub> emissions or energy use arising from commercial transport to and from site.
3. Monitor, report and set targets for water consumption from site activities.
4. Adopt best practice policies in respect of air (dust) pollution arising from site activities.
5. Adopt best practice policies in respect of water (ground & surface) pollution occurring on site.
6. 80% of site timber is reclaimed, re-used or responsibly sourced.



The Checklist MAN3 should be completed and signed by the main contractor in order to meet the design stage evidence and will be provided at the initial stage of the design stage assessment.

## SECURITY

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2 OF 2 CREDITS AWARDED

The full credits are awarded as it is assumed that there has been a design stage consultation with the local police force via an Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA) and that recommendations will be incorporated into the dwelling designs to ensure that the requirements of Section 2 – Physical Security of Secured by Design – New Homes are met.

The design stage evidence requires detailed documentary evidence that consultation with an Architectural Liaison Officer (ALO) or Crime Prevention Design Advisor (CPDA) has occurred and that recommendations will be implemented.

## 4.9 ECOLOGY

### ECOLOGICAL VALUE OF SITE

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0 OF 1 CREDIT AWARDED

Extracts from the Ecological Survey Report, by Wardell Armstrong, indicate that there are areas of significant ecological value on the proposed site; these are mainly found along the River Crane site boundary.

At this stage it will be assumed that this credit cannot be achieved as it is expected that landscaping works will occur within these areas of significant ecological value.

However, this credit may be achievable if a detailed letter can be provided by the Ecologist confirming that:

- a. they meet the requirements of a *Suitably Qualified Ecologist* and have submitted a *Verified Ecological Report*
- b. the construction zone is of low ecological value
- c. all land outside of the construction zone will remain undisturbed by the construction works in areas of ecological value.

### ECOLOGICAL ENHANCEMENT

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1 OF 1 CREDIT AWARDED

The Ecology Report extracts provided confirm that an Ecologist has been appointed hence this credit can be achieved if all of the Ecologist's key recommendations and 30% of additional recommendations are implemented, along with confirmation provided that the Ecologist meets the requirements to be *Suitably Qualified*.

The design stage evidence requires detailed documentary evidence of how the Ecologists recommendations will be incorporated into the design.

## PROTECTION OF ECOLOGICAL FEATURES

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1 OF 1 CREDIT AWARDED

The extracts from the Ecology Report provided indicate that some trees will be removed; however these are indicated to be of low-ecological value or of poor condition.

Evidence must be provided to show the all ecological features are adequately protected during site clearance, preparation and construction works in line with the Ecologists recommendations.

## CHANGE IN ECOLOGICAL VALUE OF SITE

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3 OF 4 CREDITS AWARDED

The Ecology Report extracts states that there will be a positive overall change in species per hectare between the undeveloped and developed site. Hence, it is assumed that 3 credits can be achieved for enhancing the site ecological value by at least 3 species per hectare.

The design stage evidence requires detailed documentary evidence of how the Ecologists recommendations will be incorporated into the design, including a planting schedule.

## BUILDING FOOTPRINT

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2 OF 2 CREDITS AWARDED

This credit is awarded on a site-wide basis. The drawings indicate that a total dwelling area to building footprint ratio of at least 4:1 will be achieved.

## 5.0 CODE FOR SUSTAINABLE HOMES VERSION

This pre-assessment is based on the May 2009 Technical Guide. The site has been registered against the May 2009 technical Guide, which means that the assessment will proceed on this version of the guide regardless of whether new versions are released hence forth. The site registration number is 001295 - 100913 - 01 - 1144

## 6.0 RESULTS

Section 3.0 shows how all of the mandatory credits for Code Level 4 can be met.

Section 4.0 indicates all of the tradable credits likely to be achieved for this site.

The Code for Sustainable Homes calculation, as shown in the Appendix results in a total points score of **71**.

This report demonstrates that considering both mandatory and tradable credits Code Level 4 is achieved for this pre-assessment.

However, a sufficient margin over the minimum number of credits (68) required to achieve Code Level 4 may not be achieved. Hence it is recommended that the Ecologist should be consulted in order to attempt to achieve the potential credits for ECO1: Ecological Value of Site; or targeting further credits as required could be discussed at an initial meeting once the Main Contractor has been appointed.

## 7.0 APPENDIX

### Summary Score Sheet

Dwelling Type: Initial Representation

Plots: all

	Credit Score	Credits Available	Score Assessment				
			Sub Total	Credits Available	%	Weighting Factor	Points Score
<b>Energy &amp; CO2 Emissions</b>							
<b>Ene 1</b> Dwelling Emission Rate	8	15	19	29	65.52	1.26	23.85
<b>Ene 2</b> Building Fabric	2	2					
<b>Ene 3</b> Internal Lighting	2	2					
<b>Ene 4</b> Drying Space	1	1					
<b>Ene 5</b> Energy Labelled White Goods	1	2					
<b>Ene 6</b> External Lighting	2	2					
<b>Ene 7</b> Low or Zero Carbon Energy Tech	2	2					
<b>Ene 8</b> Cycle Storage	1	2					
<b>Ene 9</b> Home Office	0	1					
<b>Water</b>							
<b>Wat 1</b> Internal Potable Water Use	3	5	3	6	50.00	1.50	4.5
<b>Wat 2</b> External Water Use	0	1					
<b>Materials</b>							
<b>Mat 1</b> Environmental Impact of Materials	10	15	16	24	66.67	0.30	4.8
<b>Mat 2</b> Responsible Sourcing (Basic Building Elements)	4	6					
<b>Mat 3</b> Responsible Sourcing (Finishing Elements)	2	3					
<b>Surface Water Run-off</b>							
<b>Sur 1</b> Reduction of Surface Water Run-off from Site	2	2	4	4	100.00	0.55	2.2
<b>Sur 2</b> Flood Risk	2	2					
<b>Waste</b>							
<b>Was 1</b> Household Waste Storage & Recycling Facilities	4	4	6	7	85.71	0.91	5.49
<b>Was 2</b> Construction Site Waste Management	2	2					
<b>Was 3</b> Composting	0	1					
<b>Pollution</b>							
<b>Pol 1</b> Global Warming Potential of Insulants	1	1	4	4	100.00	0.70	2.8
<b>Pol 2</b> NOx Emissions	3	3					
<b>Health &amp; Wellbeing</b>							
<b>Hea 1</b> Daylighting	0	3	7	12	58.33	1.17	8.17
<b>Hea 2</b> Sound Insulation	3	4					
<b>Hea 3</b> Private Space	0	1					
<b>Hea 4</b> Lifetime Homes	4	4					
<b>Management</b>							
<b>Man 1</b> Home User Guide	3	3	9	9	100.00	1.11	10
<b>Man 2</b> Considerate Constructors Scheme	2	2					
<b>Man 3</b> Construction Site Impacts	2	2					
<b>Man 4</b> Security	2	2					
<b>Ecology</b>							
<b>Eco 1</b> Ecological Value of Site	0	1	7	9	77.78	1.33	9.33
<b>Eco 2</b> Ecological Enhancement	1	1					
<b>Eco 3</b> Protection of Ecological Features	1	1					
<b>Eco 4</b> Change of Ecological Value of Site	3	4					
<b>Eco 5</b> Building Footprint	2	2					
			<b>Level Achieved: 4</b>	<b>Total Points Scored: 71.14</b>			