



MMC Investments Limited

2-6 Queens Road
Twickenham
London Borough of Richmond Upon Thames

Code for Sustainable Homes Pre-Assessment Estimate

Code Level 6
Code Level 5
Code Level 4
Code Level 3
Code Level 2
Code Level 1

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Code for Sustainable Homes Pre-Assessment Estimate on Proposed Development at:

2-6 Queens Road, Teddington, London Borough of Richmond Upon Thames

This Pre-Assessment Estimate indicates how a rating of Code Level 3 could be achieved.

Code Level:	3
Predicted Score:	60.9% - 62.0%
Predicted Code Level Threshold:	57.00%
Mandatory Requirements:	All Met
Assessed Version:	Nov 2010 (Version 1)
Registered Version:	To be registered with BRE at Design Stage

This Code for Sustainable Homes Pre-Assessment Estimate has been prepared by SRE for MMC Investments Limited (Client) and the Design Team as part of the planning requirements for the 14 proposed new residential units at 2-6 Queens Road, Teddington. The estimate has been based on details supplied by Andrew Nesbitt Architects (The Architect), a desktop study and certain credits have been assessed on best practice and historical data.

This Pre-Assessment Estimate outlines the Proposed schemes assumed specification to meet the required Code for Sustainable Homes Level, and is to be signed by the Client and Contractor (if not the same organisation) in order to confirm that this specification will be implemented on site.

Overview

The Proposed Development at 2-6 Queens Road, Teddington, consists of 14 new build residential Units, all of which are 1 bedroom or studio apartments over an existing, refurbished and extended office space (2 floor of residential space – second and third floor). The units will achieve a minimum of Code for Sustainable Homes Level 3 in line with Local Planning Policy. Efficient water fittings such as low flow showers and flow restricted taps will be required to meet the minimum standards for CSH Level 3, as well as the provision of correctly sized water butts, refuse stores and bike store. Other considerations have been taken into account, and certain assumptions of specified items have been made, please see pre-assessment for indicative specification.

Summary Score Sheet

Section	Description	Credits Available	Target Score	Unit No / Unit Type													
				Apt 1	Apt 2	Apt 3	Apt 4	Apt 5	Apt 6	Apt 7	Apt 8	Apt 9	Apt 10	Apt 11	Apt 12	Apt 13	Apt 14
Energy																	
Ene 1	DER improvement over TER	10	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Ene 2	Fabric Energy Efficiency (FEE)	9	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Ene 3	Energy Display Device	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ene 4	Drying Space	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ene 5	White Goods	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ene 6	External Lighting	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Ene 7	Low Zero Carbon Technologies	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Ene 8	Cycle Storage	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Ene 9	Home Office	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		31	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3
Water																	
Wat 1	Internal Water Use	5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Wat 2	External water use/water butts	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Materials																	
Mat 1	Materials Specification/Green Guide	15	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Mat 2	Responsible sourcing (basic construction)	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mat 3	Responsible sourcing (finishing)	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		24	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Surface Water																	
Sur 1	Surface water runoff	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Sur 2	Flood Risk	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Waste																	
Was 1	Internal and external waste storage and access	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Was 2	Site Waste Management Plan	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Was 3	Composting	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		8	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Pollution																	
Pol 1	Global Warming Potential (GWP) of insulation	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pol 2	NOx emissions from boilers	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Health & Wellbeing																	
Hea 1	Daylighting	3	2	2	2	2	2	2	2	2	2	2	2	1	2	2	1
Hea 2	Sound insulation	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hea 3	Private/communal secure + accessible open space	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hea 4	Lifetime Homes	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		12	4	4	4	4	4	4	4	4	4	4	4	3	4	4	3
Management																	
Man 1	Home User Guide	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Man 2	Considerate Constructors Scheme	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Man 3	Monitoring of Site Impacts	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Man 4	Secured By Design (Section 2) compliance	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
		9	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Ecology and Land-Use																	
Eco 1	Ecological Value of Pre-Existing Site	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Eco 2	Adoption of Ecological Recommendations	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eco 3	Protection of Ecological Features	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Eco 4	Change in Ecological Value	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Eco 5	Footprint to Floor Area Ratio	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		9	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Weighted Total (%)		100.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	60.9	62.0	62.0	60.9
CSH Level		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	

Key Assumptions/Notes

The following key assumptions/notes have been made by SRE in calculating the pre-assessment estimate – **they show what will need to be included in the design specification to meet the Code for Sustainable Homes requirements to achieve the required credits.**

Credits Ene 1 and Ene 2 will need to be confirmed as the site progresses as these may change as the design progresses. Therefore SRE kindly request that we are informed of any plan and/or specification changes, and any revisions are passed on to SRE as soon as possible.

Credits Ene 9 and Hea 1 are contingent on daylight factors of 1.5% being achieved in the living/dining rooms, and the Home Office function being assigned to a room with a daylight factor over 1.5%. Please see the relevant sections below for further details.

Energy

Issue	Credits Available	Credits Achieved
Ene 1: Dwelling Emission Rate	10	5

Credits are awarded here for the limitation of CO₂ emissions arising from the operation of a dwelling and its services.

(MANDATORY) Indicative SAP calculations show a undertaken by SRE show an improvement in Dwelling Emission Rate over Target Emission Rate of c. 46% allowing a minimum of 5 credits to be awarded. Please see the supporting Energy Statement for full details of compliance.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<p><i>Design stage SAP outputs:</i></p> <ul style="list-style-type: none"> • <i>Design Final SAP DER worksheet</i> • <i>Design Final Building Regulations checklist</i> • <i>Design Final SAP (2009) worksheet</i> • <i>Design Final FEE worksheet</i> • <i>SAP CSH Report (NHER)</i> 	<p><i>As Built SAP outputs:</i></p> <ul style="list-style-type: none"> • <i>As Built Final SAP DER worksheet</i> • <i>As Built Final Building Regulations checklist</i> • <i>As Built Final SAP (2009) worksheet</i> • <i>As Built Final FEE worksheet</i> • <i>SAP CSH Report (NHER)</i>

Issue	Credits Available	Credits Achieved
Ene 2: Fabric Energy Efficiency	9	6.3

Credits are awarded here for the improvement of energy efficiency performance which will reduce lifetime CO₂ emissions of the dwelling.

Indicative SAP calculations undertaken by SRE show that the Fabric Energy Efficiency (FEE) of the each units (group averaged) will be ~43.7kWh/m²/year therefore allowing 6.3 credits to be awarded.

Full SAP calculations will be undertaken post planning to confirm compliance with all requirements for ENE 1 and ENE 2 above.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<p><i>Design stage SAP outputs:</i></p> <ul style="list-style-type: none"> • <i>Design Final SAP DER worksheet</i> • <i>Design Final Building Regulations checklist</i> • <i>Design Final SAP (2009) worksheet</i> • <i>Design Final FEE worksheet</i> • <i>SAP CSH Report (NHER)</i> 	<p><i>As Built SAP outputs:</i></p> <ul style="list-style-type: none"> • <i>As Built Final SAP DER worksheet</i> • <i>As Built Final Building Regulations checklist</i> • <i>As Built Final SAP (2009) worksheet</i> • <i>As Built Final FEE worksheet</i> • <i>SAP CSH Report (NHER)</i>

Issue	Credits Available	Credits Achieved
Ene 3: Energy Display Devices	2	0

Credits are awarded here for use of equipment that displays energy consumption data, encouraging occupants to reduce energy use.

At this stage it has been assumed that an Energy Display Device will NOT be installed within the dwellings. Therefore credits have not been assumed.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> <i>Proof the Energy Display Device is dedicated to the dwelling</i> <p>AND</p> <ul style="list-style-type: none"> <i>Consumption data from the Device</i> 	<ul style="list-style-type: none"> <i>Written confirmation from the developer that the site has been constructed as designed.</i>
<ul style="list-style-type: none"> <i>A specification of intent to meet specific requirements</i> <p>OR</p> <ul style="list-style-type: none"> <i>Signed pre-assessment estimate</i> 	

Issue	Credits Available	Credits Achieved
Ene 4: Drying Space	1	1

Credits are awarded here for reducing the energy needed to dry clothes.

An individual drying space will be provided in the form of an internal washing line, of min. 4m total line length, installed within the heated bathroom space, with mechanical ventilation - minimum intermittent extract rate of 30 litres/second. It is advised – although not mandatory – that a humidistat is fitted to ensure damp and mould is not propagated within the area.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<p><i>Internal drying space:</i></p> <ul style="list-style-type: none"> <i>Location of drying fixings</i> <i>Details/location of ventilation</i> <i>Length of drying line</i> <i>Lock details (communal space only)</i> 	<ul style="list-style-type: none"> <i>Written confirmation from the developer that the site has been constructed as designed</i> <p>AND</p> <ul style="list-style-type: none"> <i>Manufacturers details on the installed equipment</i>
<p><i>External drying space:</i></p> <ul style="list-style-type: none"> <i>Location of fixings/footings/posts</i> <i>Length of drying line</i> <i>Lock details (communal space only)</i> 	
<p>OR</p> <ul style="list-style-type: none"> <i>Signed pre-assessment estimate</i> 	

Issue	Credits Available	Credits Achieved
Ene 5: Energy Labelled White Goods	2	1

Credits are awarded here for the use of energy efficient white goods which will reduce CO₂ emissions from appliance use.

No white goods will be supplied with the units however an information leaflet on the EU Energy Efficiency Labelling Scheme, what it is and what it means, will be provided in each unit.

If white goods are to be provided within the dwellings, please contact SRE for the required standards for compliance. Also, if white goods are purchased from the developer post completion of the CSH assessment these must meet the requirements of the CSH.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<p><i>Any white goods:</i></p> <ul style="list-style-type: none"> <i>Energy efficiency ratings</i> 	<ul style="list-style-type: none"> <i>Site inspection report (SRE)</i> <p>AND</p> <ul style="list-style-type: none"> <i>Manufacturers details on the installed equipment</i>
<p><i>Where relevant:</i></p> <ul style="list-style-type: none"> <i>EU Energy Efficiency Labelling Scheme Information</i> <i>Confirmation that the information will be provided to all dwellings</i> <i>Confirmation that all appliances available for purchase with the dwelling are compliant</i> 	
<ul style="list-style-type: none"> <i>Signed pre-assessment estimate</i> 	

Issue	Credits Available	Credits Achieved
Ene 6: External Lighting	2	2

Credits are awarded here for the use of energy efficient external lighting which reduces the CO₂ emissions of the dwelling.

Space lighting will be energy efficient and have simple internal switching. Space lighting must be controlled with one or more of the following controls: PIR, daylight cut-off sensors or timer switches.

Burglar security lighting must be PIR and daylight sensor controlled, with no fitting of more than 150 watts. Specification will need to state details and plans will show location of all luminary devices.

Internal Communal Lighting must also be of an energy efficient type and have PIR and daylight cut off to prevent inadvertent use.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> <i>Drawings showing the location of all external light fittings</i> <i>Evidence of types of light fitting and efficacy for all lamps</i> <i>Control systems for all fittings</i> 	<ul style="list-style-type: none"> <i>As built drawings and evidence (as listed for the design stage)</i> <p>OR</p> <ul style="list-style-type: none"> <i>Written confirmation of installation from the developer</i> <p>OR</p> <ul style="list-style-type: none"> <i>As built calculations and evidence (as listed for the design stage)</i> <p>OR; Site inspection report</p>

Issue	Credits Available	Credits Achieved
Ene 6: External Lighting	2	2

Credits are awarded here for the use of energy efficient external lighting which reduces the CO₂ emissions of the dwelling.

Space lighting will be energy efficient and have simple internal switching. Space lighting must be controlled with one or more of the following controls: PIR, daylight cut-off sensors or timer switches.

Burglar security lighting must be PIR and daylight sensor controlled, with no fitting of more than 150 watts. Specification will need to state details and plans will show location of all luminary devices.

Internal Communal Lighting must also be of an energy efficient type and have PIR and daylight cut off to prevent inadvertent use.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> Drawings showing the location of all external light fittings Evidence of types of light fitting and efficacy for all lamps Control systems for all fittings 	<ul style="list-style-type: none"> <i>As built drawings and evidence (as listed for the design stage)</i> <p>OR</p> <ul style="list-style-type: none"> <i>Written confirmation of installation from the developer</i> <p>OR</p> <ul style="list-style-type: none"> <i>As built calculations and evidence (as listed for the design stage)</i> <p>OR</p> <ul style="list-style-type: none"> <i>Site inspection report</i>
<ul style="list-style-type: none"> Signed pre-assessment estimate 	

Issue	Credits Available	Credits Achieved
Ene 7: Low and Zero Carbon Technologies	2	2

Credits are awarded here for the use of low and zero carbon energy sources which will limit the CO₂ emissions and running costs of a dwelling and its services.

The London Plan requires a minimum of a 20% *site-wide* CO₂ offset from renewable technologies. Therefore calculations have been undertaken in order to achieve this.

SAP Calculations undertaken by SRE show that each dwelling is able to achieve a >15% CO₂ offset and therefore 2 credits can be awarded to each dwelling.

All renewable technologies are required to be certified under the Microgeneration Certification scheme (MCS) or assured under the Combined Heat and Power Quality Assurance standard (CHPQA).

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> <i>Design stage SAP outputs</i> <i>Evidence that technologies meet requirements in Directive 2009/28/EC and are Certified under the Microgeneration Certification Scheme (as applicable)</i> <p>OR</p> <ul style="list-style-type: none"> <i>Certified under the CHPQA standard (as applicable)</i> 	<ul style="list-style-type: none"> <i>As built SAP outputs</i> <i>Evidence that technologies meet requirements in Directive 2009/28/EC and are Certified under the Microgeneration Certification Scheme (as applicable)</i> <p>OR</p> <ul style="list-style-type: none"> <i>Certified under the CHPQA standard (as applicable)</i>

Issue	Credits Available	Credits Achieved
Ene 8: Cycle Storage	2	2

Credits are awarded here for the provision of adequate and secure cycle storage facilities in order to encourage the use of bicycles, which reduces the CO₂ emissions associated with short car journeys.

Each unit will have secure cycle storage assigned that will house at least 1 cycles per dwelling. As all units are either 1 bedroom or studio apartments, this will allow 2 credits to be awarded within this section.

A store is shown on the Ground Floor Plan and it has been assumed that this will be a secure external store (that meets the requirements of the Secured-by-Design principles), that is fully enclosed. The bikes will need to be able to be secured to proprietary fixings set in concrete (or similar solid foundations) allowing both the frame and a wheel to be secure. For communal cycle stores within a block of flats the entrance must be a door set meeting the requirements of clauses 21.2 – 21.6 and 21.8 – 21.13 of ‘Secured by Design New Homes 2010’.

The stands within the cycle store will be constructed of min. 3mm gauge steel, and have a 300mm anchor T-Bar fixed **within** a concrete base to prevent it being easily removed.

- Minimum Size of store required for storage of 1 Cycle is: 2m x 0.75m

An additional 1m² is required for garden implements if the shed is also the ‘garden shed’

Please note access to a public right of way must be available without the need to take the bicycle through the dwelling.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> • <i>Number of bedrooms and cycle storage spaces per dwelling</i> • <i>Location, type and size of storage</i> • <i>Convenient access to cycle storage</i> • <i>Security measures</i> • <i>Propriety system details (if applicable)</i> • <i>How the requirements of claus 35 of Secured by Design – New Homes 2010 will be met (if applicable)</i> <p>OR</p> <ul style="list-style-type: none"> • <i>Signed pre-assessment estimate</i> 	<ul style="list-style-type: none"> • <i>Written confirmation that the site has been constructed in accordance with the information provided at design stage</i> <p>OR</p> <ul style="list-style-type: none"> • <i>Site inspection report (SRE)</i>

Issue	Credits Available	Credits Achieved
Ene 9: Home Office	1	1

Credits are awarded here for encouraging occupants to work from home by providing the necessary space and services, which reduces the need to commute.

Daylight calculations have been undertaken by SRE based on the drawings provided and these show that the Living area/space has sufficient daylighting to be used as a Home Office in line with the Code for Sustainable Homes guidance.

Therefore it has been assumed that the following will be provided within the living space/area in a manner which will not interfere with the intended use of that room:

- Sufficient space – 1.8m of free wall space to fit a desk and filing cabinet/bookshelf without interfering with the intended use of that room.
- Two double power sockets
- Two telephone points (one where the dwelling is connected to cable or broadband internet)
- Window (Openable)

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> • <i>Location and sufficient space for the home office</i> • <i>Location and number of sockets and telephone points</i> • <i>Adequate ventilation</i> • <i>Achievement of an average daylight factor of >1.5%</i> • <i>Confirmation of either the cable connection, that broadband is available at the site level or two telephone points (or double telephone point)</i> <p>AND</p> <ul style="list-style-type: none"> • <i>Signed pre-assessment estimate</i> 	<ul style="list-style-type: none"> • <i>Written confirmation of provision from the developer</i> <p>OR</p> <ul style="list-style-type: none"> • <i>Site inspection report (SRE)</i>

Water

Issue	Credits Available	Credits Achieved
Wat 1: Indoor water use	5	3

Credits are awarded here for the use of water efficient fittings, appliances and water recycling systems in order to reduce the consumption of potable water in the home.

(MANDATORY) Internal water use needs to be <105 litres/person/day to achieve Code Level 3 – to meet this requirement the following fittings will be installed:

- Kitchen sink taps have a flow rate of 5 litres/min or less
- Bathroom basin taps have a flow rate of 4 litres/min or less
- Low Flow Showers (not more than 8 litres/min)
- Dual Flush WC's (4/2.6 Litre)
- Bath: maximum 200 litre
- Space only for Washing Machine
- Space only for Dishwasher
- No water softeners are to be installed

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> • <i>Water Efficiency Calculator for New Dwellings internal potable water use</i> • <i>Location, details and type of appliances/fittings, including water reduction equipment and its capacity/flow rate.</i> • <i>Location, size and details of any rainwater and greywater systems</i> • <i>Signed pre-assessment estimate</i> 	<ul style="list-style-type: none"> • <i>Written confirmation of installation from the developer</i> <p>AND</p> <ul style="list-style-type: none"> • <i>Manufacturers sanitary ware information</i>

Issue	Credits Available	Credits Achieved
Wat 2: External Water Use	1	1

Credits are awarded here for the recycling of rainwater and reducing the amount of mains potable water used for external water uses.

As only balconies are provided for external space, this credit is gained by default.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> • <i>Type, size and location of any rainwater collection systems</i> 	<ul style="list-style-type: none"> • <i>Written confirmation of installation from the developer</i>
<ul style="list-style-type: none"> • <i>Signed pre-assessment estimate</i> 	<p>OR</p> <ul style="list-style-type: none"> • <i>Site inspection report</i>

Materials

Issue	Credits Available	Credits Achieved
Mat 1: Environmental Impact of Materials	15	9

Credits are awarded here for the use of materials with lower environmental impact over their life-cycle in accordance with the Green Guide to Specification.

(MANDATORY) As many as practical of the 5 key elements must achieve a rating of A+ to D from The Green Guide 2008.

The table below gives an indicative specification which would meet these requirements – final specification to be confirmed:

Element		Green Guide Element Description	Green Guide Rating
Roofs		Vapour control layer, insulation, timber joists, plywood (temperate EN 636-2) decking, oxidised polyester reinforced bitumen roofing membranes with mineral finish 1212520001	A+ Rated
External Walls		Angle seamed copper cladding with plywood backing on steel fixing rails, breather membrane, no sheathing, insulation, light steel frame, plasterboard on battens, paint 1206490028	A Rated
Internal Walls	Party walls	twin lightweight steel frames, 200mm min. between wall linings, 50mm mineral wool batts between frames or 25mm mineral wool batts on each side (33-60kg/m ³), 2 layers staggered gypsum based board (22kg/m ²) and paint to each side 818580013	A rated
	Internal Partitions	Galvanised steel stud, plasterboard, paint 809760002	A+ Rated
Ground Floors (lowest Residential floor)		Screed on insulation laid on grouted beam and medium dense solid block flooring 820140031	C Rated
Upper Floors		Structural topping on hollow precast prestressed concrete slabs 807280053	C Rated
Windows		Powder coated aluminium window (profile < 1.08 kg/m), double glazed 1213100004	A Rated

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> Completed Code Mat Calculator Tool, showing building elements at design with the relevant Green Guide element numbers (SRE) <p>AND</p> <ul style="list-style-type: none"> Signed pre-assessment estimate <p>AND</p> <ul style="list-style-type: none"> General building specification 	<ul style="list-style-type: none"> The Code Mat 1 Calculator Tool, showing building elements as built with the relevant Green Guide element numbers (SRE) References of data source <p>OR</p> <ul style="list-style-type: none"> Confirmation of construction from the developer nothing any changes from design stage

Issue	Credits Available	Credits Achieved
Mat 2: Responsible Sourcing of Materials – Basic Building Elements	6	0

Credits are awarded here for the environmentally, socially considerate and accountable management of construction sites.

It is assumed that as many as practical of the basic elements in the development will be responsibly sourced – zero credits have been assumed here as the specification is to be confirmed.

Elements assessed under this credit are:

- | | |
|---------------------------|------------------|
| ○ Frame | ○ Ground Floor |
| ○ Upper Floors | ○ Roof |
| ○ External Wall | ○ Internal Walls |
| ○ Foundation/substructure | ○ Staircase |

Additionally, 100% of all timber for these elements will be legally sourced

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> Completed Code Mat 2 Calculator Tool (SRE) <p>AND</p> <ul style="list-style-type: none"> Specified materials in each element <p>OR</p> <ul style="list-style-type: none"> Materials schedule giving materials manufacturers (suppliers for timber) and any certification if known 	<ul style="list-style-type: none"> Code Mat 2 Calculator Tool and as built documentary evidence (as listed for design stage) (SRE) <p>AND</p> <ul style="list-style-type: none"> Developer confirmation that materials have been used as specified at design stage <p>OR</p> <ul style="list-style-type: none"> Materials schedule giving materials manufacturers/suppliers if not provided at design stage

Issue	Credits Available	Credits Achieved
Mat 3: Responsible Sourcing of Materials – Basic Finishing Elements	3	0

Credits are awarded here for the use of responsibly sourced materials for the finishing elements.

It is assumed that as many as practical of the finishing elements in the development will be responsibly sourced – zero credits have been assumed here as the specification is to be confirmed.

Elements assessed under this credit are:

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

Additionally, 100% of all timber for these elements will be legally sourced

Chain of Custody certification will be needed as part of the CSH assessment for credits to be gained under both Mat 2 and Mat 3 issues. Some examples of these are as follows:

- Forestry Stewardship Council Certification (FSC)
- Programme for the Endorsement of Forest Certification (PEFC)
- International Organisation for Standardisation (ISO) 14001
- BRE Standard: BES 6001

The BRE SmartER tool (an add-on to the SmartWaste tool) can assist in procuring sustainable timber for temporary and permanent use.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> • <i>Completed Code Mat 2 Calculator Tool (SRE)</i> <p>AND</p> <ul style="list-style-type: none"> • <i>Specified materials in each element</i> <p>OR</p> <ul style="list-style-type: none"> • <i>Materials schedule giving materials manufacturers (suppliers for timber) and any certification if known</i> 	<ul style="list-style-type: none"> • <i>Code Mat 2 Calculator Tool and as built documentary evidence (as listed for design stage) (SRE)</i> <p>AND</p> <ul style="list-style-type: none"> • <i>Developer confirmation that materials have been used as specified at design stage</i> <p>OR</p> <ul style="list-style-type: none"> • <i>Materials schedule giving materials manufacturers/suppliers if not provided at design stage</i>

Surface Water Runoff

Issue	Credits Available	Credits Achieved
Sur 1: Management of Surface Water Run-off from Developments	2	2

Credits are awarded here for designing surface water drainage for housing developments so that it avoids, reduces and delays the discharge of rainfall run-off to watercourses and public sewers using SuDS techniques. This will protect receiving waters from pollution and minimise the risk of flooding and other environmental damage in watercourses.

(MANDATORY) Peak runoff rates and annual runoff post development must be no greater than the previous conditions for the site.

Additional credits be required within this section, therefore SuDS must be used 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).

AND

2. 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.

Any drainage scheme implemented will be required to ensure they are sized appropriately to withstand a 1 in 100 year rainfall event plus 30% increase for climate change.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> • A PPS 25 Compliant Flood Risk Assessment (FRA) <p>AND</p> <ul style="list-style-type: none"> • BRE SUR 1 Template Report 	<ul style="list-style-type: none"> • Confirmation letter from the developer confirming that the site has been constructed in accordance with the design stage information provided

Issue	Credits Available	Credits Achieved
Sur 2: Flood Risk	2	2

Credits are awarded here for locating housing developments in low flood risk areas, or by taking measures to reduce the impact of flooding on houses built in areas with a medium or high risk of flooding.

Two credits are assumed because the development is situated in Zone 1, with a low annual probability of flooding. An FRA (conforming to NPPF) will be undertaken to confirm the risk from all sources of flooding.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<p>Zone 1 developments:</p> <ul style="list-style-type: none"> • Flood Risk Assessment 	<ul style="list-style-type: none"> • Confirmation letter from the developer confirming that the site has been constructed in accordance with the design stage information provided and that the basis for the flood risk assessment has not changed

Waste

Issue	Credits Available	Credits Achieved
Was 1: Storage of Non-recyclable Waste and Recyclable Household Waste	4	4

Credits are awarded here for the provision of adequate internal and external storage space for non-recyclable waste and recyclable household waste.

(MANDATORY) To achieve credits the space allowed for waste storage will be as follows:

- Internal storage of a minimum of 3 internal bins (30 litres total – no individual container <7 litres), in a dedicated position (i.e. a cupboard or similar), marked as for recycling in each unit and not to be free-standing. This will be provided in addition to conventional waste storage.
- External containers provided by, and in compliance with, London Borough of Richmond Upon Thames regulations, with a dedicated storage position (enclosed bins), or store (non-enclosed bins).
- The minimum capacity of waste storage as calculated from the BS 5906 (Code of Practice for Storage and On-Site Treatment of Solid waste from buildings (2005)).
- All containers must be accessible to disabled people, particularly wheelchair users and sited on a hard, level surface within 30m level walking route of the main (level threshold) access to the dwellings.
- All waste storage should be stored in line with the Inclusive Design Principles checklist (IDP) to meet the requirements of this section.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> • <i>Completed Inclusive Design Protocol (IDP) Checklist</i> • <i>Building layout plans and site plans</i> • <i>Published information from the Local Authority/waste scheme provider describing details of waste collection</i> <p>AND</p> <ul style="list-style-type: none"> • <i>Signed pre-assessment</i> 	<ul style="list-style-type: none"> • <i>Checklist IDP (as listed for design stage) representing the dwellings as built</i> <p>OR</p> <ul style="list-style-type: none"> • <i>Post construction confirmation letter</i> • <i>Site inspection report</i>

Issue	Credits Available	Credits Achieved
Was 2: Construction Site Waste Management	3	2

Credits are awarded here for the effective and appropriate management of construction site waste, which will promote resource efficiency.

The developer/contractor will produce and implement a compliant Site Waste Management Plan (SWMP) with the following requirements:

Minimising Construction Waste

- Targets for resource efficiency
- Procedures and commitments to minimise non-hazardous waste
- Minimising hazardous waste from site
- Monitoring, measuring and reporting of hazardous and non-hazardous site waste

Diverting Waste from Landfill

Where there is a compliant SWMP including procedures and commitments to sort and divert waste from landfill through either;

- Re-use on site
- Re-use on other sites
- Salvage/reclaim for re-use
- Return to the supplier via a ‘take-back scheme’
- Recovery and recycling using an approved waste management contractor
- Compost
- According to defined waste groups.

AND

- At least 55% by weight or by volume of non-hazardous construction waste generated by the project has been diverted from landfill.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> ● <i>The compliant SWMP</i> <p>OR</p> <ul style="list-style-type: none"> ● <i>Signed pre-assessment estimate</i> 	<ul style="list-style-type: none"> ● <i>Summary SWMP including recycling, reuse and reclamation rates</i>

Issue	Credits Available	Credits Achieved
Was 3: Composting	1	1

Credits are awarded here for the provision of compost facilities which will reduce the amount of household waste sent to landfill.

A Local Authority food waste collection scheme will be available for the dwelling occupants to use. Composting storage will be required to meet the requirements of the IDP Checklist. Both internal ‘Caddys’ in a dedicated space, and the matching external bins will be provided.

A *food waste collection* leaflet will be handed to each unit with composting allocated in order to show correct use. This will be within the Home User Guide (see Man 1 below)

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> ● <i>Signed pre-assessment estimate</i> ● <i>Confirmation that the composting OR food waste store meets the IDP checklist requirements</i> 	<ul style="list-style-type: none"> ● <i>Copy of the food waste collection OR home composting leaflet to be given to occupants</i> ● <i>Post construction confirmation letter</i>

Pollution

Issue	Credits Available	Credits Achieved
Pol 1: Global Warming Potential (GWP) of Insulants	1	1

Credits are awarded here for the reduction of emissions of gases with high GWP associated with the manufacture, installation, use and disposal of foamed thermal and acoustic insulating materials.

All insulants will have a GWP of less than 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.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> • <i>Completed Checklist Pol 1</i> 	<ul style="list-style-type: none"> • <i>Completed Checklist Pol 1</i> • <i>Post construction confirmation letter</i>

Issue	Credits Available	Credits Achieved
Pol 2: NO _x Emissions	3	3

Credits are awarded here for the reduction of nitrogen oxide (NO_x) emissions into the atmosphere.

It has been assumed that the dwellings will have space and hot water heating provided through high efficiency gas boilers with a NO_x emission rate of less than 40mg/kWh.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> • <i>Signed pre-assessment estimate</i> <p>AND</p> <ul style="list-style-type: none"> • <i>Design stage SAP outputs</i> <p>OR</p> <ul style="list-style-type: none"> • <i>Documentary evidence describing:</i> <ul style="list-style-type: none"> ○ <i>Primary/secondary heating systems and flue type</i> ○ <i>Dry NO_x levels and/or boiler class of primary/secondary heating systems</i> 	<ul style="list-style-type: none"> • <i>Confirmation that the site has been constructed in accordance with design stage information provided</i> <p>OR</p> <ul style="list-style-type: none"> • <i>If not provided at design stage, make and model of boiler/CHP system</i>

Health & Well Being

Issue	Credits Available	Credits Achieved
Hea 1: Daylighting	3	1-2

Credits are awarded here for the use of good daylighting which improves occupants' quality of life and reduces the need for energy to light the home.

Daylight Calculations have been undertaken based on the drawings provided with the following results:

Unit	Living Room	Kitchen	Dining	Home Office (Location)	Credits Gained	
					HEA 1	ENE 9
1		2.76%		Living area	2	1
2		2.40%		Living area	2	1
3		3.09%		Living area	2	1
4		2.27%		Living area	2	1
5		2.76%		Living area	2	1
6		2.40%		Living area	2	1
7		3.09%		Living area	2	1
8		2.27%		Living area	2	1
9		2.55%		Living area	2	1
10		2.55%		Living area	2	1
11		1.89%		Living area	1	1
12		2.55%		Living area	2	1
13		2.55%		Living area	2	1
14		1.89%		Living area	1	1

Due to the site location, the View of Sky credits have also NOT been assumed for all units at this stage.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> <i>Up-to-date plans and elevations</i> 	<ul style="list-style-type: none"> <i>Post construction confirmation letter confirming site constructed as per design info</i>

Issue	Credits Available	Credits Achieved
Hea 2: Sound Insulation	4	1

Credits are awarded here for the use of improved sound insulation which will reduce the likelihood of noise complaints from neighbours.

At this stage it has been assumed that sound insulation with at least a 3db higher/lower performance will be achieved on all party walls and floors.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> <i>Signed pre-assessment estimate</i> <p>OR</p> <p><i>If Robust Details used:</i></p> <ul style="list-style-type: none"> <i>Confirmation of required performance standard</i> <i>Confirmation of registration with RDL</i> 	<ul style="list-style-type: none"> <i>Sound test certificates for each group and subgroup of units (as per Part E)</i> <p>OR</p> <p><i>If Robust Details used:</i></p> <ul style="list-style-type: none"> <i>Completed Robust Details Ltd Compliance Certificate</i>

Issue	Credits Available	Credits Achieved
Hea 3: Private Space	1	1

Credits are awarded here for the provision of an inclusive outdoor space which is at least partially private, which will help improve occupants' quality of life.

Plans show that each of the dwellings are to have a balcony space which is for their sole private use. These are greater than 1.5m² per bedroom, and will be accessible in compliance with BS8300 and the Code for Sustainable Homes IDP Protocol Checklist.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> • Site plan • Completed Checklist IDP • Signed pre-assessment estimate 	<ul style="list-style-type: none"> • Documentary evidence (as listed for the design stage) representing the dwelling as built • Post construction confirmation letter • Site inspection report

Issue	Credits Available	Credits Achieved
Hea 4: Lifetime Homes	4	0

Credits are awarded here for the construction of homes that are accessible and easily adaptable to meet the changes needs of current and future occupants.

It is assumed that the Lifetime Homes standard will NOT be sought.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> • Signed pre-assessment estimate • Site plan • Completed Hea4 checklist 	<ul style="list-style-type: none"> • Evidence (as listed for the design stage) representing the dwelling as built • Site inspection report

Management

Issue	Credits Available	Credits Achieved
Man 1: Home User Guide	3	3

Credits are awarded here for the provision of guidance enabling occupants to understand and operate their home efficiently and make the best use of local facilities.

A Home User Guide will be produced that provides:

Non-technical information on the developments operational issues:

- Environmental Strategy/Design & Features
- Energy Use & Efficiency
- Water Use
- Recycling & Waste
- Sustainable DIY
- Emergency Information
- Links, References & Further Information
- Provision of Information in Alternative Formats

Information on the site and its surroundings:

- Recycling & Waste
- Public Transport
- Local Amenities
- Responsible Purchasing
- Emergency Information
- Links, References & Further Information

Please see Checklist MAN 1 for a comprehensive list of the requirements of the Home User Guide.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> • Signed pre-assessment estimate AND • Completed Man 1 checklist 	<ul style="list-style-type: none"> • Copy of the Home User Guide • Confirmation that the it has been supplied to all home(s)

Issue	Credits Available	Credits Achieved
Man 2: Considerate Constructors Scheme	2	1

Credits are awarded here for environmentally and socially considerate, and accountable management of the construction sites.

The developer will commit to comply with the principles of the Considerate Constructors Scheme, achieving a score of at least 25, with a minimum of 5 points scored in each section.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> • Signed pre-assessment estimate • Confirmation of registration with the Considerate Constructors Scheme 	<ul style="list-style-type: none"> • Copy of the Considerate Constructors Certificate • Final Considerate Constructors Monitor's report

Issue	Credits Available	Credits Achieved
Man 3: Construction Site Impacts	2	2

Credits are awarded here if the construction site is managed in a manner that mitigates environmental impacts.

The developer will limit Construction Site Impacts through the following:

- Monitoring, reporting and setting targets for CO₂ and energy use on site.
- Monitoring, reporting and setting targets for Water consumption on site.
- Adopting Best Practice for air (dust) pollution from site activities.
- Adopting Best Practice for water (ground and surface) pollution from site activities.

Please see Checklist MAN 3 for the information required to be recorded and displayed on site.

The BRE SmartER tool can be used to monitor and report:

- Energy consumption from commercial transport.
- Energy consumption from fuel used onsite.
- Water consumption
- Procuring sustainable timber

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> • Completed , signed and dated Checklist Man 3 • Signed pre-assessment estimate 	<ul style="list-style-type: none"> • Evidence demonstrating that Checklist Man 3 procedures have been achieved

Issue	Credits Available	Credits Achieved
Man 4: Security	2	2

Credits are awarded here for the design of developments where people feel safe and secure- where crime and disorder, or the fear of crime, does not undermine quality of life or community cohesion.

The Proposed Development will seek consultation with an ALO or CPDA, and will follow any recommendations made in order to achieve Secured by Design Section 2 Compliance.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> • Evidence an ALO/CPDA has been consulted • A commitment to follow the ALO/CPDA advice • Signed pre-assessment estimate 	<ul style="list-style-type: none"> • Post construction confirmation letter
	<ul style="list-style-type: none"> • Assessor Site Inspection Report
	<p>OR</p> <ul style="list-style-type: none"> • As built drawings showing security features • Secured by Design certificate

Ecology

Issue	Credits Available	Credits Achieved
Eco 1: Ecological Value of Site	1	1

Credits are awarded here if the development is located on land that already has a limited value to wildlife and avoids ecologically valuable sites.

An Ecology Report will be undertaken in order to assess the Ecological Value of the site prior to construction works commencing. The development site has been assumed to be of low ecological value in accordance with the BRE CSH Ecology 1 Checklist, however this will be confirmed by a CSH compliant Ecology Report.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> Signed pre-assessment estimate <p>OR</p> <ul style="list-style-type: none"> CSH compliant Ecology Report 	<ul style="list-style-type: none"> Site inspection report Post construction confirmation letter

Issue	Credits Available	Credits Achieved
Eco 2: Ecological Enhancement	1	1

Credits are awarded here for enhancing the ecological value of the site.

This credit will be sought. The developer will commit to adopt all key and min. 30% of the additional recommendations highlighted within a CSH compliant Ecology Report.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> CSH compliant Ecology Report Signed pre-assessment estimate 	<ul style="list-style-type: none"> Post construction confirmation letter

Issue	Credits Available	Credits Achieved
Eco 3: Protection of Ecological Features	1	1

Credits are awarded here for the protection of existing ecological features from substantial damage during the clearing of the site and the completion of construction works.

The site has been deemed to be of low ecological value and therefore this credit is gained by default. This is to be confirmed by the Ecology Report as mentioned above.

Any recommendations from the ecologist will be adopted by the contractor in order to achieve this credit. This may for example include not disturbing nesting birds during the nesting seasons.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> Documentary evidence of ecological features and how they will be protected 	<ul style="list-style-type: none"> Documentary evidence of the protection of ecological features
<ul style="list-style-type: none"> Confirmation of the requirement to remove any features 	<ul style="list-style-type: none"> Post construction confirmation letter
<ul style="list-style-type: none"> Ecologist's report based on 'Code for Sustainable Homes Ecology Report Template' 	<ul style="list-style-type: none"> Post construction confirmation letter
<ul style="list-style-type: none"> Site visit report – Checklist Eco 1 	<ul style="list-style-type: none"> As at design stage

Issue	Credits Available	Credits Achieved
Eco 4: Change in Ecological Value of the Site	4	2

Credits are awarded here for minimising reductions and promoting an improvement in ecological value.

The 'change in ecological value' credits will be sought and calculations will show a 'neutral change' in ecological value. All requirements highlighted within CSH compliant Ecology Report, will be adopted in order to achieve this. TBC by Ecology Report.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> Proposed site layout Pre-development site survey Planting schedule 	<ul style="list-style-type: none"> Evidence (as listed for the design stage) representing the dwelling as built Site inspection report <p>OR</p> <ul style="list-style-type: none"> Post construction confirmation letter
<ul style="list-style-type: none"> Completed Code for Sustainable Homes Ecology Report Template Signed pre-assessment estimate 	

Issue	Credits Available	Credits Achieved
Eco 5: Building Footprint	2	0

Credits are awarded here for ensuring that land and material use is optimised across the development in order to maximise the efficient use of a building's footprint.

The Total Ground Floor Area: Total Net Internal Floor Area ratio will not be sufficient to gain credits within this section due to only 2 floors being utilised for residential purposes.

<i>Evidence Required</i>	
<i>Design Stage</i>	<i>Post Construction Stage</i>
<ul style="list-style-type: none"> Calculation of the building footprint ratio (stating NIFA and NIGFA) 	<ul style="list-style-type: none"> Calculations of the building footprint ratio (stating NIFA and NIGFA) <p>OR</p> <ul style="list-style-type: none"> Post construction confirmation letter

Declaration

We the undersigned agree that the above specification (as stated in: 25.07.2014 - CSH Pre-Assessment Estimate - 2-6 Queens Road, Teddington V1 RevA) in relation to the Code for Sustainable Homes credit requirements for this site will be implemented, and that any deviation from the requirements listed will be agreed with SRE Ltd prior to implementation.

On behalf of the Developer/Contractor:

On behalf of the Client:

Name:.....

Name:.....

Organisation:.....

Organisation:.....

Signature:.....

Signature:.....

Date:.....

Date:.....