26 Netherhall Gardens

Energy & Sustainability Statement

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C5697

MECSERVE
energy in building

Table of Contents

Executive Summary

This Energy and Sustainability Statement outlines the environmental performance of the proposed 26 Netherhall Gardens scheme in Camden. The development aspires to maximise sustainable design features, wherever practicable and feasible, that comply with current Building Regulations.

The report, prepared in support of the planning application for works in 26 Netherhall Gardens, reviews all applicable policies and requirements in terms of sustainability for the development. Camden Council planning policies and the development's response to these policies are described in the following sections. Detailed energy calculations and a Code for Sustainable Homes Pre-assessment have been completed for the scheme, including SAP 2012 Calculation for Part L 2013 of Building Regulations.

The following key energy efficiency measures should be incorporated in the proposed design to enhance the building's energy performance and reduce its annual carbon emissions:

- Enhanced passive design with low U-values that exceed Part L standards and detailing that conforms with Accredited Construction Details should be specified to reduce heat losses and eliminate thermal bridging.
- Double glazed, draught proofed units of high performance should be installed to increase the air tightness of the structure.
- Fixed internal and external lighting should be of low energy light fittings.
- Community heating scheme utilizing gas-fired condensing boilers of high efficiency and Air Source Heat Pumps to provide the dwellings with heating and hot water.

Low/Zero Carbon Technologies considered for the scheme:

- Air Source Heat Pumps that absorb heat from outside air and provide heating efficiently.

As a result of the recommended energy strategy, the dwelling's energy performance is significantly improved over Part L 2013 standards and the scheme achieves CSH Level 4. The scheme achieves a reduction of 19.1% over Part L 2013 and over 50% compared to Part L 2010 Target Emission Rate.

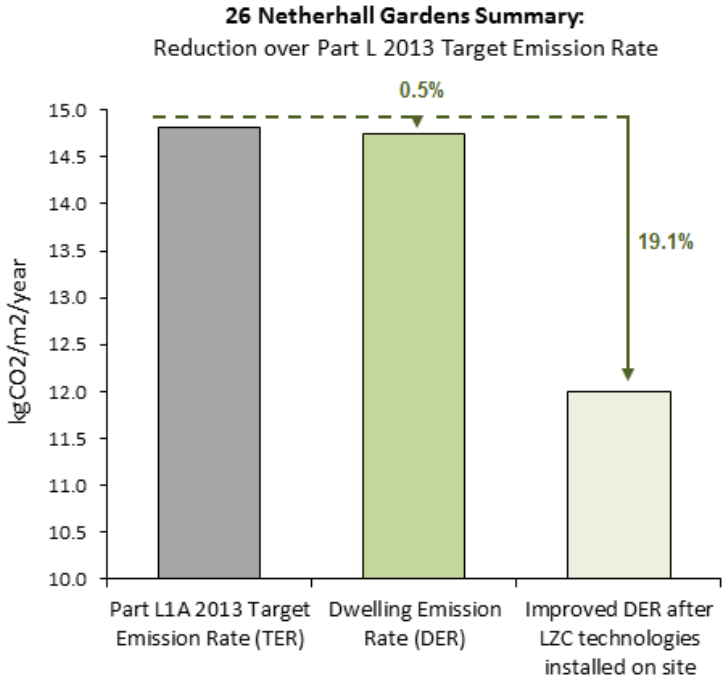

Figure 1 Final Energy Results.

1 Introduction

Over recent years, global public opinion has been increasingly concerned with the state of the environment and the impact of climate change. Buildings are responsible for a significant proportion of the world's energy consumption. In the United Kingdom domestic, commercial buildings and industry contribute 43%[1] of the total CO_2 emissions. These figures highlight the need for building owners, developers and designers to design environmentally sustainable buildings.

This report provides a review of the sustainability and efficiency benchmarks for the development and sets out targets for the development in terms of both sustainability and energy. An overview of different sustainability and energy-efficiency technologies that are likely to be appropriate for the development are also included in this statement.

As the design progresses, the strategies outlined in this report will be further developed and subjected to detailed financial feasibility studies. The environmental strategies and options outlined in this report are based on the current information available and are likely to evolve with the design. The energy calculations presented in this report will need to be continually updated through the detailed design stages to reflect any changes. The energy analysis presented here should be treated as preliminary information based on the currently available data.

1.1 The Development

The proposed 26 Netherhall Gardens scheme (Figure 2), located within the Fitzjohns Netherhall Conservation area, in Camden, includes the erection of a block of five residential units. The development comprises four maisonettes and one flat.

For a detailed description of the proposed design, please refer to the Design and Access Statement prepared by Squire and Partners Architects.

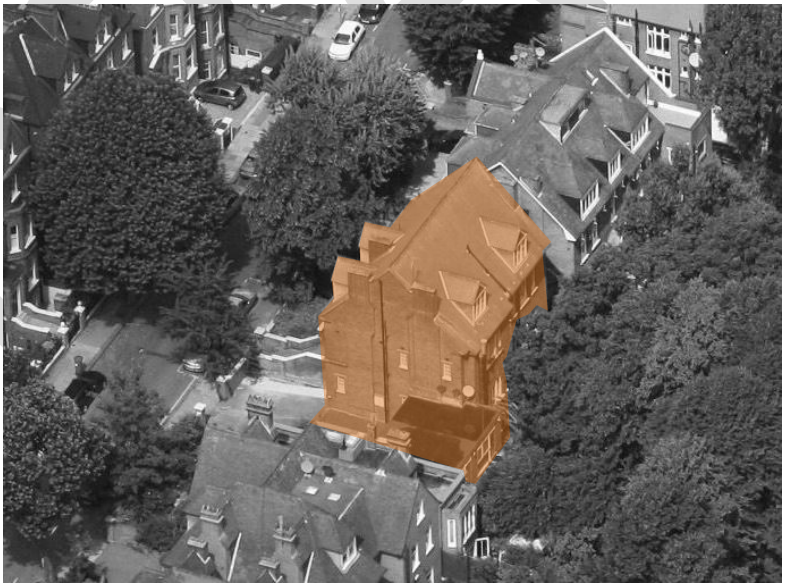

Figure 2 Existing Site - Bird's Eye View

[1] Department for Environment, Food and Rural Affairs, http://www.defra.gov.uk/, 2008

2 Overview of Environmental Standards, Targets and Policies

2.1 National Policies

This section provides an overview of the environmental rating schemes, mandatory regulations and policy documents applicable to the development.

Environmental benchmarks are principally derived from the following documents:

- The London Plan – Spatial Development Strategy for Greater London[2], July 2011.
- Core strategies CS13[3] and CS18[4], Camden Core Strategy 2010-2025
- Part L of the 2013 Building Regulations: Conservation of fuel and power

Key national and regional environmental policy documents consulted in the development of this report and environmental strategies include:

- National Planning Policy Framework[5]
- Development Policies DP22[6] and DP23[7], Camden Development Policies 2010-2025
- Camden planning Guidance CPG3 Sustainability, September 2013

In addition to the standards, targets and policies discussed above, the relevant British Standards and CIBSE Guidelines were used to assist in determining the most appropriate Ecologically Sustainable Design (ESD) initiatives for the development.

2.2 Camden Council Planning Requirements

The 26 Netherhall Gardens scheme falls under the planning requirements of Camden Council. According to Development Policy 22, the Council has chosen Code for Sustainable Homes as the environmental assessment method to assess the sustainability performance of new build housing. The council expects new built dwellings to meet CSH Level 4 by 2013. In addition, DP22 sets a minimum standard 50% of un-weighted credits under Energy, Water and Materials.

Mecserve Ltd. has been appointed by the client to provide sustainability advice for the scheme and complete a Code for Sustainable Homes pre-assessment for the development. Mecserve is an engineering design consultancy with more than 30 years' experience in construction industry. Mecserve has Accredited Domestic Energy Assessors and Accredited EcoHomes/ Code for Sustainable Homes assessor. This report is reviewed and authorised by Mecserve accredited assessors.

2 The London plan – Spatial Development Strategy for Greater London, http://www.london.gov.uk/mayor/strategies/sds/london_plan/lon_plan_all.pdf

3 CS13 Tackling Climate change through promoting higher environmental standards, Camden Core Strategy 2010-2025

4 CS18 Dealing with our waste and encouraging recycling, Camden Core Strategy 2010-2025

5 National Planning Policy Framework, http://www.communities.gov.uk/documents/planningandbuilding/pdf/2116950.pdf

6 DP22 Promoting sustainable design and construction, Camden Development Policies 2010-2025

7 DP23 Water, Camden Development Policies 2010-2025

3 Code for Sustainable Homes

The Code for Sustainable Homes is an environmental assessment method for rating and certifying the performance of new homes. It is a national standard for use in the design and construction of new homes with a view to encouraging continuous improvement in sustainable home building.

To maintain a flexible system the Code adopts a 'balanced score-card' approach to the assessment and rating of a building or project. This means that, to achieve a particular level of performance the majority of CSH credits can be traded i.e. not meeting a credit in one area can be off-set by achieving a credit in another to achieve the target BREEAM rating.

However, to ensure that performance against fundamental environmental issues is not over-looked in pursuit of a particular rating, CSH sets minimum standards of performance in key areas i.e. dwelling emission rate and indoor water use. The CSH categories are listed below. The score is totalled and converted to a CSH Level. The minimum score required for each rating is shown in Table 1 below.

Table 1. Minimum score required for each rating regarding BREEAM Domestic Refurbishment assessment.

BREEAM Categories		BREEAM Ratings	
Energy & CO_2 Emissions	Pollution	Level 1	**36 Points**
Water	Health & Wellbeing	Level 2	**48 Points**
Materials	Management	Level 3	**57 Points**
Surface Water Run-off	Ecology	Level 4	**68 Points**
Waste		Level 5	**84 Points**
		Level 6	**90 Points**

A preliminary CSH Pre-assessment has been completed for the scheme that shows how Level 4 can be achieved. The scheme has been designed to meet all the minimum CSH standards set in Energy and Water categories required for a 'Level 4' rating. A detailed CSH Pre-assessment can be found in Appendix B.

The following key elements/strategies are considered in the 26 Netherhall Gardens development:

- Enhanced passive design and energy efficient systems installed to reduce the dwelling's emission rate
- Energy efficient light fittings for internal and external lighting
- Use of photovoltaic panels to supply the dwelling with renewable energy
- Water efficient sanitaryware to be installed to reduce water consumption
- Building materials and insulation used will be responsibly sourced
- A waste strategy to be developed in regards to construction site waste management
- Dedicated internal storage to be provided in combination with Camden's collection scheme for household waste
- Responsible construction practices will be adopted for the scheme

The following sections describe the strategy developed for the main Code categories i.e. Water, Materials and Waste in order to comply with the minimum CSH Level 4 credits and Camden Council's requirements i.e. a minimum standard 50% of un-weighted credits under Water and Materials.

3.1 Water strategy

Camden Council requires new built developments to reduce their water consumption by incorporating water efficient features. Limiting the amount and rate of run-off is also crucial for decreasing the pressure on the combined sewer network and the risk of flooding.

The dwellings will be designed to be water efficient so as to reduce the consumption of potable water from all sources. The development will comply with both Part G 2010 of Building Regulations, in regards to sanitation, hot water safety and water efficiency, and Code Level 4 minimum requirements. This can be achieved through the installation of low water use sanitaryware. According to the CSH Pre-assessment presented in Appendix B, the scheme achieves more than 80% of Water credits.

The development is within an area of low annual probability of flooding. However, the drainage design will meet Camden Council's requirements and Building Regulations to minimise the risk of flooding and other environmental damage in watercourses.

3.2 Materials

Construction materials with low environmental impact across their entire life cycle will be specified for the scheme. Selection of appropriate materials will be done in accordance to BRE Green Guide that ranks materials and components on an A+ to E rating scale, where A+ represents the best environmental performance and least environmental impact.

In addition, responsible sourced materials from suppliers that participate in responsible sourcing schemes will be specified. All timber specified will also be sourced from schemes supported by the Central Point of Expertise for Timber Procurement such as Forest Stewardship Council (FSC) accreditation, which ensures that the harvest of timber and non-timber products maintains the forest's ecology and its long-term viability.

Thermal and acoustic insulation materials in the main elements of the dwelling using substances that have a Global Warming Potential (GWP) less than 5 will be also specified. Non-toxic but environmentally sensitive building materials that do not produce VOC (volatile organic compounds and formaldehyde) which can affect human health will be used.

As a result, the scheme will achieve over 65% of the Materials credits in Code for Sustainable Homes.

3.3 Waste strategy

A Site Waste Management Plan (SWMP) will be developed for the scheme to promote resource efficiency via the appropriate management of construction site waste, minimise non-hazardous construction waste and monitor, measure and report site waste production. SWMP will follow Camden Council's waste hierarchy wherever possible and feasible by promoting reduction, re-use and recycle of materials on site.

Camden Council provides an efficient weekly collection scheme. In terms of recycling Camden provides four types of doorstep recycling collections i.e. paper and card collections, glass, cans and plastics collections, food waste collections and green garden waste collections. Camden's collecting scheme in combination with adequate internal storage capacity will be provided to the occupants to promote recycling.

4 Energy Efficiency Assessment

The following section of this report details the energy demand for the development. The building is first assessed against the requirements of Building Regulations Part L to establish a baseline energy performance. Then the improvements in energy efficiency from passive and active energy measures are introduced. A feasibility assessment is then completed to look at the most appropriate low and zero carbon technologies for the development.

This approach conforms to the GLA energy hierarchy of improving energy efficiency and providing on-site renewables. Our approach also follows the emerging London plan policy of prioritising reductions in carbon emissions over provision of on-site LZC technologies.

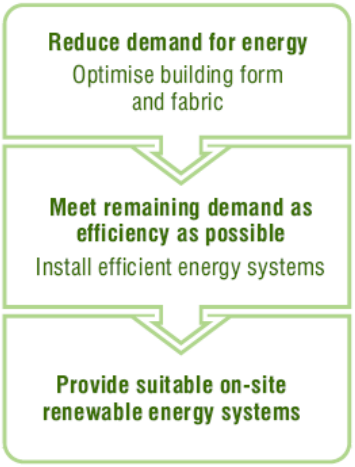

Figure 3 Energy Optimisation Process

4.1 Energy Calculations

STROMA FSAP 2012 software, approved by BRE for full implementation of the Standard Assessment Procedure (SAP 2009), was used to assess the energy performance and annual carbon emissions of the new built scheme after energy efficient measures have been applied. The energy calculation completed for the building gives the predicted CO_2 emission rate.

4.1.1 Energy Efficient Building Design

In order to comply with the requirements of Part L of the building regulations it is necessary to reduce energy consumption by good design. The first step in the hierarchy is to reduce greenhouse gas emissions through energy efficient building design. Our approach to this has been to concentrate on passive design measures that will reduce energy demand in the first instance before looking at active energy efficiency measures.

4.1.2 Passive Energy Efficiency Design

Building fabric will be specified to exceed Part L1A 2013 standards. Thermal elements of low U-values will reduce heat losses and therefore decrease heating demand. Double glazed windows of high performance will provide daylight to the occupied spaces and solar gains for passive heating in winter. All openings will be draught proofed to increase the structure's air-tightness. All details will conform with Accredited Construction Details to minimise inconsistency in thermal envelope performance by avoiding thermal bridging.

4.1.3 Active Energy Efficiency Design

A community heating scheme, utilizing gas-fired boilers and Air Source Heat Pumps of high efficiency, will provide the dwellings with space heating and domestic hot water demand throughout the year. Comfort cooling will be also provided by A-rated split units.

The base lighting scheme throughout will use dedicated low-energy fittings either fluorescent or LEDs. All lighting systems will be provided with sufficient controls to allow efficient operation.

4.1.4 District Energy Networks

There is currently no district heating network in the area.

4.1.5 On-site low carbon and renewable energy generation

Although there is no specific target set for developments to achieve in regards to renewable energy systems, Camden council promotes on-site generation of renewable energy through its various planning policies. Therefore, the development team has looked at the feasibility of integrating each from the following technologies into the development. The following section of the report briefly assesses the technologies available for the development.

4.1.5.1 CHP

As the annual demand for space heating and domestic hot water for a small-scale residential project, consisting of only five units, is low and not stable throughout the year, the option of a combined heat and power (CHP) unit is considered unfavourable. Provision of a CHP system would also require excessive space for the plant and may also result in high noise levels for a residential unit. Moreover, CHP units have high capital and maintenance costs.

4.1.5.2 Biomass Boilers

A biomass boiler would work effectively against a consistent heating load. Within a residential area there are concerns about the effect of small scale biomass systems on air-quality particularly with respect to particulates released through the boiler flue. Within this constrained site it would be difficult to provide sufficient space for biomass storage. For these reasons, we would not recommend a biomass boiler for this development.

4.1.5.3 Wind Turbines

Wind turbines installed within urban areas are less efficient mainly due to turbulences on air movement in the urban environment. They require a certain level of wind to reach their peak efficiency, which is often difficult in London where there are large obstacles, such as buildings and trees, which distort the flow of wind. Furthermore, installation of such a system might have a negative impact to the surroundings in terms of aesthetics, given that the scheme is within a conservation area, as well as due to its noise and vibration levels. Therefore, this technology is not suitable for this site.

4.1.5.4 Ground Source Heating & Cooling

Heating and cooling demand in the scheme is not balanced throughout the year. Therefore, that would make a ground source heat pump (GSHP) to work in a much lower efficiency. Moreover, GSHPs have high capital cost mainly due to the excavation of trenches or boreholes. Therefore, installation of GSHP is not recommended for this development.

4.1.5.5 Photovoltaic Panels

Photovoltaic panels could efficiently provide a fraction of the dwelling's daily electricity consumption. The design team has reviewed the building roofscape for the development. PV panels would work efficiently if south facing and not overshaded by neighbour buildings or

topographical features. Therefore, PV panels installed on the W/E facing pitched roof of the development would not reach their peak efficiency. In addition, the panels could have a negative impact on the conservation areas, where the scheme is located.

4.1.5.6 Solar Hot Water Heating (SHWH)

Solar thermal hot water systems can work well on residential developments. These should be facing 30 degrees within South to maximise their efficiency. Given the roof layout, however, the systems would not perform well as the panels would also be overshaded by neighbour buildings and obstacles like trees. Taking also into consideration the negative impact these may have on the special character of the surroundings, we would not recommend any panels to be installed on the roof.

4.1.5.7 Air Source Heat Pump

An air-to-water system uses renewable heat absorbed form outside air to raise the temperature of the water that circulates in the underfloor system. Air Source Heat Pumps perform better when connected to an underfloor heating that requires lower water temperature in comparison to radiators. ASHPs have low maintenance costs and they are simple to install compared to a GSHP. ASHPs, however, tend to drop their efficiencies when ambient air is low during wintertime as there is no heat to absorb. For this, back-up gas-fired boilers, connected to the proposed community heating scheme, will provide the dwellings with heating when external air temperature is low.

In summary, typical renewable energy systems that could perform well when installed in residential units, such as PV panels and solar thermal panels, would not be recommended for the scheme. This is mainly due to the roof layout and overshadowing by neighbour buildings that would cause their efficiency to drop significantly. Therefore, a community heating system, utilizing Air Source Heat Pumps of high efficiency and gas-fired condensing boilers, could perform well when each unit operates during hours when its peak efficiency can be achieved.

4.2 Carbon Emissions Calculation Results

Figure 4 below shows the reduction in CO_2 emissions over Part L 2013 standards due to integration of the measures outlined above in the proposed strategy. The energy efficiency measures incorporated into the development reduce predicted carbon emissions by 19.1% with the introduction of efficient systems to provide the dwelling with space heating and domestic hot water and renewable energy technologies installed on site. The scheme also achieves a reduction of over 50% over Part L 2010 Target Emission Rate, which is greater than the minimum requirement for Code Level 4. Table 2 summarises the reduction in annual carbon emissions of the development.

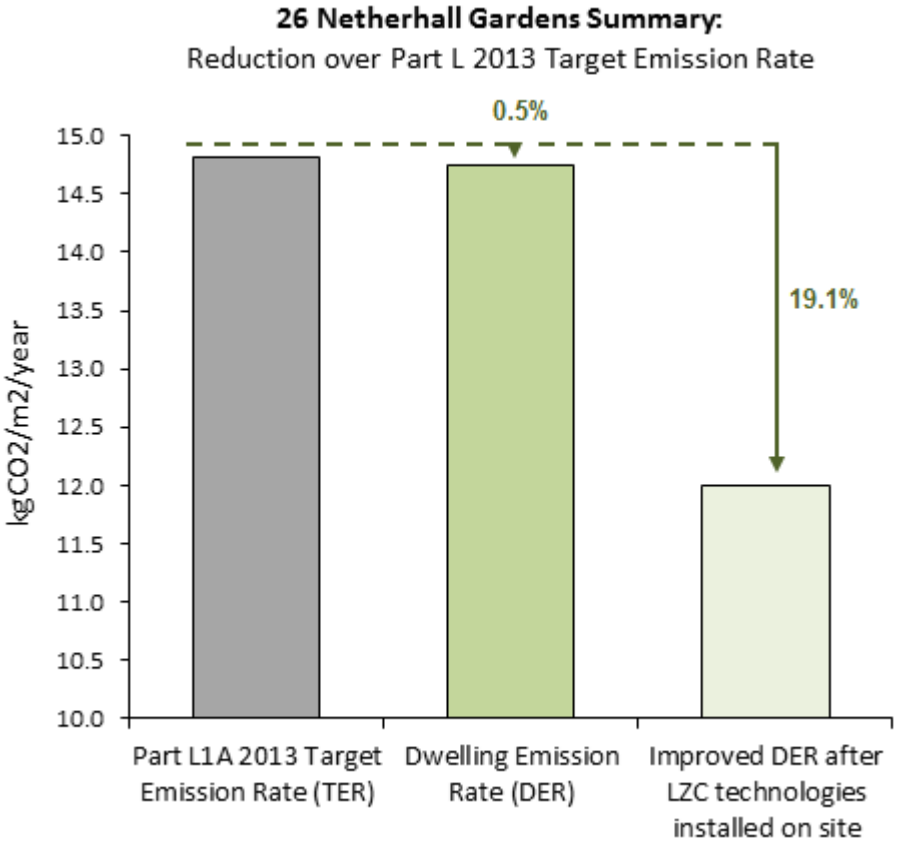

Figure 4 Carbon Emissions Results

Table 2 Summary of Building Baseline Emission Rates

	Annual Carbon Emissions
	$kgCO_2/m^2/year$
Part L1A 2013 Target Emission Rate	14.8
DER with energy efficient measures proposed	14.7
DER with renewable energy technologies installed	12.0

5 Conclusions

This report and the accompanying pre-assessment demonstrate that the development team has carefully considered sustainable design issues that exceed the statutory minimum requirements across a wide range of environmental design criteria.

Based on our initial assessment, the development will be able to achieve CSH Level 4 with over 50% of the credits achieved under Energy, Water and Materials. The CSH pre-assessment presented in Appendix B of the report demonstrates how this rating could be achieved.

SAP 2013 energy calculations, carried out for the scheme, demonstrate how the development responds to the Camden Council policies relating to energy efficiency and compliance with current Building regulations is achieved. The scheme complies with both Part L 2013 targets set in terms of carbon emission rate and fabric energy efficiency.

This report has demonstrated how energy efficiency measures have been incorporated into the development in order to deliver CO_2 emissions savings. These measures include:

- Thermal elements of low U-values that exceed Part L1A 2013 standards.
- Double glazed and draught proofed units of high performance will be installed and Accredited Construction Details will be used to avoid thermal bridging, reduce heat losses and increase the air tightness of the structure
- A community heating scheme utilizing ASHPs and gas-fired boilers to provide space heating and domestic hot water efficiently.
- Extensive provision of metering and controls.
- Energy efficient lighting, featuring low energy fittings, will be used extensively throughout the development.

The energy efficiency section of this report has demonstrated that with the application of good energy efficient design and integration of renewable energy technologies, suitable for the scheme, predicted carbon emissions from the development are 19.1% below the baseline emissions based on Part L 2013 standards (over 50% reduction compared to Part L 2010).

APPENDIX A - SAP 2009 Calculation Parameters

STROMA FSAP 2012 software, approved by BRE for full implementation of the Standard Assessment Procedure (SAP 2012), was used to assess the energy performance and annual carbon emissions of 26 Netherhall Gardens scheme after energy efficiency measures have been integrated in the design. SAP Calculations were based on architectural layouts and the following assumptions on building fabric and service systems:

Building Fabric Performance		
U-values [W/m2.K]	Wall	0.25
	Roof	0.15
	Floor	0.15
	Windows	1.40 (g-value: 0.63)
	Doors	1.00
Air tightness		4.0 m3/m2.hr
Thermal Bridging		Construction Details will be Accredited to minimise inconsistency in thermal envelope performance thus avoiding thermal bridging and reducing heat losses.
Building HVAC systems		
Heating system		Community heating scheme: - Gas-fired condensing boilers of 89% efficiency (Heat fraction: 0.2) - Air Source Heat Pumps of 340% efficiency (Heat fraction: 0.8)
		Secondary heating system: None
Heating controls		In compliance with Domestic Building Services Compliance Guide 2013 Charging system linked to use of community heating, programmer and TRVs
Domestic Hot Water		Hot water will be provided by the communal heating scheme utilizing gas-fired boilers and ASHPs
Ventilation		Mechanical Ventilation with Heat Recovery (SFP: 0.45 W/l/s, 94% efficiency)
Comfort cooling		A-rated split units
Lighting		
All light fittings will be dedicated low energy types; either LEDs or CFL		

APPENDIX B – Code for Sustainable Homes Pre-Assessment

C5697: 26 Netherhall Gardens
Pre-Assessment Worksheet

Indicates cells that have a required minimum to meet different levels

Issue ID	Issue	Measurement Criteria	No of Credits	Potential % Points Available	Target Credits	Target Score (Weighting x Target Credits)	Notes
1.26%	**CATEGORY 1: Energy and Carbon Dioxide Emissions**						
Ene 1	Dwelling Emission Rate	**Criteria** % Improvement 2010 DER/TER*1 / Credits*2 / Mandatory Requirements ≥ 8% — 1 ≥ 16% — 2 ≥ **25%** — **3** — **Level 4** ≥ 36% — 4 ≥ 47% — 5 ≥ 59% — 6 ≥ 72% — 7 ≥ 85% — 8 ≥ **100%** — **9** — **Level 5** **Zero *Net CO_2 Emissions*** — **10** — **Level 6** **Default Cases** None	10	11.7	6	6.69	There is a MANDATORY requirement of 25% improvement in carbon emissions, over Building Regulations' Target Emission Rate, in order to achieve Code Level 4. According to preliminary SAP 2009 Calculation completed for the scheme, 5 credits can be awarded.
Ene 2	Fabric Energy Efficiency	**Criteria** Dwelling Type*1: Apartment Blocks, Mid-Terrace / End Terrace, Semi-Detached & Detached Fabric Energy Efficiency kWh/m²/year / Credits*2 / Mandatory Levels ≤ 48 — ≤ 60 — 3 ≤ 45 — ≤ 55 — 4 ≤ 43 — ≤ 52 — 5*3 ≤ 41 — ≤ 49 — 6 ≤ **39** — ≤ **46** — **7** — **Levels 5 & 6** ≤ 35 — ≤ 42 — 8 ≤ 32 — ≤ 38 — 9 **Default Cases** None	9	10.6	0	0.00	This is currently an assumption, Design Final FEE worksheets will be required in order to calculate the average FEE across the building.
Ene 3	Energy Display Devices	**Criteria** / **Credits** Where current electricity **OR** *primary heating fuel* consumption data are displayed to occupants by a *correctly specified energy display device.* — 1 Where current electricity **AND** primary heating fuel consumption data are displayed to occupants by a correctly specified energy display device. — 2 **Default Cases** Where electricity is the primary heating fuel and current electricity consumption data are displayed to occupants by a correctly specified energy display device. — 2	2	2.3	2	2.35	An energy display device that shows gas and electricity consumption to be provided.
Ene 4	Drying Space	**Criteria** / **Credits** Where space and equipment are provided for drying clothes: — 1 • For 1 – 2 bedroom dwellings, the drying equipment must be capable of holding 4m+ of drying line • For 3+ bedroom dwellings, the drying equipment must be capable of holding 6m+ of drying line The *drying space* (internal or external) must be *secure* **Default Cases** None	1	1.2	1	1.17	Internal drying equipment, fixed and located in an adequate location, capable of holding a minimum of 4-6m of drying line should be provided along with suitable ventilation meeting approved document F.
Ene 5	Energy Labelled White Goods	**Criteria** / **Credits** Where the following appliances are provided and have an **A+** rating under the *EU Energy Efficiency Labelling Scheme*: — 1 • Fridges and freezers or fridge-freezers Where the following appliances are provided and have an **A** rating under the EU Energy Efficiency Labelling Scheme: — 1 • Washing machines and dishwashers **AND EITHER** • Tumble dryers or washer dryers have a **B** rating (where a washer dryer is provided, it is not necessary to also provide a washing machine) **OR** • *EU Energy Efficiency Labelling Scheme Information* is provided to each dwelling in place of a tumble dryer or a washer dryer Where no white goods are provided but EU Energy Efficiency Labelling Scheme Information is provided to each dwelling — 1 Note: To obtain this credit, any white goods available to purchase from the developer must be compliant with the above criteria. **Default Cases** None	2	2.3	2	2.35	Assumed that an A + rated fridge freezer, A rated washing machine, A rated dishwasher and EU energy efficiency labelling scheme information to be provided.

C5697: 26 Netherhall Gardens
Pre-Assessment Worksheet

Indicates cells that have a required minimum to meet different levels

Issue ID	Issue	Measurement Criteria	No of Credits	Potential % Points Available	Target Credits	Target Score (Weighting x Target Credits)	Notes
Ene 6	External Lighting	**Criteria** / **Credits** **Space Lighting** Where all external *space lighting*, including lighting in common areas, is provided by *dedicated energy efficient fittings* with appropriate *control systems*. — 1 Note: *Statutory safety lighting* is not covered by this requirement **Security Lighting** Where all *security lighting* is designed for energy efficiency and is adequately controlled such that: — 1 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*: • Is provided by *dedicated energy efficient fittings* AND • Is fitted with *daylight cut-off sensors* OR a *time switch* **Default Cases** — 1 If no security lighting is installed, the security lighting credit can be awarded by default, provided all of the requirements related to the specification of 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	2	2.3	2	2.35	As a minimum, low energy light bulbs to fittings, with appropriate methods of control, to be installed for all external space/ security lighting (internal communal corridors/landings/stairwells external communal areas, main entrances, bin/cycle stores, balconies, terraces etc)
Ene 7	Low and Zero Carbon Technologies	**Criteria** / **Credits** Where energy is supplied by *low or zero carbon technologies* **AND** There is a 10% reduction in CO_2 emissions as a result — 1 **OR** There is a 15% reduction in CO_2 emissions as a result — 2 **Default Cases** None	2	2.3	1	1.17	It is assumed that the LZC installed will enable each unit to achieve a minimum 10% reduction in CO2 emissions.
Ene 8	Cycle Storage	**Criteria** / **Credits** Where individual or communal cycle storage is provided, that is *adequately sized, secure* and *convenient*, for the following number of cycles: Studios or 1 bedroom dwellings – storage for 1 cycle for every two dwellings — 1 2 and 3 bedroom dwellings — storage for 1 cycle per dwelling 4 bedrooms and above — storage for 2 cycles per dwelling **OR** Studios or 1 bedroom dwellings – storage for 1 cycle per dwelling — 2 2 and 3 bedroom dwellings – storage for 2 cycles per dwelling 4 bedrooms and above – storage for 4 cycles per dwelling Note: The requirements for secure cycle storage are met where compliance with clause 35 of Secured by Design (SBD) New Homes 2010 is achieved. **Default Cases** None	2	2.3	2	2.35	2 and 3 bedroom units require minimum storage space for two cycles, in order to achieve 2 credits. External provision with 10 cycle storage spaces noted on the GF plan would need to be covered on a minimum of 3 sides and would require secure fixings in order to meet the credit requirements.
Ene 9	Home Office	**Criteria** / **Credits** Where *sufficient space* and *services* have been provided which allow occupants to set up a home office in a *suitable room*. — 1 The space dedicated for use as a home office must have *adequate ventilation* and achieve an *average daylight factor* of 1.5%. **Default Cases** None	1	1.2	1	1.17	It is assumed that space & services (2 x dble electric & phone sockets) will be provided within a suitable room (2 Beds - bedroom(s)/lounge/study/dining room, 3 beds - 2nd or 3rd bedroom/study/dining room). N.B: Daylighting calcs to the room selected will need to achieve an ADF of 1.50%.
		Subtotal	**31**	**36.4**		**19.61**	

C5697: 26 Netherhall Gardens
Pre-Assessment Worksheet

Indicates cells that have a required minimum to meet different levels

Issue ID	Issue	Measurement Criteria	No of Credits	Potential % Points Available	Target Credits	Target Score (Weighting x Target Credits)	Notes
1.50%	**CATEGORY 2: Water**						
Wat 1	Indoor water use	**Criteria** Water consumption (litres/person/day) / Credits / Mandatory Levels ≤ 120 l/p/day — 1 ≤ 110 l/p/day — 2 ≤ 105 l/p/day — 3 — Levels 3 and 4 ≤ 90 l/p/day — 4 ≤ 80 l/p/day — 5 — Levels 5 and 6 **Default Cases** None	5	7.5	4	6.00	Water efficient sanitaryware will be selected to exceed the CfSH Code 4 mandatory requirement of <105 l/p/day. Water use calculations will be completed to demonstrate <90 l/p/day.
Wat 2	External Water Use	**Criteria** — **Credits** Where a *correctly specified* and *sufficient sized system to collect rainwater* for external/internal irrigation/use has been provided to a dwelling with a garden, patio or communal garden space (examples of such systems include *rainwater butts* and *central rainwater collection systems*) — 1 **Default Cases** If no individual or communal *garden* spaces are specified or if only balconies are provided, the credit can be awarded by default — 1	1	1.5	1	1.50	Units with private gardens, patios or terraces will require a 150-200 litre water butt connected to the RWP with automatic overflow to the municipal drsinage system. Tap, lid & stand also required.
		Subtotal		**9.0**		**7.50**	
0.30%	**CATEGORY 3: Materials**						
Mat 1	Environmental Impact of Materials	**Criteria** — **Credits** — **Mandatory Levels** Where at least three of the following five key elements of the *building envelope* achieve a rating of A+ to D in the 2008 version of *The Green Guide*: • Roof • External walls • Internal walls (including separating walls) • Upper and ground floors (including separating floors) • Windows — All Levels Where the *Code Mat 1 Calculator Tool* is used to assess the number of credits awarded for the five key elements described above — 1 – 15 **Default Cases** None	15	4.5	10	3.00	Currently an assumption, construction details of the main elements are required in order to calculate the number of credits available under this issue
Mat 2	Responsible Sourcing of Materials: Basic Building Elements	**Criteria** — **Credits** 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 — 1–6 *1 **Default Cases** None	6	1.8	4	1.20	It is currently assumed that two-thirds of these credits will be achieved. This will be kept under review through the design and specification process.
Mat 3	Responsible Sourcing of Materials: Finishing Elements	**Criteria** — **Credits** Where 80% of the *assessed materials* in the following *Finishing Elements* are responsibly sourced: a) Staircase b) Windows c) External & internal doors d) Skirting e) Panelling f) Furniture g) Fascias h) Any other significant use Additionally, 100% of any timber in these elements must be *legally sourced* — 1–3 **Default Cases** None	3	0.9	2	0.60	It is currently assumed that two-thirds of these credits will be achieved. This will be kept under review through the design and specification process.
		Subtotal		**7.2**		**4.80**	

C5697: 26 Netherhall Gardens
Pre-Assessment Worksheet

Indicates cells that have a required minimum to meet different levels

Issue ID	Issue	Measurement Criteria	No of Credits	Potential % Points Available	Target Credits	Target Score (Weighting x Target Credits)	Notes
0.55%	**CATEGORY 4: Surface Water Run-off**						
Sur 1	Management of Surface Water Run-off from Developments	**Criteria** **Hydraulic Control Criteria** (Credits: None; Mandatory Elements: All Levels) The *SuDS Management Train* should be used as a guide to achieve the following: *1) Peak Rate of Run-off* If there is no increase in the man-made impermeable area as a result of the new development, then the peak rate of run-off criterion does not apply. Where there is an increase in impermeable area, ensure that the peak rate of run-off over the development lifetime, allowing for climate change, will be no greater for the developed site than it was for the *pre-development* site. This should comply at the 1 year[1] and 100 year[2] return period events (see Calculation Procedures). Where the pre-development peak rate of run-off for the site would result in a requirement for the post-development flow rate (referred to as the *limiting discharge*) to be less than 5 *l/s* at a *discharge point*, a flow rate of up to 5 *l/s* may be used where required to reduce the risk of blockage. *Note: If as a result of the new development, there is an increase in the volume of run-off discharged for the 100 year 6 hour event and section 2A cannot be met (see section 2 below), these run-off rates do not apply.* *continued* **Criteria** (Credits / Mandatory Elements) *2) Volume of Run-off* If there is no increase in the man-made impermeable area as a result of the new development, then the volume of run-off criteria does not apply. If the developed site would otherwise discharge, over the development lifetime allowing for climate change, a greater volume of rainwater run-off than the pre-development site for the 100 year 6 hour event, (see Calculation Procedures) then criterion A applies. If A cannot be satisfied then B applies. **A**: Ensure that the post development volume of run-off, allowing for climate change over the development lifetime, is no greater than it would have been before the development. The additional predicted volume of run-off for the 100 year 6 hour event must be prevented from leaving the site by using infiltration or other *SuDS techniques* (see Definitions). **OR** **B**: If A cannot be satisfied (full justification must be provided) then reduce the post development peak rate of run-off to the limiting discharge. The limiting discharge is the pre-development flow rate equivalent to the 1-year peak flow rate, mean annual flood flow rate (Qbar) or 2 *l/s*/ha, whichever is the highest flow rate. For the 1-year peak flow rate the 1 year return period event criterion in section 1 above, applies. For all other events up to the 100 year return period event, the peak rate of run-off for the developed site must not exceed the limiting discharge. Where the limiting discharge flow rate would require a flow rate of less than 5 *l/s* at a discharge point, a flow rate of up to 5 *l/s* may be used where required to reduce the risk of blockage. *Note: Criterion B generally results in more storage than compliance with criterion A.* 3) Designing for local drainage system failure. Demonstrate that the flooding of property would not occur in the event of local drainage system failure (caused either by extreme rainfall or a lack of maintenance). *Note: Where the run-off is being discharged into an existing drainage system, the responsible body may stipulate a more stringent set of hydraulic flow rate criterion which will therefore take precedence.* **Water Quality Criteria** 1. One credit can be awarded by ensuring there is no discharge from the developed site for rainfall depths up to 5 mm (see Calculation Procedures). (1) 2. One credit can be awarded by ensuring that: (1) • 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. *Note: The SuDS Manual best practice recommendations should be followed where there is a risk to groundwater from infiltration (for example contaminated land, developments with high risk of pollution incidents)* **Default Cases:** The mandatory criteria can be deemed to be met by default if the site discharges rainwater directly to a *tidal estuary* or the sea. Credits cannot be awarded unless the relevant water quality criteria are met.	2	1.1	0	0.00	It is assumed that the mandatory requirements will be met due, if additional credits are sought under this issue attenuation measures will need to be implemented (SUD's) and the water quality measures adhered to and evidenced.
Sur 2	Flood Risk	**Criteria** (Credits) **EITHER** Two credits are available for developments situated in Zone 1 – *low annual probability of flooding* (as defined in PPS25 *Development and Flood Risk*) and where the site-specific *Flood Risk Assessment (FRA)* indicates that there is low risk of flooding from all sources. (2) **OR** One credit is available for developments situated in Zones 2 and 3a – *medium* and *high annual probability of flooding* where the finished ground floor level of all habitable parts of dwellings and access routes to the ground level and the site, are placed at least 600 mm above the *design flood level* of the *flood zone*. (1) The Flood Risk Assessment accompanying the planning application must demonstrate to the satisfaction of the local planning authority and statutory body that the development is appropriately flood resilient and resistant, including safe access and escape routes where required, and that any *residual risk* can be safely managed. **Default Cases** None	2	1.1	2	1.10	According to the Environment Agencies interactive on-line Flood Risk Map the development is in an area of low annual probability of flooding from rivers or sea. However, a Flood Risk Assessment must be completed assessing all sources of flood in order to award relevant credits.
		Subtotal		**2.2**		**1.10**	

C5697: 26 Netherhall Gardens
Pre-Assessment Worksheet

Indicates cells that have a required minimum to meet different levels

Issue ID	Issue	Measurement Criteria	No of Credits	Potential % Points Available	Target Credits	Target Score (Weighting x Target Credits)	Notes
0.91%	**CATEGORY 5: Waste**						
Was 1	Storage of Non-recyclable Waste and Recyclable Household Waste	**Criteria** / **Credits** / **Mandatory Elements** **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: • Recyclable household waste is sorted **after** collection and a single bin of at least 30 litres is provided in an adequate internal space. • Materials are sorted **before** collection and at least three separate bins are provided with a total capacity of 30 litres. Each 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 three different types of recyclable waste. **No Local Authority collection scheme but adequate external storage capacity** For houses and flats there must be at least three identifiably different internal storage bins for recyclable waste located in an adequate internal space: • with a minimum total capacity of 30 litres • with a minimum individual capacity of at least 7 litres. **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 a minimum individual capacity of 40 litres. **For 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 three types of recyclable waste in identifiably different bins. **Default Cases** None	4	3.2	4	3.20	Mandatory elements to be complied with. A combination of internal storage capacity in an adequate internal space with LB Camden's kerbside refuse & recycling service. Evidence of accessible storage areas that comply with the IDP Checklist required. The minimal mandatory capacity requirements based on a weekly collection for: 2 Beds - 170 litres per unit 3 beds - 240 litres per unit As the L.A provide a post sorted mixed recycling collection a 30 litre internal recyclng bin is required alongside the refuse bin. N.B: Please check the L.A capacity requirements and the collection frequency. Fortnightly collections would require additional storage capacity above the Code minimal requirements as noted above.
Was 2	Construction Site Waste Management	**Criteria** / **Credits** **Minimising Construction Waste** Where there is a compliant Site Waste Management Plan (SWMP) that contains: — 1 a. Target benchmarks for resource efficiency, i.e. m^3 of waste per 100 m^2 or tonnes of waste per 100 m^2 set in accordance with *best practice* b. Procedures and commitments to minimize non-hazardous construction waste at design stage. Specify waste minimisation actions relating to at least 3 waste groups and support them by appropriate monitoring of waste. c. Procedures for minimising hazardous waste d. Monitoring, measuring and reporting of hazardous and non-hazardous site waste production according to the defined waste groups (according to the waste streams generated by the scope of the works) **Diverting Waste from Landfill** Where there is a compliant Site Waste Management Plan (SWMP) including procedures and commitments to sort and divert waste from landfill, through either; a. Re-use on site (in situ or for new applications) b. Re-use on other sites c. Salvage/reclaim for re-use d. Return to the supplier via a 'take-back' scheme e. Recovery and recycling using an approved waste management contractor f. Compost according to the defined *waste groups* (in line with the waste streams generated by the scope of the works). **AND** One of the following has been achieved: Where at least 50% by weight or by volume of non-hazardous construction waste generated by the project has been diverted from landfill. — 2 **OR** Where at least 85% by weight or by volume of non-hazardous construction waste generated by the project has been diverted from landfill. — 3	3	2.4	3	2.40	The contractor will be required to meet the Code requirements for minimising construction waste and diverting 85% by weight or volume from landfill.
Was 3	Composting	**Criteria** / **Credits** • Individual *home composting facilities*. — 1 **OR** • A local *communal or community composting service*, which the Local Authority runs or where there is a management plan in place. **OR** • A Local Authority *green/kitchen waste collection system* (this can include an automated waste collection system). All *facilities* must also: • be in a dedicated position • provide *inclusive access and usability* (Checklist IDP) • have a supporting *information leaflet* provided to each dwelling. **Default Cases** None	1	0.8	1	0.80	The L.B of Camden provide a weekly food waste collection scheme for blocks of flats providing the necessary bins, information leaflet and kitchen caddy. This credit is available to this development if there is sufficent space to install the required number of external, accessible (IDP Checklist) communal food waste bins as directed by the L.A. N.B: Any apartments with private gardens would require a composter, caddy and
		Subtotal		**6.4**		**6.40**	

C5697: 26 Netherhall Gardens
Pre-Assessment Worksheet

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Issue ID	Issue	Measurement Criteria	No of Credits	Potential % Points Available	Target Credits	Target Score (Weighting x Target Credits)	Notes
0.70%	**CATEGORY 6: Pollution**						
Pol 1	Global Warming Potential (GWP) of Insulants	**Criteria** / **Credits** Credits are awarded where all insulating materials in the elements of the dwelling listed below only use substances that have a GWP < 5 (in manufacture *AND* installation): / 1 • 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 **Default Cases** None	1	0.7	1	0.70	Specified products will only use substances that have a GWP<5 (in manufacture AND installation). Relevant specifications stating the above will be provided by the manufacturers
Pol 2	Nitrous Oxides (NOx) emissions	**Criteria** **Dry NO_x Level (mg/kWh)** / **Boiler Class (BS EN 297: 1994)** / **Credits** ≤ 100 / 4 / 1 ≤ 70 / 5 / 2 ≤ 40 / – / 3 **Default Cases** Where all space heating and hot water energy requirements are fully met by systems which do not produce NO_x emissions. / 3	3	2.1	0	0.00	Credit is not targeted.
		Subtotal		**2.8**		**0.70**	

C5697: 26 Netherhall Gardens
Pre-Assessment Worksheet

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Issue ID	Issue	Measurement Criteria	No of Credits	Potential % Points Available	Target Credits	Target Score (Weighting x Target Credits)	Notes
1.17%	**CATEGORY 7: Health & Well-being**						
Hea 1	Daylighting	**Criteria** / **Credits** Kitchens must achieve a minimum *Average Daylight Factor* of at least 2% — 1 All living rooms, dining rooms and studies (including any room designated as a home office under Ene 9 – Home Office) must achieve a minimum Average Daylight Factor of at least 1.5% — 1 80% of the *working plane* in each kitchen, living room, dining room and study (including any room designated as a home office under Ene 9 – Home Office) must receive direct light from the sky — 1 **Default Cases** None	3	3.5	2	2.33	This is an assumption at this stage of the project.
Hea 2	Sound Insulation	**Criteria** / **Credits** Where: • airborne sound insulation values are at least 3dB higher — 1 • impact sound insulation values are at least 3dB lower **OR** • airborne sound insulation values are at least 5dB higher — 3 • impact sound insulation values are at least 5dB lower **OR** • airborne sound insulation values are at least 8dB higher — 4 • impact sound insulation values are at least 8dB lower than 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 as *Robust Details* by Robust Details Limited (RDL) and found to achieve the performance standards stated above. All relevant dwellings must be registered with RDL. **Default cases** Detached dwellings — 4 Attached dwellings where separating walls or floors occur only between non-habitable rooms — 3	4	4.7	1	1.17	It is assumed that sound testing will be undertaken by a SQ acoustician and that sound test results between will achieve +/-3dB over Building Regulation requirements. It is also assumed that any tests that fail to meet the assumed target will undergo remedial work and retesting until the required level has been achieved. N.B: Being able to perform sound testing may require access to the adjoining property.
Hea 3	Private Space	**Criteria** / **Credits** Where *outdoor space* (private or semi-private) has been provided that is: — 1 • Of a *minimum size* that allows all occupants to use the space. • Provided with *inclusive access and usability* (Checklist IDP). • *Accessible only to occupants of designated dwellings.* **Default Cases** None	1	1.2	1	1.17	It is assumed from the drawings currently available that all units have access to a private open space of a sufficient size. Minimum requiremetns for private open space: 2 Bed - 3 sq m 3 Bed - 4.5 sq m
Hea 4	Lifetime Homes	**Criteria** / **Credits** / **Mandatory Levels** Where all principles of *Lifetime Homes*, applicable to the dwelling being assessed, have been complied with. — 4 — Level 6 **OR** Where an exemption from Lifetime Homes criteria 2 and/or 3 is applied to selected pathways subject to a steeply sloping plot gradient, but all other principles of Lifetime Homes, applicable to the dwelling being assessed, have been complied with. — 3 **Default Cases** None	4	4.7	4	4.67	It is assumed that all 16 points within the Lifetime Homes Checklist will be achieved.
		Subtotal		**14.0**		**9.33**	

C5697: 26 Netherhall Gardens
Pre-Assessment Worksheet

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Issue ID	Issue	Measurement Criteria	No of Credits	Potential % Points Available	Target Credits	Target Score (Weighting x Target Credits)	Notes
1.11%	**CATEGORY 8: Management**						
Man 1	Home User Guide	**Criteria** / **Credits** Provision of a *Home User Guide*, compiled in accordance with Checklist Man 1, Part 1, together with confirmation that the guide is available in *alternative formats*. — 2 Where the guide includes additional information relating to the site and its surroundings and is compiled in accordance with Checklist Man 1, Part 2. — 1 **Default Cases** None	3	3.3	3	3.33	Home user guide to be provided.
Man 2	Considerate Constructors Scheme	**Criteria** / **Credits** Where there is a commitment to meet *best practice* under a nationally or locally recognised certification scheme such as the *Considerate Constructors Scheme* — 1 Where there is a commitment to go *significantly beyond best practice* under a nationally or locally recognised certification scheme such as the Considerate Constructors Scheme — 2 **Default Cases** None	2	2.2	2	2.22	The contractor will be required to go significantly beyond best practice under the Considerate Contractors scheme with the development being registered pre-start on site.
Man 3	Construction Site Impacts	**Criteria** / **Credits** Where there are procedures that cover two or more of the following items: — 1 Monitor, report and set targets for CO_2 production or energy use arising from site activities Monitor and report CO_2 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 **OR** Where there are procedures that cover four or more of the items listed above. — 2 **Default Cases** None	2	2.2	2	2.22	The contractor shall be required to meet this credit by achieving 4 of the 6 options on offer.
Man 4	Security	**Criteria** / **Credits** 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. — 2 **AND** *Section 2 – Physical Security from 'Secured by Design – New Homes'* is complied with (*Secured by Design* certification is not required). **Default Cases** None	2	2.2	2	2.22	It is assumed that advice will be sought from the local ALO/CPDA officer and that the scheme will achieve Section 2 of Secured by Design - New Homes as a minimum.
		Subtotal		**10.0**		**10.00**	

C5697: 26 Netherhall Gardens
Pre-Assessment Worksheet

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Issue ID	Issue	Measurement Criteria	No of Credits	Potential % Points Available	Target Credits	Target Score (Weighting x Target Credits)	Notes
1.33%	**CATEGORY 9 - ECOLOGY**						
Eco 1	Ecological Vaule of Site	**Criteria** / **Credits** Where the *development site* is confirmed as land of inherently *low ecological value* — 1 **EITHER** By meeting the criteria for low ecological value (using Checklist Eco 1 – Land of Low Ecological Value under Checklists and Tables below) **OR** By being confirmed by a *suitably qualified ecologist* **OR** Where an independent ecological report of the site, prepared by a suitably qualified ecologist, confirms that the *construction zone* is of low or insignificant ecological value **AND** Any land of ecological value outside the construction zone but within the development site will remain undisturbed by the construction works. **Default Cases** None	1	1.3	1	1.33	it is assumed that the existing site would be deemed to be of low ecological value, an ecological report from a SQE will be required in order to confirm.
Eco 2	Ecological Enhancement	**Criteria** / **Credits** Where a *suitably qualified ecologist* has been appointed to recommend appropriate ecological features that will positively enhance the ecology of the site. — 1 **AND** Where the developer adopts all key *recommendations* and 30% of additional recommendations. **Default Cases** None	1	1.3	1	1.33	It is assumed that an ecologist will be apointed in order to indentify Key & Additional recommendations to enhance the ecology of the site.
Eco 3	Protection of Ecological Features	**Criteria** / **Credits** Where all existing features of ecological value on the *development site* potentially affected by the works are maintained and adequately protected during site clearance, preparation and construction works. — 1 **Default Cases** The credit can be awarded by default where the site has been classified as having *low ecological value* in accordance with Section 1 of Checklist Eco 1, *Ecological features* of the site, AND no features of ecological value have been identified. If a *suitably qualified ecologist* has confirmed a feature can be removed because of its insignificant ecological value or where an arboriculturalist has confirmed a feature can be removed owing to poor health/condition (e.g. diseased trees which require felling for health and safety and/or conservation reasons), the credit can be achieved provided all other features are adequately protected in accordance with the ecologist's recommendations.	1	1.3	1	1.33	One credit is awarded by default if the site has been classified as having low ecological value. If there are any items of value on site they will need to be adequately protected. An ecology report is required in order to confirm.
Eco 4	Change in Ecological Value of Site	**Criteria** / **Credits** The ecological value before and after development is measured, and the overall change in species per hectare is: • Minor negative change: between –9 and less than or equal to –3 — 1 • Neutral: greater than –3 and less than or equal to +3 — 2 • Minor enhancement: greater than 3 and less than or equal to 9 — 3 • Major enhancement: greater than +9 — 4 **Default Cases** None	4	5.3	3	4.00	It is assumed that a minimum of two credits can be awarded for neutral change of the site's ecological value. Calculations from a SQE are required in order to confirm.
Eco 5	Building Footprint	**Criteria** / **Credits** For houses, where the *net internal floor area*: *net internal ground floor area* ratio is greater than or equal to 2.5:1 — 1 **OR** For blocks of flats, where the net internal floor area: net internal ground floor area ratio is greater than or equal to 3:1 **OR** For a combination of houses and flats, the ratio of total net internal floor area: total net internal ground floor area of all houses and flats (i.e. the site-wide footprint to floor area ratio) is greater than the area weighted average of the two target ratios above (see Calculation Procedures) For houses, where the net internal floor area: net internal ground floor area ratio is greater than or equal to 3:1 — 2 **OR** For blocks of flats, where the net internal floor area: net internal ground floor area ratio is greater than or equal to 4:1 **OR** For a combination of houses and flats, the ratio of total net internal floor area: total net internal ground floor area of all houses and flats (i.e. the site-wide footprint to floor area ratio) is greater than the area weighted average of the two target ratios above (see Calculation Procedures) **Default Cases** None	2	2.7	1	1.33	This development will achieve a NIGFA:NIFA in excess of 3:1, achieving one credit.
		Subtotal		**12.0**		**9.33**	
CODE TOTAL SCORE				**100.0**		**68.77**	

TER Score	**11.7**	**6.69**
Interal Water Consumption Score	**7.5**	**6.00**
Other Points Scored	**80.8**	**56.08**