



Initial EcoHomes (2006)

**Design Stage Pre-Assessment of
203-209 North Gower Street, London**

Pre Assessment Report

18th July 2006



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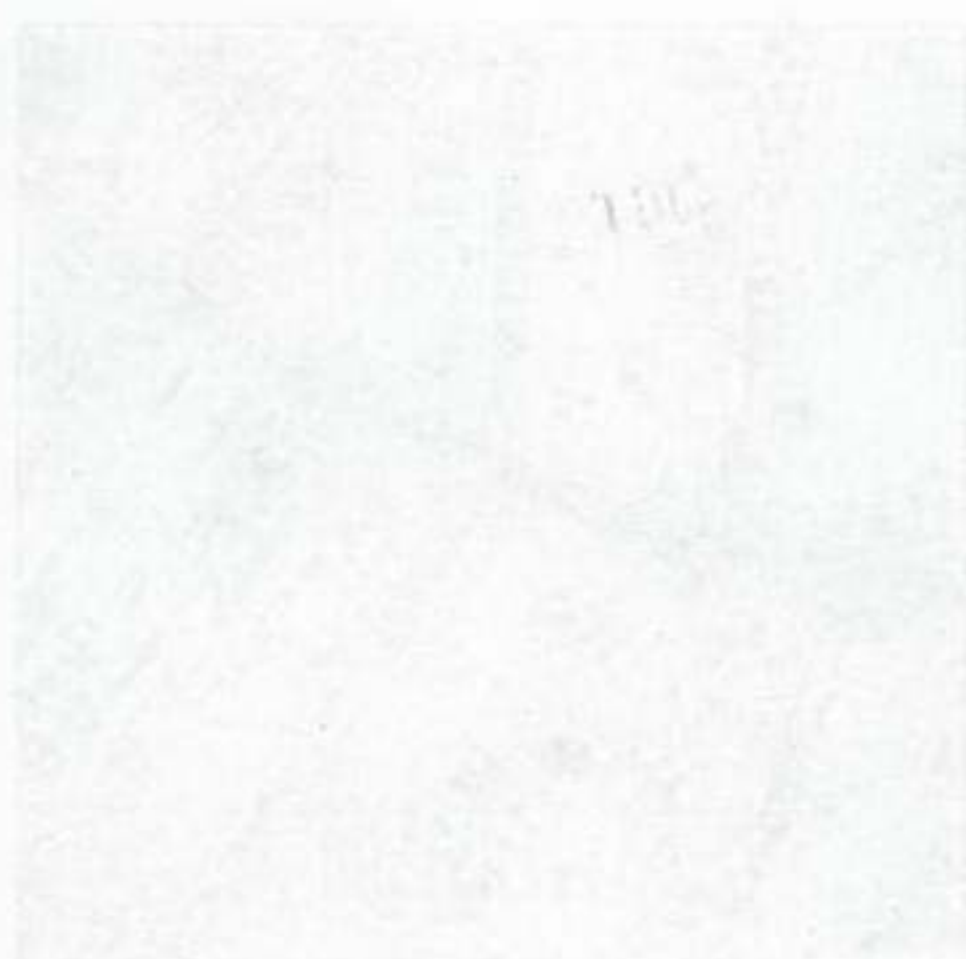
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1.0 Introduction

In order to demonstrate the developer's desire to create a sustainable development, and as part of the design stage planning submission, an EcoHomes pre-assessment has been carried out to inform the initial designs of 203-209 North Gower Street, working with BB Partnership. It is hoped that from this guidance and the associated design at this stage, a high EcoHomes (2006) rating can be achieved when a full EcoHomes assessment is undertaken on the development.

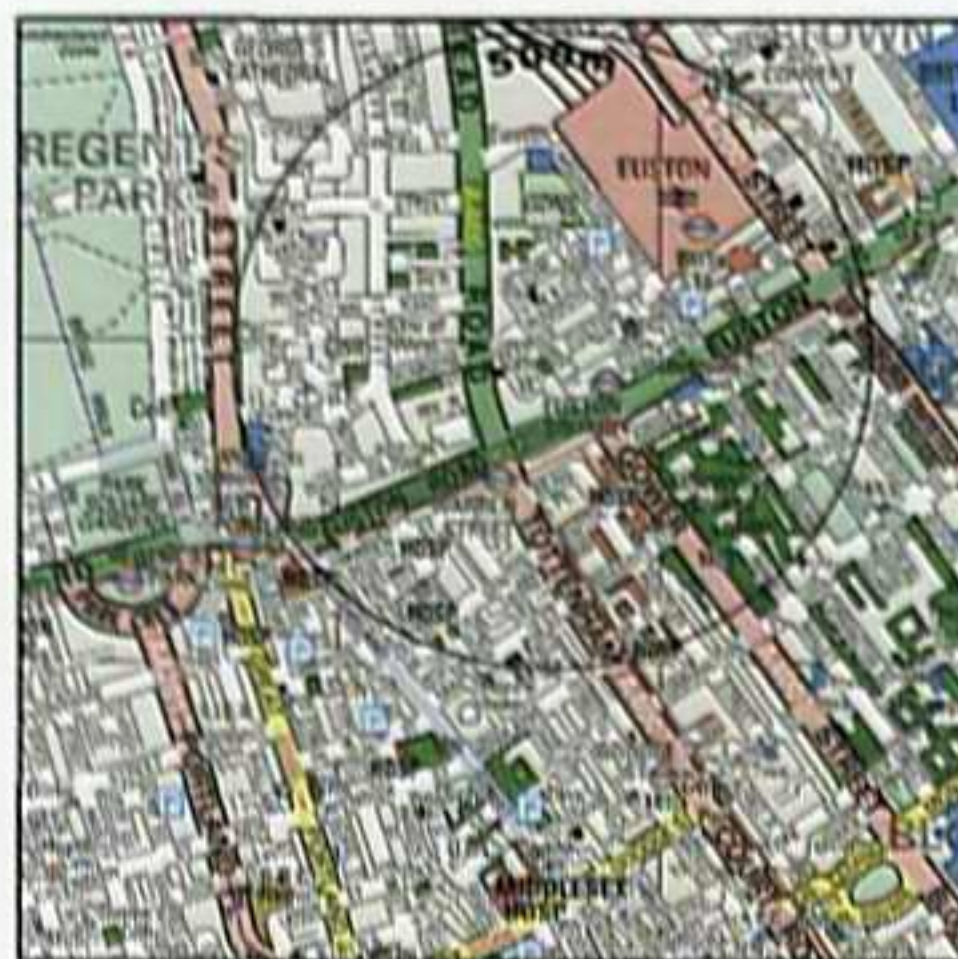
The development is located in central London, near Euston train station and consists of 12 flats; 3 one bed, four 2 bed, 3 three bed, one studio flat and one maisonette. The development is a refurbishment, retaining the existing shell but redesigning the internal floors and roof area. The design team are looking to include renewable energy systems such as solar hot water collectors.

This development has been assessed under EcoHomes 2006. The target rating for this development is **'VERY GOOD'**.

2.0 Summary

Due to the location of the development and the current low ecological value of the site, the development starts with relatively good environmental credentials. With a further commitment by the design team to use as much of the existing building material in situ, as well as the use of renewable energy systems and water saving fittings among other credits, these credentials are enhanced further.

During the pre-assessment exercise, the assessor discussed all of the EcoHomes credit criteria with BB Partnership. A number of credits in each category have been targeted. The total credits identified as potential targets in this exercise were used to give a pre-assessment score which targets the **'VERY GOOD'** EcoHomes (2006) rating.



Some further suggestions at the end of this document provide an alternative route to **VERY GOOD** or an extended route to **EXCELLENT**.

The details in section 4.0 show how this can be achieved.

3.0 The EcoHomes Rating

3.1 Introduction

EcoHomes is a voluntary scheme that aims to quantify and reduce the environmental burden of buildings by rewarding designs and operational procedures that take positive steps to minimise their environmental impact.

Projects are assessed using a system of credits. These credits are grouped into the following categories (including the EcoHomes 2006 addition of a management category):

- Energy
- Transport
- Pollution
- Materials & Waste
- Water
- Land & Ecology
- Health & Wellbeing
- Management

The assessment process results in a report covering the above credit categories. The full assessment is submitted to the BRE for quality assurance checking and certification. Certificates are awarded depending on a rating scale and will result in a building being awarded a PASS, GOOD, VERY GOOD or EXCELLENT rating.

3.2 EcoHomes Scoring

In order for an EcoHomes score to give an appropriate balance across such a broad selection of issues, the BRE have developed a weighting system through consultation with a range of industry representatives. This weighting system provides a relative importance to each of the credit categories. The current weightings are as follows:

Category	Weighting for EcoHomes
Energy	22%
Transport	8%
Pollution	10%
Materials and Waste	14%
Water	10%
Land Use and Ecology	12%
Health and Well Being	14%
Management	10%

The number of environmental criteria within each of the categories varies and as a result, there are a different number of credits within each category. Due to the different number of credits within each category and the differing category weightings, the overall value of each individual credit (as a percentage of the total number of credits in the assessment) is different depending on the category.

In order to achieve credits, information must be submitted to the assessor who will then award credits based on the current EcoHomes compliance criteria. The EcoHomes weightings are then applied to the sum total for each credit category to achieve an overall score. In the case of a pre-assessment, this is an informal process; for the full assessment, this information needs to be provided in full as confirmation of commitment to achieve each credit. This score is then used to identify the overall EcoHomes rating using the following ranges:

Rating	EcoHomes Score
Pass	36 – 47
Good	48 – 57
Very Good	58 – 69
Excellent	70 - 100

Once the final assessment has been carried out, based on information submitted to the assessor, a report is written which describes which credits have been awarded. This report then goes to the BREEAM team at the BRE for QA procedures. If the QA is passed then a certificate is issued.

4.0 EcoHomes Report

4.1 Credit Summary

The following table gives a summary of credits identified (before weighting):

		Available	Route to 'Very Good'
Energy			
ENE 1	Carbon Dioxide Emissions	15	7
ENE 2	Building Fabric U Values	2	0
ENE 3	Drying Space	1	1
ENE 4	Eco-labelled Goods	2	2
ENE 5	Internal Lighting Efficiency	2	1
ENE 6	External Lighting Efficiency	2	2
		<hr/> 24	<hr/> 13
Transport			
TRA 1	Good Local Transport	2	2
TRA 2	Cycle Storage	2	2
TRA 3	Local Amenities	3	3
TRA 4	Home Office	1	1
		<hr/> 8	<hr/> 8
Pollution			
POL 1	Insulant GWP (and ODP)	1	1
POL 2	NOx Emissions	3	3
POL 3	Reduction of Surface Run-Off	2	0
POL 4	Zero Emission Energy Source	3	2
POL 5	Flood Risk	2	2
		<hr/> 11	<hr/> 8
Materials and Waste			
MAT 1	Environmental Impact of Materials	16	13
MAT 2	Basic Elements, Responsible Sourcing	6	4
MAT 3	Finishing Elements, Responsible Sourcing	3	2
MAT 4	Recycling Facilities	6	6
		<hr/> 31	<hr/> 25
Water			
WAT 1	Internal Water Consumption	5	3
WAT 2	External Water Recycling	1	0
		<hr/> 6	<hr/> 3
Land Use and Ecology			
ECO 1	Ecological Values of Site	1	1
ECO 2	Ecological Enhancement	1	0
ECO 3	Protection of Ecological Features	1	1
ECO 4	Change of Ecological Value of Site	4	2
ECO 5	Building Footprint	2	2
		<hr/> 9	<hr/> 6
Health and Well Being			
HEA 1	Daylighting in Room Spaces	3	2
HEA 2	Sound Insulation in Room Spaces	4	1
HEA 3	Private Space	1	0
		<hr/> 8	<hr/> 3
Management			
MAN 1	Home User Guide	3	3
MAN 2	Considerate Contractors	2	1
MAN 3	Construction Site Impacts	3	0
MAN 4	Security	2	2
		<hr/> 10	<hr/> 6
Total credits		<hr/> 107	<hr/> 72

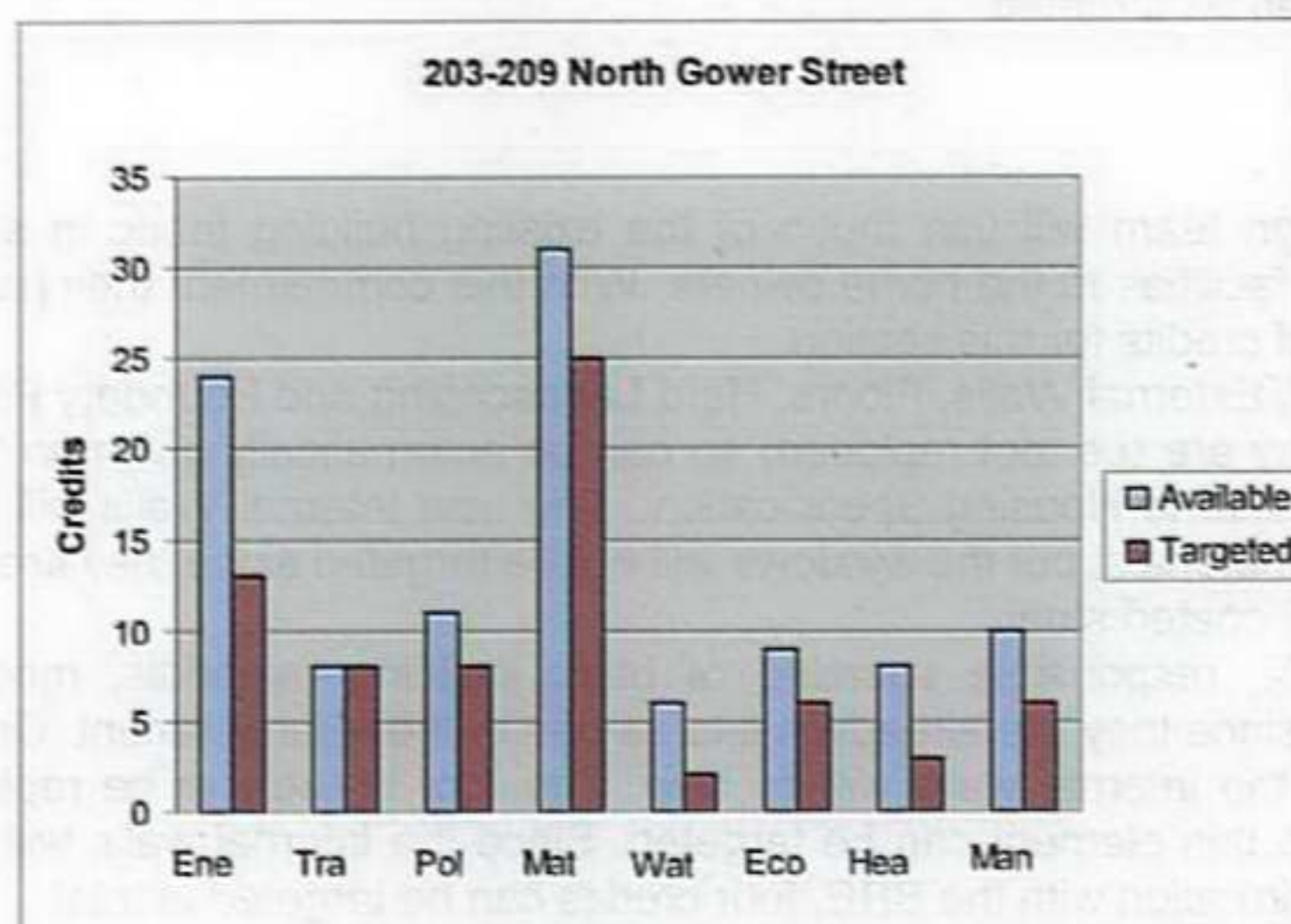
These credit totals are translated into scores and a rating in Section 4.2

4.2 Initial EcoHomes Results

The bar chart that follows shows where credits are in principle awarded against those that are available for each credit category. The total credits for each category are applied to the environmental weighting to achieve an overall score. This score is then compared against the ranges mentioned earlier to achieve an EcoHomes rating.

A total of 72 credits have been identified as being available. **This in turn equates to an EcoHomes score of 62.7%.** This score gives a good margin of error over the **'VERY GOOD'** rating lower limit of 58%.

To provide security against score reduction during a formal assessment or the BRE's QA processes, it is recommended that the final credits to be targeted should be discussed at the beginning of the full assessment.



4.3 Key Features of the Pre-assessment

Energy

- Since the development is being built to Building Regulations 2006, and there is a commitment to energy efficiency measures and using renewable energy systems, it is hoped the development will have a lower carbon footprint than standard. The design team is aiming to achieve a Dwelling Emission Rate (DER) of less than 24kg CO₂/m²/yr.
- The design team is committed to achieving an average Heat Loss Parameter in line with current building regulations. Since there needs to be an improvement over building regulations for ENE2, at this stage the Building Fabric credit is not targeted.
- The design team is also committed to providing adequate drying space in all dwellings (probably over each bath), providing efficient white goods, 50% internal energy efficient light fittings and fully efficient external light fittings.

Transport

- Due to its urban location, close to Euston train and tube station and local amenities, the development should achieve full credits in this category (see map in Summary above).
- The site is within 500m of Euston train/tube station and there are a number of bus stops nearby. Full credits can be awarded for TRA1.
- There are also good local amenities within 500m and 1km, by good pedestrian routes, and it is likely that there is a postbox and shop within 500m, so all credits are targeted for TRA3.

- There is a commitment by the design team for provision of no less than 14 secure cycle points in a cycle store, and facilities for a home office in either the bedroom or living room in the case of the single bedroom flats, and in one of the other bedrooms in the case of the two and three bedroom dwellings.

Pollution

- Insulation with GWP (Global Warming Potential) of less than five and ODP (Ozone Depleting Potential) credits are targeted.
- In the Pollution category, the NOx emissions section (POL2) is targeted. Provided the gas condensing boilers used in the developments will be of a class above 5, then three credits can be awarded.
- A renewable energy feasibility study will be carried out and client is obliged to provide at least 10% of the total energy demands by renewable energy sources as part of the Mayor's Energy Strategy. Two credits are therefore targeted.
- Since the development is in a low flood risk area, two further credits in the remaining section can be targeted.

Materials

- The design team will use much of the existing building fabric in situ and also provide recycling facilities to the home owners. With this commitment they hope to achieve a high number of credits for this section.
- The Roof, External Walls, Floors, Hard Landscaping and Boundary Protection are all to be left as they are (i.e. not replaced) so can be automatically given an 'A' rating in the BRE 'Green Guide to Housing Specification'. The new Internal Walls will be constructed from 'A' rated materials, but the windows will not be targeted since they are likely to be made up of powder coated steel.
- For MAT2, responsible sourcing of basic building materials, most elements will not included since they are already in situ as part of the refurbishment. Only two elements, the roof and the internal walls will be new. The roof is likely to be replaced with 80% FSC timber, so this element can be targeted. Since the internal walls will not be targeted and after confirmation with the BRE, four credits can be targeted in total.
- For MAT3, similarly the existing staircase will be used with no replaced handrails etc. The external and internal doors, skirting and panelling will all be at least 80% timber which will be from FSC sustainable sources. The windows and facias will likely be constructed from powder coated metals which are unlikely to be from a responsible source. Therefore, two out of three credits can be targeted. N.B. If staircase handrails, balustrades etc were to be replaced or added, these would need to be from FSC sourced timber in order to still target two credits.
- Since there is a local recycling collection service and three internal storage bins of adequate size for recycling will be provided e.g. under the sink in every dwelling, all six credits will be targeted here.

Water

- With water fittings such as 4/2l flush toilets, aerating taps, a medium flow shower (with a flow rate of between 9 and 12 litres), a standard bath, kitchen sink assuming a dishwasher is provided, and a best practice dishwasher and washing machine (also provided), this equates to water consumption of 40.8l/m³/bedspace/year and therefore 3 of the 5 credits can be awarded. N.B. Even if a dishwasher is not provided by the design team/client, but plumbing is provided (and it can only be assumed a typical practice dishwasher will be installed), three credits can still be targeted.
- Since the rainwater will not be collected for external use, this credit will not be targeted.

Land Use and Ecology

- Since the development is primarily a refurbishment on an existing site with no ecological features, the first credit can be targeted. Since there are no ecological features to be protected, the ECO3 credit is also available.
- The land use of the development will change little, since the majority of the work will be carried out within the building. It is therefore assumed that there will be no change in ecological species and so two credits can be targeted for ECO4.
- It is assumed that the building floor area to footprint ratio should exceed 3.5:1 with four floors and a basement.

Health and Well Being

- Full daylighting credits will be targeted for the kitchen, living/dining rooms and studies, however, due to the high rise nature of the area it is unlikely that there will be a view of the sky from each of these rooms. Therefore two of three credits are available.
- Minimum sound insulation tests will be carried out on separating walls for each building type, with a commitment to achieving airborne sound insulation levels and impact sound insulation levels as set out in Building Regulations 2003 standards, in order to achieve the first credit for HEA2.

Management

- A Home User Guide will be produced, providing information on the operation and environmental performance of each dwelling, along with information about the site and surroundings to target all three credits in this section.
- The design team is committed to developing the site in an environmentally and socially responsible manner, and will ask for a commitment from the contractor to comply and receive formal certification from the Considerate Constructor Scheme.
- Due to the development's urban location adequate security to recognized standards will be provided to achieve the first security credit in this section. There is also a commitment to achieving a Secure by Design Award.

4.4 Further Consideration

The beauty of the EcoHomes assessment is there is always some flexibility in achieving the desired rating. Should it not be possible to target all the credits chosen above, or should the client wish to exceed the above results, it is recommended to also look at achieving further credits in the following categories:

- Energy. Further commitment to reducing CO₂ emissions and improve the building fabric would allow more credits to be targeted in this category. This may be possible already; a clearer picture will emerge when further detailed assessment has been made of the development.
- Pollution. Although the development scores well in the Pollution category, there is still credit sections such as 'Reduction of Surface Run-Off' either by drainage attenuation from the roof, or introduction of porous paving for example for all hard surfaces. It may also be possible to target 15% of the site's energy demand from renewable energy sources.
- Health and Wellbeing. Further sound insulation tests could be carried out to achieve higher than standard airborne, and lower than standard impact, sound insulation.
- Management. The design team may like to consider further assessment of site impacts during construction; for example in CO₂ and energy use, water consumption, also dust pollution and responsible use of timber used on site.

If these further measures were implemented, a target rating of 'Excellent' could be achieved. These issues can be discussed at the onset of the full EcoHomes assessment.