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FULCRUM

EcoHomes

ECOHOMES INITIAL PRE-ASSESSMENT

26-30 CUBITT ST

Rev A
Date 3rd November 2004

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1. INTRODUCTION TO ECOHOMES

Ecohomes is an environmental rating for homes. It rewards those developers who improve environmental performance through good design.

The Ecohomes scheme considers the broad environmental concerns of climate change, resource use and impact on wildlife, and balances these against the needs for a high quality, safe and healthy internal environment.

The issues assessed are grouped into seven categories:

- Energy (operational energy and CO_2)
- Transport (location issues relating to transport)
- Pollution (air and water pollution – excluding CO_2)
- Materials (environmental implication of materials selection, recyclable materials)
- Water (consumption issues)
- Ecology and land use (ecological value of the site, green-field and brown-field issues)
- Health and well-being (internal and external issues relating to health and comfort)

Credits are awarded according to strict criteria for specific performance levels under each category. The number of credits available in each category does not necessarily reflect the relative importance of the issues covered, as the final rating is calculated after a series of weighting factors have been applied.

The weighting system for Ecohomes was developed from research carried out by the BRE in 1997/8. A wide range of interest groups were asked to rate the relative importance of the sustainability issues covered by the scheme. The responses from these groups were combined to form the weighting factors for each category.

Once credits for each category are calculated and the weightings applied, the final rating is established. This takes the form of:

Pass	Most developments should be able to achieve this with minor design/specification changes at minimal cost.
Good	The development has been able to demonstrate good practice in most areas.
Very good	Developments which push forward the boundaries of environmental performance will achieve this.
Excellent	Developments which demonstrate exemplary environmental performance across the full rage of issues.

2. BACKGROUND TO ASSESSMENT

The proposed development at 26-31 Cubic St consists of 14 units, spread over 5 floors. These comprise 8 2-bedroom units and 6 3-bedroom units. The site currently a derelict industrial unit in the Kings Cross area of London.

3. EXECUTIVE SUMMARY

This assessment is intended as an estimate for the final rating that would be achieved were this development to be submitted to a full Ecohomes assessment. At this early stage in the design process is not possible to allocate many of the credits with any degree of certainty, therefore most of the assessment is based on conservative estimates for the likely scores.

The conclusion of this report is that the development falls well within the credit requirements to score an Ecohomes rating of GOOD, and falls just short of achieving a VERY GOOD.

4. ANALYSIS OF CREDITS

Ene1 CARBON DIOXIDE PRODUCTION DUE TO ENERGY CONSUMPTION

Aim

To minimise emissions of CO_2 to the atmosphere arising from the operation of a home and its services.

Credit Requirement

Credits are awarded for CO_2 emissions as follows:

- 1 credit for less than or equal to 60 kg/m²/yr;
- 2 credit for less than or equal to 50 kg/m²/yr;
- 3 credits for less than or equal to 45 kg/m²/yr;
- 4 credits for less than or equal to 35 kg/m²/yr;
- 5 credits for less than or equal to 30 kg/m²/yr;
- 6 credits for less than or equal to 27 kg/m²/yr;
- 7 credits for less than or equal to 25 kg/m²/yr;
- 8 credits for less than or equal to 20 kg/m²/yr
- 9 credits for less than or equal to 10 kg/m²/yr;
- 10 credits for zero or less kg/m²/yr.

Note: As the above credits refer to CO_2 emissions, dwellings using gas will inherently score better than those using other fossil fuels. (As the CO_2 emissions from gas are the lowest of all fossil fuels)

Assessment

All units are proposed to have heating and hot water supplies by individual gas condensing boilers. Based on these, combined with the reasonably high insulation standards proposed (see Ene2 below), CO2 emissions have been estimated as below 30 kg/m²/yr and 5 credits have been awarded.

Credits Awarded

5

Ene2 BUILDING ENVELOPE PERFORMANCE

Aim

To improve the efficiency of dwellings over their whole life, or to encourage refurbished dwellings to improve their insulation standards.

Credit Requirements (for developments built under part L of the 2002 Building Regulations)

- 1 credit for 3% improvement on the Building Regulation requirements;
- 2 credits for 6% improvement on the Building Regulation requirements;
- 3 credits for 9% improvement on the Building Regulation requirements;
- 4 credits for 12% improvement on the Building Regulation requirements;
- 5 credits for 15% improvement on the Building Regulation requirements;

Assessment

It is proposed that insulation standards will exceed those required by the building regulations. As no calculations are yet available, a conservative estimate has been made at a 9% improvement over Part L1 2002, and 3 credits have been awarded.

Credits Awarded

3

Ene3 PROVISION OF DRYING SPACE

Aim

To minimise the amount of energy used to dry clothes.

Credit Requirement

- 1 credit for providing space and posts/ footings/ fixings for drying clothes in a secure environment for each unit on the site. This may be external or internal.

A minimum of 6m line for 3+ bed units OR 3m for 1 or 2 bed units is required.

Assessment

Those units on the ground floor will have private patio gardens where appropriate lines and fixings will be supplied. Washing lines may also be possible on private roof terraces. Where this is not possible, suitable lines will be provided over baths.
In all cases at least 6m of line for 3-bedroom units and 4m of line for 2-bedroom units will be provided.

Credits Awarded

1

Ene4 ECOLABELLED GOODS

Aim

To encourage the provision or purchase of energy efficient white goods, thus reducing the CO_2 emissions from the dwelling.

Credit requirement

- 1 credit where all fridge's, freezers and fridge/freezers have a rating of A under the EC Energy Efficiency Labelling scheme;
- 1 credit where all washing machines and any dishwashers supplied, have a rating of A and washer dryers/ tumble dryers have a rating of C or higher under the EC Energy Efficiency labelling scheme;

1 credit if no white goods are provided, but information on purchasing energy efficient white goods is provided.

Assessment

All units are to be provided with fridge/freezers, washing machines and dishwashers. These will all be A rated appliances.

Credits Awarded

2

Ene5 EXTERNAL LIGHTING

Aim

The purpose of this credit is to encourage the provision of energy efficient external lighting.

Credit Requirements

- 1 credit where outbuildings/ covered space/ front door (i.e. garages, carports etc) and all feature lighting (i.e. garden, patio lighting etc.) is specifically designed to accommodate only Compact Fluorescent Lamps (CFL) luminaries or strip lights.
- 1 credit where security/ safety* light fittings are designed for energy efficiency and are adequately controlled such that:
  - all burglar security lights have a maximum wattage of 150W AND are fitted with movement detecting shut off devices (PIR) and day light cut-off devices.
  - all other security/ safety* lighting is specially designed to only accommodate

Compact Fluorescent Lamps (CFL) luminaries or strip lights AND be fitted with dawn to dusk sensors OR timers.

* For blocks of flats the lighting in the hallway and/ or any external security lighting will fit into this category.

Assessment

A commitment has been made to adhere to all the criteria for these credits when designing the external lighting for this development. This will include any internal communal lighting to hallways etc. Full credits have been assumed.

Credits Awarded

2

Tra1 PUBLIC TRANSPORT

Aim

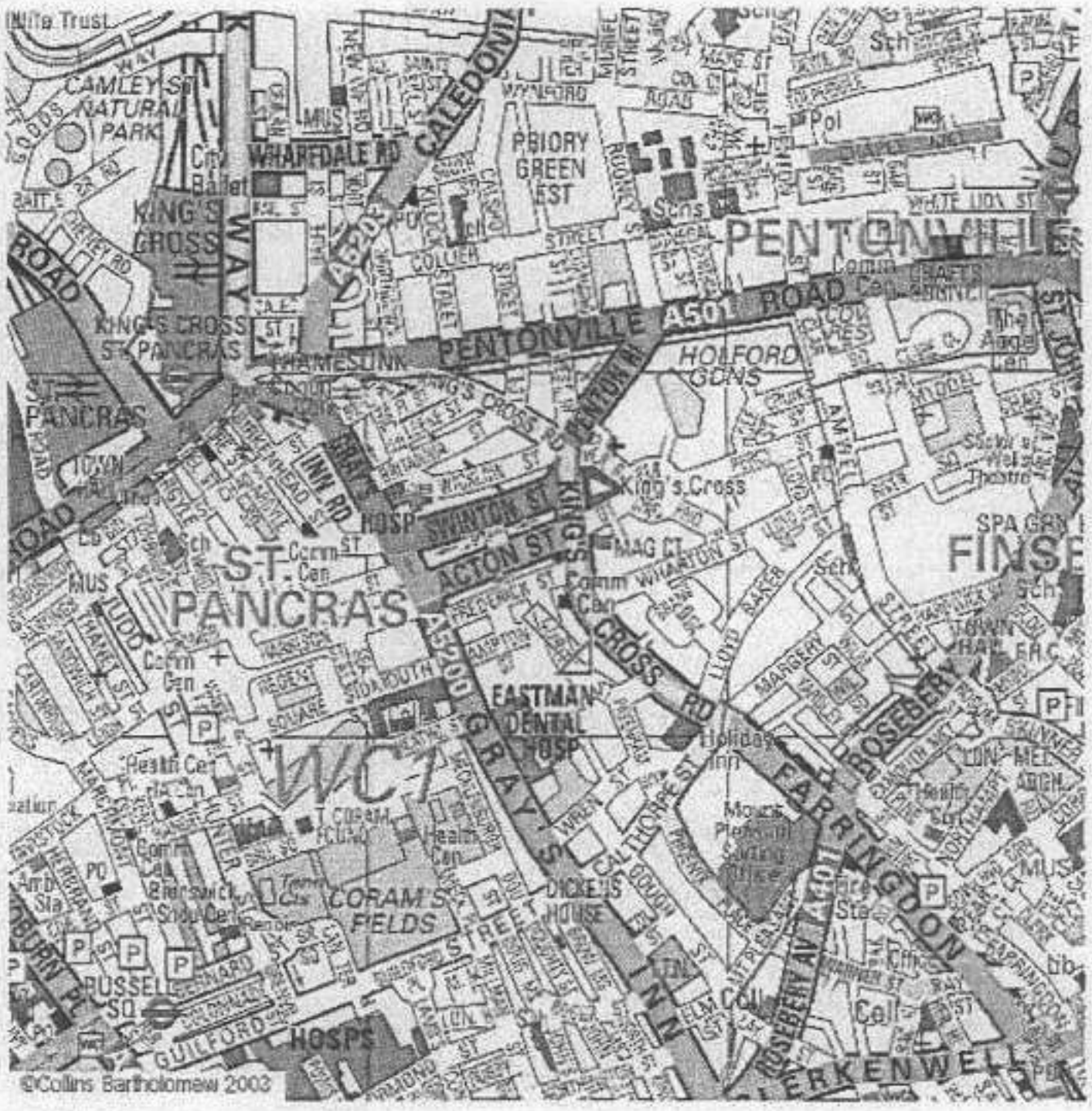
The purpose of the credit is to encourage developers to provide a choice of transport modes for residents, with the aim of reducing the level of car use.

Credit Requirements

- 1 credit for 80% of the development within 1000m (with a safe walking route) of a transport node which:
  - Provides at least an hourly service between 07.30 and 20.00 – Monday to Saturday.
  - The service should go to a local centre, or a town or city centre or to a major transport node.
- +1 credit if 80% of the development is within 500m of a transport node, fulfilling all the criteria above.

Assessment

The site is located in central London close to Kings Cross Rd. There are several bus routes passing very close by along Kings Cross Rd and Greys Inn Rd, and Kings Cross train station is within 1000m (see map below). Therefore full credits have been assumed.



Credits Awarded

2

Tra2 CYCLE STORAGE

Aim

To encourage the wider use of bicycles as transport, and thus reduce the need for short car journeys, by providing adequate and secure cycle storage facilities.

Credit Requirements

1 credit is available for the provision of adequate storage cycles for 50% of dwellings on the development.

2 credits for 95% of dwellings having adequate cycle storage.

Adequate storage is determined by the number of bedrooms within a dwelling:

- 1 and 2 bedroom flat/house – storage for one cycle;
- 3 bedroom flats/houses – storage for 2 cycles;
- 4 bedrooms and above – storage for 4 cycles

Storage must be secure and weather proof (roof + at least three walls).

Assessment

In order for 100% of dwellings to have sufficient cycle storage space for these credits a total of 20 spaces need to be provided. It is proposed that these are located in the basement area. This can be accessed by stairs or a service lift, and secure fixings will be installed to allow all occupants to leave their bicycle securely stored.

Credits Awarded

1

Tra3 LOCAL AMENITIES

Aim

To encourage developers to plan new housing developments that are close to, or include local shops and amenities. This will help to reduce the reliance local residents have on their cars.

Credit Requirements

80% of the development to be within walking distance (with safe crossing points of any major roads) of local amenities:

- 1 credit for proximity to a food shop and a post box within 500m
- 1 credit for proximity to 5 of the following:- post office, bank, chemist, school, medical centre, leisure centre, community centre, public house, children's play area, within 1km.
- 1 additional credit for providing safe pedestrian routes to the local amenities.

Assessment

The site is well placed for access to local amenities. Although the exact locations and distances to the nearest postbox etc will require clarification, it is felt that maximum credits will easily be achieved for this site (See map under Tra1 above).
Amenities within 1000m are thought to include: chemist, school, community centre, medical centre, public house and children's play area.

A convenience shop and cash point are known to exist within the Petrol Station on Kings Cross Rd, immediately behind the site. A survey of other amenities has not yet been completed, but a brief visit to the area would provide the information required.

Credits Awarded

Tra4 **HOME OFFICE**

Aim

To reduce the need to commute to work by providing residents with the necessary space and services to be able to work from home.

Credit Requirement

1 credit given for the provision of a space which allows the occupants to set up a home office in a quiet room.

Assessment

All units are thought to have sufficient space to allow a home office to be set up within a bedroom. Sufficient power and telephone points will be provided to facilitate this.

Credits Awarded

1

Pol1 **HCFC EMISSIONS**

Aim

The purpose of this credit is to reduce the amount of ozone depleting substances released into the atmosphere.

Credit Requirements

- 1 credit for the use of insulation with a zero ozone depletion potential in the roof (including loft access), walls – internal and external (including doors and window lintels) and the floors (including foundations).
- 1 credit for the use of insulation with a zero ozone depletion potential on the hot water cylinder, insulation pipes and other thermal store.

Assessment

A commitment has been made to ensure that all insulation materials used throughout the development will be HCFC free, and full credits have been assumed.

Credits Awarded

2

Pol2 **LOW NO_x EMITTING BOILERS**

Aim

To reduce the nitrous oxides emitted into the atmosphere.

Credit Requirements

All of the boilers used in the development must meet the following criteria.

- 1 credit for specifying all boilers with NO_x emissions of less than or equal to 150 mg/kWh
  – Class 3 (British Standard BS EN 297: 1994)

- 2 credits for specifying all boilers with NO_x emissions of less than or equal to 100 mg/kWh
  – Class 4 (British Standard BS EN 297: 1994)

- 3 credits for specifying all boilers with NO_x emissions of less than or equal to 70 mg/kWh
  – Class 5 (British Standard BS EN 297: 1994)

Assessment

All units will have heating and hot water supplied from individual gas condensing boilers. This will be specified to meet the NOx emissions standard of less than 70 NOx mg/kWh.

Credits Awarded

3

Pol3 REDUCTION OF SURFACE RUNOFF

Aim

To reduce and delay water runoff from hard surfaces of a housing development to public sewers and watercourses, thus reducing the risk of localised flooding, pollution and other environmental damage.

Credit requirements

Where sustainable drainage techniques are used to provide attenuation of water runoff by 50% at peak times to either natural watercourses and/or municipal drainage systems.

- 1 credit when this is applied to all hard surfaces
- 1 credit when this is applied to roofs

Assessment

No Sustainable Urban Drainage System (SUDS) has been proposed at present. It is possible that patio gardens and roof terraces could be supplied with water butts to store rainwater for watering plants, but no credits have been assumed at this time.

Credits Awarded

0

Mat1 TIMBER AND TIMBER PANEL PRODUCTS FOR THE BASIC BUILDING ELEMENTS

Aim

To encourage the use of timber from sustainably managed sources, or re-used timber.

Credit requirements (Basic building elements)

- 2 credits where 30% of timber in all dwellings is from FSC or recycled/reused or 50% is from a PEFC source and the remainder is from a temperate origin.
- 2 credits where 60% of timber in all dwellings is from FSC or recycled/reused or 50% is from a PEFC source and the remainder is from a non temperate origin.
- 4 credits where 60% of timber in all dwellings is from FSC or recycled/reused or 80% is from a PEFC source and the remainder is from a temperate origin.
- 4 credits where 75% of timber in all dwellings is from FSC or recycled/reused or 95% is from a PEFC source and the remainder is from a non temperate origin.

- 6 credits where 75% of timber in all dwellings is from FSC or recycled/reused or 95% is from a PEFC source and the remainder is from a temperate origin.

N.B.
FSC = Forest Stewardship Council (www.fsc-uk.info)
PEFC = Pan European Forest Certification (www.pefc.org)

Assessment

No commitment has yet been made to ensure a percentage of timber from certified sources, however it is still desired to source such timber wherever possible.
No credits have been assumed at this time.

Credits Awarded

0

Mat2 TIMBER AND TIMBER PRODUCTS FOR FINISHING ELEMENTS

Aim

To encourage the use of timber from a sustainably managed source, or reused timber.

Credit requirements (Finishing elements)

- 1 credits where 30% of timber in all dwellings is from FSC or recycled/reused or 50% is from a PEFC source and the remainder is from a temperate origin.

- 1 credits where 60% of timber in all dwellings is from FSC or recycled/reused or 50% is from a PEFC source and the remainder is from a non temperate origin.

- 2 credits where 60% of timber in all dwellings is from FSC or recycled/reused or 80% is from a PEFC source and the remainder is from a temperate origin.

- 2 credits where 75% of timber in all dwellings is from FSC or recycled/reused or 95% is from a PEFC source and the remainder is from a non temperate origin.

- 3 credits where 75% of timber in all dwellings is from FSC or recycled/reused or 95% is from a PEFC source and the remainder is from a temperate origin.

Assessment

No commitment has yet been made to ensure a percentage of timber from certified sources, however it is still desired to source such timber wherever possible.
No credits have been assumed at this time.

Credits Awarded

0

Mat3 RECYCLABLE MATERIALS

Aim

To encourage developers to provide home owners with the opportunity and facilities to recycle household waste.

Credit Requirements

2 Credits for the provision of either:

- Three internal storage bins with a minimum total capacity of 60 litres for storage of recyclable household waste. No individual bin must be smaller than 15 litres and all bins should be in a dedicated position.

  OR

- Three external bins with a total capacity of at least 180 litres (or LA collection scheme for recyclable material) for storage of recyclable household waste within 2m of the external door. No individual bin must be smaller than 40 litres and all bins must be in a dedicated position.

OR

6 credits for providing both internal and external storage of the following capacities:

- Three internal storage bins with a minimum total capacity of at least 30 litres. No individual bin must be smaller than 7 litres and all bins should be in a dedicated position.

  AND

- Three external bins with a total capacity of at least 180 litres (or LA collection scheme for recyclable material) for storage of recyclable household waste within 10m of the external door. No individual bin must be smaller than 40 litres and all bins must be in a dedicated position.

Assessment

A commitment has been made to provide both internal and external storage provision for recyclable materials. Internal storage is likely to be made in cupboards under sinks. The external storage provision is to be located with other domestic refuse in the basement area.

Credits Awarded

6

Mat4 ENVIRONMENTAL IMPACT OF MATERIALS – GREEN GUIDE FOR HOMES

Aim

To encourage the use of materials that have less impact on the environment, taking account of the full life cycle.

Credit requirements

Credits are achieved by obtaining an A rating from the Green Guide to Housing Specification, for 80% by area of the element, for each of the following elements:

- Roof (3 credits)
- External walls (3 credits)
- Internal walls (3 credits)
- Floors – upper and ground floor (3 credits)
- Windows (2 credits)
- Hard landscaping (1 credit)
- Fencing (1 credit)

This must cover all of the dwellings in the development to achieve the credits.

Assessment

No information is yet available on which to base this credit. Once information is received as to the nearest construction type for each element in the Green Guide to Housing Specification is received then some credits may be awarded.

Roof: (0/3)

External Walls: (0/3)

Internal Walls: (0/3)

Floors: (0/3)

Windows: (0/2)

Hard Landscaping: (0/1)

Fencing: (0/1)

Credits Awarded

0

Wat1 INTERNAL WATER CONSUMPTION

Aim

To reduce consumption of water in the home.

Credit requirements

Credits are awarded against a scale of water consumption per bed space as follows:

- 1 credit where water consumption is less then 50 m^3 per bed space pa
- 2 credits where water consumption is less than or equal to 45 m^3 per bed space pa
- 3 credits where water consumption is less than or equal to 40 m^3 per bed space pa
- 4 credits where water consumption is less than or equal to 35 m^3 per bed space pa
- 5 credits where water consumption is less than or equal to 30 m^3 per bed space pa

Assessment

The following parameters were used to calculate the internal water consumption for this development:

- 6/4 dual flush WCs
- wash hand basins with flow regulators or spray taps
- a shower with a maximum flow rate <15 l/min
- A standard sized bath
- Best practice washing machine and dishwasher

These combine to calculate an annual water consumption of 46.8 m^3/bedspace/year, therefore 1 credit has been awarded.

Credits Awarded

1

Wat1 EXTERNAL WATER CONSUMPTION

Aim

To encourage the recycling of rainwater, and reduce the amount of water taken from the mains for use in landscape/garden watering.

Credit requirements

- 1 credit for specifying a system that will collect rainwater for the use of watering gardens and landscaped areas, e.g. water butts, central rainwater collection systems etc.

Assessment

No rainwater collection facility for irrigation of the landscaped areas has been included in the design, so no credit has been awarded at this stage.

Credits Awarded

0

Eco1 ECOLOGICAL VALUE OF SITE

Aim

The purpose of this credit is to encourage the use of land which is of low ecological value, the enhancement of the ecological value of a site and the protection of existing features.

Credit Requirements

- 1 credit for minimising ecological damage by either:
  - building on land which meets defined criteria for low ecological value; or
  - where land is ecologically valuable, designing within recommendations following an audit by the AWTC (Association of Wildlife Trust Consultancies) or another qualified organisation recognised and audited by a recognised authority.

Assessment

The site footprint is currently covered by an industrial unit which will be demolished. There are no existing trees or ecological features within the site boundary and the site is estimated to be of very low ecological value, therefore this credit has been assumed.

Credits Awarded

1

Eco2 ECOLOGICAL ENHANCEMENT

Aim

To enhance the ecological value of the site

Credit requirements

- 1 credit for designing-in features for positive enhancement of the site ecology in accordance with advice from the AWTC.

Assessment

There is no plan to seek advice from an accredited ecological expert due to the size of the site and the minimal scope for landscaping, therefore this credit has not been awarded.

Credits Awarded

0

Eco3 PROTECTION OF ECOLOGICAL FEATURES

Aim

To protect existing ecological features from substantial damage during the clearing of the site and the completion of construction works.

Credit requirements

- 1 credit for the protection of existing features.

Assessment

As there are no ecological features present within the site, this credit will be awarded by default.

Credits Awarded

1

Eco4 CHANGE OF ECOLOGICAL VALUE OF SITE

Aim

The aim of this credit is to reward steps taken to minimise reductions in ecological value and to encourage an improvement.

Credit Requirements

- 1 credit for a change of ecological value of between –9 and –3 natural species hectares;
- 2 credit for a change of ecological value of between –3 and +3 natural species hectares;
- 3 credit for a change of ecological value of between +3 and +9 natural species hectares;
- 4 credit for a change of ecological value of greater than +9 natural species hectares.

Assessment

No ecological consultant has been appointed to assess this site, however, due to the very low existing ecological value of the site, it is felt that a neutral change will be achieved, and therefore 2 credits have been assumed.

Credits Awarded

2

Eco5 BUILDING FOOT PRINT

Aim

To promote the most efficient use of a building's footprint by ensuring land and material use is maximised for every dwelling on a development.

Credit Requirements

- 1 credit where 60% of the development's total floor area divided by the foot print of the building is greater than 2.5
- 2 credits where 80% of the development's total floor area divided by the foot print of the building is greater than 2.5

Assessment

Although this calculation has not yet been completed, the accommodation is being built over 5 storeys (LG, G, 1st, 2nd, 3rd) and therefore it is felt that the development will fall well within the criteria for maximum credits.

Credits Awarded

Hea1 DAYLIGHTING

Aim

To improve the quality of life in homes through good daylighting, and to reduce the need for energy to light a home.

Credit Requirements

- 1 credit for designing the kitchen to meet the daylighting criteria set out in British Standard BS 8206:part 2 (2%).
- 1 credit for designing all other habitable rooms to meet the daylighting criteria set out in British Standard BS 8206:part 2 (1.5%).
- 1 credit for kitchens, living rooms, dining rooms and studies to be designed to have a view of the sky according to criteria set out in British Standard BS 8206: Part 2.

Assessment

Many units have kitchens quite deep within the floor plans which is likely to preclude a high daylighting factor or a good view of the sky. Living rooms however are often provided with full height glazing or similar and are thought likely to achieve the 1.5% daylight factor required for one out of the possible three credits.

Credits Awarded

1

Hea2 SOUND INSULATION

Aim

To encourage the provision of improved soundproofing between party walls and floors to reduce the likelihood of nuisance.

Credit requirements

Credits are awarded for a commitment to carry out a programme of pre-completion testing based on a number of tests for every 10 houses or flats in a group pr sub-group AND for a commitment to achieve the performance standards in Approved Document E (2003 Edition)

- 1 credit for 2 tests* and meeting part E requirements
- 2 credits for 3 tests* and meeting part E requirements
- 3 credits for 3 tests* and airborne 3dB higher and impact 3dB lower than part E requirements
- 4 credits for 3 tests* and airborne 3dB higher and impact 3dB lower than part E requirements

* for every ten dwellings in a group or subgroup.

Assessment

A commitment has been stated to providing 3 tests for every ten dwellings in a group or subgroup and airborne 3dB higher and impact 3dB lower than part E requirements, therefore 3 credits have been assumed.

Credits Awarded

3

Hea3 PRIVATE SPACE

Aim

To improve the occupiers quality of life by providing a private outdoor space.

Credit Requirement

1 credit for the provision of outside space that is at least partially private.

Assessment

All units will have access to either a private patio garden, roof terrace or balcony. The whole development will also have access to a communal roof garden, therefore those units with only a small balcony will have this additional external space. Full credits have therefore been assumed.

Credits Awarded

1

5. RESULTS

The credits awarded are totalled for each category and then weighting factors applied.

	redits available	No. achieved	% achieved	Weighting factor	redits score
Energy	20	13	65.0		
Transport	8	8	100.0		
Subtotal	28	21	75.0	0.3	22.5
Pollution	7	5	71.4	0.15	10.7
Materials	31	6	19.4	0.15	2.9
Water	6	1	16.7	0.1	1.7
Land Use and Ecology	9	6	66.7	0.15	10.0
Health and Well being	8	5	62.5	0.15	9.4
					57.2

Excellent	70
Very Good	60
Good	48
Pass	36

The predicted score for this development is an Ecohomes rating of:

GOOD

The Assessor (for itself and as agent for its staff) and its staff shall not be liable whether in contract or in tort or otherwise for any loss or damage sustained as a result of using or relying on the information given in this report or the final certificate from BRE that is based n it.

5. 1 WEIGHTINGS SYSTEM

Due to the weighting system each individual credit has a variable effect on the final score. The following table shows the percentage value of each credit within each section:

	% value of each credit
Energy	1.07
Transport	1.07
Pollution	2.14
Materials	0.48
Water	1.67
Land Use and Ecology	1.67
Health and Well being	1.88

The table shows that the pollution credits are the most valuable – worth 2.14% of the final score each. The materials are worth just 0.48% each, but this is compensated by there being so many more of them – 31 available.