

## **Appendix A - Sustainable Development Framework**

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Produced by URS Corporation on behalf of the Masterplan Team.

## 1.0 Introduction

This guidance is to be read in conjunction with the Masterplan drawings and specification produced by Bennetts Associates. It takes into account Chapter 3 of Islington's Unitary Development Plan, the draft Supplementary Planning Guidance on Green Construction and the Greater London Assembly draft Energy Strategy.

Each submission for planning permission will be required to submit a Sustainability Assessment based on the template to be found on London Borough of Islington's website. The requirements set out below follow the structure of this document.

### 1.1 Summary of Benchmarks

The scheme is to be assessed under the EcoHomes 2003 rating scheme (1) with a target rating of Excellent as validated by a Post Construction Review carried out by a licensed EcoHomes assessor prior to handover. A preliminary Design & Procurement assessment carried out by a licensed assessor is required to be included with the submission of any planning applications, indicating that an Excellent rating will be achieved.

The following benchmarks as set out in best practice guidance from GPG 192 (2) shall be met by the scheme, validated by supporting calculations:

- Carbon Index for worst case apartment (as calculated for compliance with Part L1 of the Building Regulations 2000) - minimum of 8.0. Carbon index average across all apartments in a building to achieve 8.6.
- Fabric details and quality of construction shall be such as to ensure an air leakage rate of no greater than 3m<sup>3</sup>/h/m<sup>2</sup>. Compliance with the guidance in BR265 (3) shall be deemed to satisfy this requirement.

The following benchmarks are taken from the M4I Environmental Performance Indicators (5) and represent the upper value from the best quartile range.

- Total Carbon Dioxide emissions per unit gross floor area per annum, averaged over whole building (including common areas), including lighting, white goods, lifts, domestic hot water, heating, ventilation and air conditioning should be no greater than:
  - Residential use - 55kgCO<sub>2</sub>/m<sup>2</sup>/year.
  - Office use - 46kgCO<sub>2</sub>/m<sup>2</sup>/year.
  - Retail - 80kgCO<sub>2</sub>/m<sup>2</sup>/year.
  - Restaurants (including kitchen) - 320kgCO<sub>2</sub>/m<sup>2</sup>/year.
- Water consumption should be no greater than:
  - For apartments - 35m<sup>3</sup> per bed-space per year.
  - For offices - 4m<sup>3</sup> per person per year.
  - For retail - 4m<sup>3</sup> per person per year.
- Embodied energy of building materials as converted to CO<sub>2</sub> emissions per unit gross floor area - 360kgCO<sub>2</sub>/m<sup>2</sup>.
- Total construction waste generated during project duration per 100m<sup>2</sup> of gross floor area - maximum of 5m<sup>3</sup>/100m<sup>2</sup>.
- Contractor shall achieve a minimum score of 30 from the 2nd visit of the Considerate Constructor Scheme assessor (Note - Maximum score is 40, a score of 35 warrants a bronze award).

## 2.0 Environmental Criteria

### 2.1 Pollution

**Air:** The main source of air pollution will be boilers, if present. EcoHomes provides credits depending on where the rated NOx emissions falls within given ranges. No benchmark is provided here since there are large differences between what is achievable depending on boiler duty and whether condensing or conventional boilers are to be installed.

**Water:** Gulleys taking run-off from car parking areas shall be fitted with petrol interceptors which are maintained regularly and contaminants disposed of appropriately.

**Soil:** Although the built forms being proposed for the Masterplan are not likely to lead to soil contamination it must be noted that due to the industrial heritage there is potential for existing contamination. Therefore as part of any detailed planning application, it will be required that an assessment be made of existing soil contaminant levels and any necessary remedial work undertaken to the satisfaction of the Council.

**Light:** External lighting shall be designed so that the upward component of illumination is minimal and designs shall ensure that security lighting, signs etc. do not shine directly into apartment windows.

**Noise:** It is expected that the designs will comply with Part E of the Building Regulations as a minimum. Noise from non-residential activities shall not exceed the requirements set out in PPG 24: Planning and Noise.

### 2.2 Energy

The average Carbon Index of 8.6 can be achieved through either improving the insulation of the fabric so that U values are lower than the Elemental values set out in Part L1 of the Building Regulations or using a heating method that reduces carbon emissions compared with a conventional gas fired heating system, or some combination of the two. The minimum carbon index benchmark of 8.0 applies to the worst case apartment for each building.

If it is proposed that some apartments be air conditioned, options for minimising the carbon emissions as a result should be investigated. This could include the type of air conditioning proposed and the incorporation of a renewable source of electricity into the scheme. Electricity produced as a by-product of heat generation (combined heat & power) cannot be considered as originating from a renewable source unless the fuel used is renewable (eg energy crops, coppiced timber or wood chips).

The benchmark for total carbon emissions of 55kgCO<sub>2</sub>/m<sup>2</sup>/year should be based on a model that predicts annual carbon emissions for the day to day operation of the apartment blocks. This benchmark applies to each building as a whole, not the worst case apartment, and includes heat and power for all domestic operations as well as common services. Allowance should be made for diversity based on a validated model for the type of building under consideration. Commercial usages within the same building envelope as the apartments can be excluded from the calculation.

### 2.3 Windows

Windows shall be installed that meet the following criteria:

- Part L1 requirements or better.
- Airtightness criteria (see Benchmarks above).
- Controllability in summer such that occupants can adjust the window opening to meet their ventilation needs according to the wind direction and speed prevailing.
- Trickle ventilation in winter to meet Part F Building Regulations requirements.
- Solar control to prevent summer overheating (this can be a separate component such as brises soleil or external shutters depending on orientation).

### 2.4 Embodied Energy

The embodied energy of all construction materials should be determined from the UK National Database of Environmental Profiles for Construction Materials, maintained by BRE and expressed as an equivalent CO<sub>2</sub> emission per unit gross floor area. The embodied energy comprises the total energy required in the extraction, transportation and processing of raw materials and the manufacture of components.

## **2.5 Water Systems**

Water consumption shall be minimised by the installation of low water flow appliances.

Where white goods are to be installed these shall be A rated under the EC Energy Efficiency Labelling Scheme.

"Power showers" shall not be installed. Instead aerating shower heads shall be provided to create a similar sensation to a "power shower" but at less than half the water consumption.

Dual-flush cisterns shall be installed having a maximum flush volume of 6 litres.

Rainwater shall be attenuated by a minimum of 50% before discharge to the Basin. Where economically viable provision should be made for recycling this water for watering of soft landscaping.

## **2.6 Specification**

Specifications for building services plant, systems and equipment shall be based on the NES Sustainable Engineering Specification (4).

## **2.7 Waste**

Provision shall be made for the storage of at least three separate receptacles for recyclable waste in the apartments and at ground level for collection by the Council.

### 3.0 Construction

All contractors that work on the construction site shall operate the Considerate Constructors Scheme.

Construction processes shall be designed and organised so as to minimise waste. Construction waste shall be monitored on-site and arrangements made for sorting and where possible recycling waste materials on-site. Refer to BRE's SMART Waste methodology.

CCS sets out criteria by which the environmental impact of construction activities can be judged under the following headings:

- Considerate - to be considerate to the needs of all those affected by the construction process and its impact on the environment. Special attention to those with sight, hearing or mobility difficulties.
- Environment - to be environmentally aware in selection and use of resources, paying particular attention to waste management and avoidance of pollution, using local resources wherever possible and keeping noise to a minimum. Waste management, minimisation and recycling: guidance is available from the Environment Agency and CIRIA. Best practice in minimising dust emissions to air and pollution of ground and surface water: Planning Guidance PPG 1, 5 and 6 apply. Minimising noise impact: BS 5228 Noise and vibration control on construction and open sites: Part 1 - 1997: Code of practice for basic information and procedures for noise and vibration control.
- Cleanliness - keeping the site clean and in good order and ensuring the surrounding area is kept free from mud, spillage and unnecessary construction debris.
- Good neighbour - undertaking full and regular consultation with neighbours regarding site activity from pre-start to final handover. Providing site information and viewing facilities where practical.
- Respectful - promoting respectable and safe standards of behaviour and dress. Lewd or derogatory behaviour should not be tolerated under threat of disciplinary action.
- Safe - ensuring all construction operations and vehicle movements are carried out with care for the safety of passers-by, neighbours and site personnel.
- Accountable - being accountable to the public by providing site contact details and being available to deal with their concerns and develop good local relations.

### 4.0 Provision of Information

Occupiers shall be provided with information on the energy and water conservation features of their apartment and tips on how to save energy and water.

In addition Social housing / Key worker tenants shall be provided with guidance on purchase of energy and water efficient appliances.

### 5.0 References

- (1) "EcoHomes - The Environmental Rating for Homes." BRE, 2003.
- (2) "Designing Energy Efficient Multi-Residential Buildings." Good Practice Guide 192. BRE, 2003.
- (3) "Minimising Air infiltration In Office Buildings." Building Research Establishment Report 265. BRE, 1994.
- (4) "Greening the NES - A Guide to Sustainable Engineering Specification." ECD Energy and Environment, 2002.
- (5) "Environmental Performance Indicators for Sustainable Construction." Movement for Innovation Sustainability Working Group Report, 2001.

