Bentley House

Sustainability Assessment

for

Wellcome Trust

01/06/2010

7503

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1 EXECUTIVE SUMMARY

A Sustainability Assessment has been prepared by Ramboll UK for the Wellcome Trust for planning.

The report relates to the proposed development at Bentley House, Euston Road, Camden. It's a multi-residential scheme part new built and retaining the Euston Road facade. The site will provide approximately 170 student accommodation rooms with associated amenity space.

The proposed development is located within The London Borough of Camden. All the student accommodation rooms are designed to exceed BREEAM Multi-residential 'Very Good'.

This Sustainability Statement is intended to objectively demonstrate that the proposed development:

- Responds to the sustainability issues of international, national, regional and local planning policies, focusing on the London Plan and Camden's Unitary Development Plan – Replacement 2006;
- Contributes to the sustainable development of the local area; and
- Can be considered Good Practice in Sustainable Design.

2 INTRODUCTION

This report has been prepared by Ramboll UK for the Wellcome Trust for planning.

The report has been prepared for the exclusive use of the Client and should not be used in whole or in part by any third parties without the express permission of RUK in writing.

2.1 Site Description

The Site is known as Bentley House, Euston Road, Camden. The Site is currently an existing building associated to its former operation. The building has been unoccupied since 2007. The Site is close King's Cross station and Euston Square tube station.

2.2 Project Description

The proposed development is a multi – residential scheme comprising approx 170 student accommodation rooms and associated amenities.

The London Borough of Camden target for the reduction of Carbon Dioxide emissions from low / zero carbon technologies is 20 %. This will be exceeded by featuring improvements to building fabric, low air permeability, Combined Heat and Power plant and Solar Photovoltaics. The combination of the technologies above achieves just over a 20 % reduction in energy compared to total site energy demand.

The multi-residential study bedrooms have been designed to attain and exceed BREEAM Multi-residential 2008 'Very Good'.

2.3 Purpose of Statement

This Sustainability Statement, referred to hereafter as the 'Statement', is intended to objectively demonstrate that the proposed development:

- Responds to the sustainability issues of international, national, regional and local planning policies, focusing on the South East planning policy plan and guidance;
- Contributes to the sustainable development of the local area; and
- Can be considered Good Practice in Sustainable Design.

It covers both the construction and occupation phases, and is organised in the following sections:

- Policy Context;
- Methodology;
- Development Plan; and
- Summary.

2.4 Definition of Sustainable Development

The most common definition of Sustainable Development is taken from the Brundtland Report (1987).

> *"Development that meets the needs of the present without compromising the ability of future generations to meet their own needs".*

The UK Government's Sustainable Development Strategy (see below) accepts for the first time the idea of environmental limits and places this as one of the primary objectives. The four other 'Guiding Principles' of the strategy are: ensuring a strong and healthy and just Society; achieving a sustainable economy; promoting good governance; and using sound science responsibly.

3 POLICY CONTEXT

Sustainable Development policies have been developed at an international, national, regional and local level. The major legislation relevant to the Proposed Development is outlined below.

3.1 International

3.1.1 International Earth Summit, 1992

The Rio Earth Summit saw the culmination of increasing global environmental and sustainability concern in the development of a number of multilateral outputs. These included two international agreements and a major action agenda on world wide sustainable development.

3.1.2 United Nations Framework Convention on Climate Change (UNFCCC), 1992

The UNFCCC aims to stabilise greenhouse gas concentrations in the atmosphere to prevent dangerous damage to the climate system. The ratified Kyoto Protocol (1997) sets emission targets for industrialised countries. The UK has accepted a 12.5% reduction in greenhouse gases in the period 2008-2012.

3.1.3 Convention on Biological Diversity, 1992

This Convention sets out commitments for maintaining biodiversity in the context of global economic growth. It has three main goals: the conservation of biological diversity; the sustainable use of its components; and the fair and equitable sharing of the benefits from the use of genetic resources.

3.1.4 Agenda 21, 1992

Agenda 21 provides a blueprint on how to make development socially, economically and environmentally sustainable. It offers policies and programmes to achieve a sustainable balance between consumption, population and the Earth's life-supporting capacity. Agenda 21 calls on governments to adopt national strategies for sustainable development which should be developed with wide participation, including local authorities, business, non-government organisations and the public.

3.1.5 Aarhus Convention (2001)

The United Nations Economic Commission for Europe (UNECE) Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, or 'Aarhus Convention' was adopted in 1998 and entered into force in 2001.

3.2 National

3.2.1 Home Energy Conservation Act, 1995

The Act aims to secure improvements in energy efficiency in the domestic sector. It requires every UK local authority with housing responsibilities to produce an energy conservation report that identifies practicable and cost-effective ways of improving the energy efficiency of all residential accommodation in their area; and to report on progress made in implementing the measures.

3.2.2 Community Strategy – Local Government Act, 2000

The Act placed a duty on Local Authorities to produce a community strategy promoting the social, economic and environmental well-being of their areas and contributing to the achievement of sustainable development in the UK.

3.2.3 Local Sustainability Indicators, 2000

This document presents ideas for measuring sustainable development and quality of life in local communities.

3.2.4 Sustainable Communities: Building for the Future, 2003

Sets out the Government's long-term programme of action to tackle pressing problems and raise the quality of life of communities in England.

3.2.5 Planning Policy Statement 22 (PPS 22), 2004

PPS 22 sets out the Government's national policy for renewable energy, in terms of both dedicated renewable generation projects (e.g. wind farms) and 'embedded' generation. It states that "local planning authorities may include policies in local development documents that require a percentage of the energy to be used in new residential, commercial or industrial developments to come from on-site renewable energy developments".

3.2.6 UK Sustainable Development Strategy, 2005

Securing the Future, the UK Sustainable Development Strategy, builds on the previous report (1999) taking into account devolution and the changed structure of government in the UK. It also reflects the new policies that have emerged since the previous strategy and includes a stronger international element. It focuses on four priorities: sustainable consumption and production; climate change; natural resource protection; and sustainable communities.

3.2.7 The Energy White Paper, 2007

The Energy Challenge, the recent Energy White Paper presents international and national strategies to reduce carbon dioxide emissions and ensure the supply of secure, clean and affordable energy. It succeeds the 2003 Energy White Paper which sets out Government's long-term strategic vision for energy policy.

3.2.8 Planning for a Sustainable Future, 2007

This White Paper aims to reform the planning system to streamline decision making in particular for major infrastructure projects. It is set around 5 key principles: planning must be responsive, particularly to longer term challenges such as increasing globalisation and climate change, and properly integrate our economic, social and environmental objectives to deliver sustainable development; the planning system should be streamlined, efficient and predictable; there must be full and fair opportunities for public consultation and community engagement; the planning system should be transparent and accountable; and planning should be undertaken at the right level of government – national, regional and local.

3.3 Regional

3.3.1 Spatial Development Strategy for London, 2004

The Spatial Development Strategy for London (the London Plan), addresses issues that are of strategic importance to Greater London. It sets out an integrated social, economic and environmental framework for Development in London over the next 15-20 years.

3.3.2 Supplementary Planning Guidance (SPG) on Sustainable Design and Construction, 2006

The SPG was published to complement the London Plan. This document provides further information, including the Mayor's essential and preferred standards, in order for Developments to meet the highest standards of design and construction. The Proposed Development's response to the SPG is presented in full in the Sustainability Checklist, Appendix 1.

3.3.3 The Mayor's Environmental Strategies, 2002-2008

The Mayor of London has published a number of environmental strategies to set out his priorities and proposals for making London a more sustainable city. The strategies address air quality, ambient noise, climate change, energy, municipal waste, business waste and water. The Mayor's sustainable development checklist is presented in chapter 5 of this report

3.4 Local

3.4.1 *Unitary Development Plan – London Borough of Camden (LBC) Replacement 2006.*

The LBC UDP was adopted in June 2006 and sets out the Council's policies and proposals for the development and use of land. Policies related to Sustainable Development are addressed in Section 4 through policies SD1 – SD13.

4 SUSTAINABILITY STRATEGY

In this Section measures proposed to mitigate and enhance sustainable and environmental objectives related to the Proposed Development are presented. In Section 5, a checklist is provided of the London Plan essential and preferred standards followed by the sustainability checklist from the Regional Sustainability Framework.

4.1 Archaeology and Ground Conditions

4.1.1 Archaeology

The site is covered by an existing building on made ground and any archaeological remains, if present, are likely to have been compromised by the previous land use. As a result it is not expected that any significant mitigation measures would need to be considered to minimise the impact on the archaeological remains of the site.

4.1.2 Ground Conditions

The site consists of an existing building from the previous use and is therefore an excellent candidate for redevelopment. The site will be subject to a contaminated land assessment and suitable local remediation has been applied to the areas of impact.

4.2 Ecology

The current site consists of an existing building and does not contain significant vegetation. It is likely an ecological assessment will deem the site to be of low ecological value. The proposed development is expected to enhance biodiversity via the planting of native plant species in the courtyards which can attract and support local wildlife. Mature trees do exist close to the site and will be protected during development. It is therefore expected that the proposed development will enhance the on-site ecology.

4.3 Energy

A key aspect of the design of the proposed development has been the promotion of energy efficiency and reduction of carbon dioxide (CO_2) emissions. This is demonstrated by the commitment to achieve energy targets set under the local planning policy to achieve 20 % reduction in Carbon Dioxide emissions via low and zero carbon technologies. This considers both the Part L building compliance energy uses of heating, cooling, hot water and lighting used within the building, as well as additional energy uses such as office appliances.

The proposals also commit to achieve BREEAM Multi-residential 2008 'Very Good'.

An Energy Strategy demonstrating compliance with the London Plan, Camden's UDP and BREEAM has been prepared and is issued in a separate submission. The energy option to be incorporated on site is Combined Heat and Power (CHP) and Solar Photovoltaics (PV).

In accordance with Camden's UDP and guidelines for the Proposed Development, the following strategies have been considered in the following priority order; passive design and energy saving features and incorporation of low or zero carbon technologies.

During the early design stages, massing and orientation studies have been carried out to maximise natural daylighting opportunities to benefit occupants and passively reduce energy demand.

Further energy efficient and passive design measures that would be incorporated into the proposed development include much improved building material specifications, low U-values, high air tightness and localised lighting and heating controls. Where white goods are purchased these would all have A or A+ energy rating. A natural ventilation strategy is sought throughout the majority of the proposed development via bespoke ventilation grilles, although mechanical ventilation incorporating heat recovery will be installed in the rooms with the existing facade.

Connection to a district heating system has been considered but there is not one in close vicinity to the site. However future connections shall be provided for should a district heating system be established.

As set out in the Energy Strategy Report, CO_2 emissions would be further reduced through in incorporation of a Combined Heat and Power (CHP) engine and Solar Photovoltaics. The CHP effectively operates as a mini power station, burning gas to drive a turbine to produce electricity. The waste heat generated by the CHP is captured and used to supply heating and domestic hot water via a low loss header. The operation of the CHP will save 20 % of CO_2 emissions from the proposed development. Solar Photovoltaics (PV) are to be integrated into the roofs design to produce electricity. The PV will save 0.2 % of the CO_2 emissions from the proposed development.

The total annual carbon dioxide reductions for the entire site as a result of the renewable technologies, low / zero carbon technologies and energy efficient measures described above have been calculated as 148.5 tCO_2, which equates to a reduction of 20.2 % across the Site.

4.4 Environmental Benchmarking

The Proposed Scheme is committed to achieve a BREEAM Multi-residential 2008 'Very Good' rating, as required under Camden's UDP. A preliminary assessment has been carried out which indicates that high 'Very Good' ratings will be achieved.

4.5 Materials

A number of measures have been identified to maximise the use of materials from sustainable sources and with an inherently low impact on the environment, these include:

- Sourcing all timber from environmental certification schemes such as the Forest Stewardship Council. Other building materials will be responsibly sourced where practical;
- Sourcing materials locally where possible;
- Insulation materials containing substances known to contribute to stratospheric ozone depletion or with the potential to contribute to global warming would not be used;
- Where feasible using paints and varnishes with low Volatile Organic Compounds (VOC) content; and
- Inert and low emission finishes, construction materials, carpets, and furnishings would be used wherever practical.

Furthermore during construction, materials will be carefully stored and protected on site to prevent accidental damage and wastage.

4.6 Microclimate

During construction it is intended that the contractor would follow the guidelines and regulations set out in the Considerate Constructors Scheme (CCS). The aims of the scheme are to minimise any disturbance or negative impact from the construction process. The proposed development includes a commitment to achieve a high CCS score by meeting all the mandatory criteria plus at least 80% of the optional criteria. Furthermore a Construction Management Plan and a Construction Environmental Management Plan (CEMP) would be implemented to minimise environmental impacts.

Potential microclimate impacts are further considered below, for both the construction and operational phases of the proposed development.

4.6.1 Air Quality

The site is located within an Air Quality Management Area (AQMA) for annual levels of nitrogen dioxide (NO_2), which are linked primarily to road vehicle emissions.

Construction traffic travelling to and from working on site can release particulate matter (PM_{10}) and other exhaust gases (including NO_2). The routes and volume of construction traffic would be carefully managed to keep impacts to a minimum.

Site activities during demolition and construction can also create PM_{10} and dust emissions, which have potential to cause temporary nuisance.

A number of mitigation measures would be undertaken under the Considerate Contractors Scheme to mitigate air quality impacts with a particular focus on dust emissions. Potential examples include erecting dust barriers, using suppressing dust with water, covering skips and providing wheel washes for vehicles.

During the operational phase, it is proposed that a Travel Plan is implemented to reduce vehicle trip frequency and encourage deliveries out of peak times to avoid congestion. Emissions from plant would be controlled and dispersed through the use of a suitable stack and filters. The nature of the development will not have any immediate impact on the residents as the air quality assessment has concluded that no significant adverse impacts as the site is already in a heavily polluted environment.

4.6.2 Lighting

At least 75 percent of internal lighting will be energy efficient with a strong commitment to ensure the level is higher.

External lighting will be required across the Site in order to achieve safety and comfort criteria. Where possible the use of lighting would be minimised and in all cases low energy fittings would be installed. Furthermore it is intended to follow compliance with the Institute of Lighting Engineers Guidance notes for the reduction of light pollution (2000).

External lighting would be designed to meet Secure by Design Standards to comply with BS5489 (see Socio-economic section below).

Additionally the following measures would be considered:

- Limits to the average upward light ratio of the luminaries, to restrict sky glow;
- Limiting illuminances at the windows of nearby properties for which light trespass might be an issue;
- Limiting the intensity of each light source in directions outside the site;
- Limiting the average luminance of the Development; and
- Incorporating timers and daylight sensors to prevent unnecessary lighting in the day.
- Limiting external lighting for the provision of foraging and commuting bats across the site.

4.6.3 Noise and Vibration

Some noise and vibration may occur from demolition and construction activities, which could cause nuisance to local people. These effects would be temporary and would be

managed under the CCS, for example by controlling working hours, using quiet machinery and providing noise barriers for the site as appropriate.

A noise assessment has been carried out for the site to ensure that local people are exposed to acceptable ambient noise levels. Façade treatment (glazing and ventilation) has been proposed to limit the potential disturbance from external noise levels from the railway lines, and noise limits have been provided for plant installed within the site. The proposed development is not expected to generate significant volumes of noise during operation.

4.6.4 Wind

The site is not exposed to high wind levels, no detailed study has been completed however the massing is not anticipated to have a significant effect on wind patterns for the local area.

4.7 Socio-economic and Wellbeing

The proposed development would be designed in accordance with the essential *Secured-by-Design* requirements. Replacement of the industrial buildings & hardstanding by the proposed residential development is in keeping with the surrounding area and its occupancy is anticipated to improve the safety of the local environment. The scheme will include design that has been recommended by a Crime Prevention Design Advisor, thus achieving an opportunity to reduce crime and fear of crime through sustainable design.

Information Guides would be provided to occupants to facilitate their use and enjoyment of the proposed development and local area.

The proposed development is close to a number of attractions, playing fields and amenities. For example Regents Park & St James gardens are within 500m of the proposed development and offers a greenspace with playing fields. Central London offers a wide range food provision and amenities, again within 500m of the proposed development. The proximity of recreational and commercial amenities contributes to health and wellbeing by encouraging people to walk and exercise outdoors, and to work and shop close to the proposed development, minimising the use of motorised vehicles and other forms of transport.

4.8 Transport and Access

The site is well connected to the surrounding highway network due to its location on the Euston Road.

There are bus stops within the immediately adjacent to the site which has a regular service to a wide range of destinations including, King's Cross, Euston and Central London.

The site is situated 1-2 minute's walk from Euston Square tube and King's Cross rail station.

Pedestrian routes and safe pedestrian crossings are available from and around the site, and safe cycle routes have been identified in close proximity to the site.

As is consistent with local policy, the Proposed Development includes a range of features intended to reduce reliance on car use, these include:

- Easy access to amenities, train and bus services;
- Provision of cycle storage facilities; and
- Provision of public transport information to building users.

4.9 Waste

Construction waste would be minimised by implementing procedures such as the DTI's Site Waste Management Plan to ensure that wherever possible: volumes of materials used are reduced; recycled materials are used within the building and landscaping; materials are sourced locally where possible; and materials that are harmful to the health and environment are avoided.

A Site Waste Management Plan (SWMP) would be developed to minimise the embodied environmental impacts of the Proposed Development; to incorporate the following practices:

- Sort and recycle site construction waste;
- Reduce disposable packaging waste where practicable;
- Give preference to suppliers who can provide life-cycle assessment of their products and can demonstrate that they have taken measures to mitigate their environmental impacts where practicable.

In order to support operational recycling, the site would be provided with dedicated internal and external space for separation and recycling facilities.

4.10 Water, Drainage and Flooding

Reference to Environment Agency Flood risk maps indicate that the site is considered to be at a low risk from flooding. The current building will be replaced by a building incorporating a green courtyards and attenuation tanks reducing the surface water run-off from the site.

Operational water consumption will be reduced via the specification of water efficient sanitaryware such as dual flush toilets, aerated taps and low flow shower heads.

Construction works can potentially present risks to water quality. Procedures and equipment for protecting watercourses from site pollution are a mandatory requirement of the CCS scheme.