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BREEAM Offices & Multi-Residential 2008
Predictive Assessment
42 Phoenix Road, London, NW1 1TA.
Findlay Estates Co. Ltd.
June 2010













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## June 2010

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## **1** Introduction: Predictive BREEAM

### **Proposed Development**

- 1.1 This report provides a predictive Design and Procurement Stage Offices & Multi-Residential Assessment for the proposed Refurbishment and Extension of 42 Phoenix Road, London, NW1 1TA.
- 1.2 The development will include the refurbishment and extension of a 1950s building including refurbishment of the existing three floors, extension of the building to the rear and construction of a new 4th floor with a mansard roof.
- 1.3 The office uses will be on the refurbished and extended lower ground, ground and first floors, with extended student accommodation on the second, third and fourth floors. There is an existing crèche on site which will move out to temporary accommodation during the works and return once the work is complete.
- 1.4 The building is required by the London Borough of Camden to meet a BREEAM rating of 'Very Good'.
- 1.5 As is good practice with BREEAM assessments, a scoping request was submitted to the BRE to request their confirmation on scheme classification. The BRE have confirmed that two assessments are necessary, one Offices and one Multi-residential. This is confirmed within Appendix A.

### **Regulation and New Demands on Developments**

1.6 There is an increasing demand for development projects to address the environmental performance of the buildings that are being proposed. This is being achieved through a number of regulatory methods and policy drivers, which are described in the following sections.

### **European Legislation**

The Energy Performance of Buildings Directive (EU EPD)

1.7 The EU EPD mandates that Energy Performance Certificates (EPCs) be issued for homes and commercial / public buildings, over a specified threshold floor area. EPCs grade buildings on a scale of A-G, similar to the system for grading domestic white goods. Two types of certificate can be awarded; 'Asset' (which measures the intrinsic performance of the building based on its design); and 'Operating' certificates (measuring how the building is managed and actually performs). In all public buildings operating certificates known as Display Energy Certificates (DECs) must be displayed.

#### **National Legislation**

#### Planning Policy

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- 1.8 A consultation was held between 9<sup>th</sup> March and 1<sup>st</sup> June 2010 to gain stakeholder views and comments on the new draft planning policy [intended for publication within 2010] which combines and updates the existing planning policy statements on climate change (PPS1 supplement) and renewable energy (PPS22). The Government intends the new draft policy to set out a planning framework for securing enduring progress against the UK's targets to cut greenhouse emissions and use more renewable and low carbon energy, and to plan for the climate change now inevitable. This new PPS will replace the both the 2004 and 2007 PPS and it is proposed that it will become a consolidated update to PPS1 and will also provide an overarching framework for PPS25 on Development and Flood Risk.
- 1.9 The reason for the intended update is to reflect the significant amount of new legislation and policy since 2007which affects both planning and underpins plan-making and development management. These policies include:
  - The Climate Change Act 2008 that introduces statutory targets for carbon emissions reductions
  - EU Directive 2009/28/EC on the promotion of the use of energy from renewable resources, under which the UK has made commitments
  - The Low Carbon Transition Plan & Renewable Energy Strategy 2009
  - The Household Energy Management Strategy 2010
  - Publication of the proposed definition of zero carbon homes
  - Update to the UK Climate Change Impacts Programme projections 2009
  - The Local Democracy, Economic Development and Construction Act 2009
  - The Energy Act 2008

#### UK Renewable Energy Strategy (RES)

1.10 The Renewable Energy Strategy (RES) was published on 15 July 2009. The RES sets out proposals for how UK will meet its 15% renewable energy by 2020 target. The lead scenario identified biomass heat and electricity delivering around 30% of the overall target. This is equal to about 4.5% of UK energy needs and a considerable increase on the current situation.

1.11 The Government also took powers in the Energy Act 2008 to establish the Renewable Heat Incentive (RHI). Generators of renewable heat (at all scales, and including biomass) will receive a set rate of £ per MW of renewable heat produced. DECC expects the RHI to go live by April 2011.

#### The Climate Change Act

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- 1.12 Details of a Draft Climate Change Bill were revealed by the Government in March 2007 and were subsequently the subject of debate and scrutiny by special parliamentary committee. The Climate Change Act subsequently finished its passage through parliament on 18<sup>th</sup> November 2008 and was enacted by Royal Assent on 26<sup>th</sup> November 2008. The UK is the first country in the world to have a legally binding long-term framework to cut carbon emissions. It also creates a framework for building the UK's ability to adapt to climate change.
- 1.13 The Act comprises of the following elements, and is intended to act as a catalyst to individuals to invest in low carbon technologies with time horizons extending beyond the current 2012 Kyoto Protocol limits:
  - A legal commitment to reduce CO<sub>2</sub> by 80% by 2050, with a minimum 34% against a 1990 baseline.
  - A carbon budgeting system which caps emissions over five-year periods, with three budgets set at a time, to help us stay on track for our 2050 target. The first three carbon budgets will run from 2008-12, 2013-17 and 2018-22.
  - The creation of the Committee on Climate Change a new independent, expert body to advise the Government on the level of carbon budgets and on where cost-effective savings can be made.
  - The inclusion of international aviation and shipping emissions in the Act or an explanation to Parliament why not by 31 December 2012.
  - Limits on international credits; the independent Committee on Climate Change has a duty to advise on the appropriate balance between action at domestic, European and international level, for each carbon budget. The Government must set a limit on the purchase of credits for each budgetary period.
  - Further measures to reduce emissions, including powers to introduce domestic emissions trading schemes more quickly and easily.
  - A requirement for the Government to report at least every five years on the risks to the UK of climate change, and to publish a programme setting out how these will be addressed.

- An Adaptation Sub-Committee of the Committee on Climate Change, providing advice to, and scrutiny of, the Government's adaptation work.
- A requirement for the Government to issue guidance and to undertake further work on making emissions reporting mandatory under the Companies Act.
- New powers to support the creation of a Community Energy Savings Programme (by extending the existing Carbon Emissions Reduction Target scheme to electricity generators).
- A new requirement for annual publication of a report on the efficiency and sustainability of the Government estate.

#### The Strategy for Sustainable Construction

1.14 The Strategy for Sustainable Construction was formally launched in June 2008. The Strategy brings together many different policy initiatives under a single banner, and provides specific targets. The consolidation of targets within one plan is intended to strengthen the onus on developers to follow such a strategy. The overarching targets are summarised in Table 1.

	Category	Overarching Target
The 'Means'	Procurement	To achieve improved whole life value through the promotion of best practice construction procurement and supply side integration, by encouraging the adoption of the Construction Commitments in both the public and private sectors and throughout the supply chain.
	Design	The overall objective of good design is to ensure that buildings, infrastructure, public spaces and places are buildable, fit for purpose, resource efficient, sustainable, resilient, adaptable and attractive. Good design is synonymous with sustainable construction. The aim is to achieve greater use of design quality assessment tools relevant to buildings, infrastructure, public spaces and places.
	Innovation	To enhance the industry's capacity to innovate and increase the sustainability of both the construction process and its resultant assets.
	People	An increase in organisations committing to a planned approach to training (e.g. Skills Pledges; training plans; Investors in People or other business support tools; Continuous Professional Development (CPD); life long learning). Reduce the incidence rate of fatal and major injury accidents by 10% year on year from 2000 levels.
	Better Regulation	A 25% reduction in the administrative burdens affecting the private and third sectors, a 30% reduction in those affecting the public sector by 2010.
The 'Ends'	Climate Change Mitigation	Reducing total UK carbon dioxide $(CO_2)$ emissions by at least 60% on 1990 levels by 2050 and by at least 26% by 2020. Within this, Government has already set out its policy that new homes will be zero carbon from 2016, and an ambition that new schools, public sector non-domestic buildings and other non-domestic buildings will be zero carbon from 2016, 2018 and 2019 respectively.
	Climate Change Adaptation	To develop a robust approach to adaptation to climate change, shared across Government.
	Water	To assist with the Future Water vision to reduce per capita consumption of water in the home through cost effective measures, to an average of 130 litres per person per day by 2030, or possibly even 120 litres per person per day depending on new technological developments and innovation.
	Biodiversity	That the conservation and enhancement of biodiversity within and around construction sites is considered throughout all stages of a development.
	Waste	By 2012, a 50% reduction of construction, demolition and excavation waste to landfill compared to 2008.
	Materials	That the materials used in construction have the least environmental and social impact as is feasible both socially and economically.

Table 1-1: Overarching Targets from the Strategy for Sustainable Construction.
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#### **Building Regulations:**

1.15 Part L of the Building Regulations addresses the conservation of fuel and power and there is a progressive tightening of this element in order to raise standards in the performance of buildings. Of significance, there are current discussions taking place investigating the costs and benefits of raising energy performance standards in new-non domestic buildings all the

#### **Regional Legislation**

#### The Merton Rule

1.16 In 2004, the issue of PPS22 (Renewable Energy) allowed local authorities to mandate onsite renewable energy production (typically 10%) as a condition of development. The London Borough of Merton was the first to adopt this provision and approximately 150 local authorities have followed suit. Despite debate over the definition of renewable energy and whether on or off site generation is acceptable, the policy remains. However, this has been superseded in most cases by the 20% rule brought in by the London Plan (policy 4A.7) (see following section).

#### The London Plan (Spatial Development Strategy for Greater London)

- 1.17 The London Plan (Consolidated with alterations since 2004), which incorporates a series of alterations to the London Plan since its initial release in 2004, was published by the Greater London Authority in February 2008. It introduces a revised energy hierarchy to be used in the planning of all major development :
  - use less energy;
  - supply energy efficiently; and
  - use renewable energy
- 1.18 The plan also requires that major developments achieve a 20% reduction in CO<sub>2</sub> emissions from the use of on-site renewable energy generation, unless it can be demonstrated that such provision is not viable (policy 4A.7).
- 1.19 Policy 4A.4 of the London Plan also requires major developments to evaluate Combined Heat and Power (CHP).

- 1.20 Policy 4A.3 states that the Mayor will promote sustainable waste behaviour in new and existing developments, including support for local integrated recycling schemes, CHP and Combined Cooling Heat and Power (CCHP) schemes and other treatment options.
- 1.21 Efficient use of energy is also addressed within Policy 4A.10, which states that the Mayor will strongly encourage development that avoids excessive heat generation and contributes to the prevention of further over-heating (exacerbating the urban heat island effect).

### **BREEAM Offices / Multi-residential Predictive Assessment**

- 1.22 The Building Research Establishment (BRE) has developed a suite of tools called BREEAM (Building Research Establishment Environmental Assessment Method) that assess the performance of buildings in the following areas:
  - Management
  - Health and Wellbeing
  - Energy

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- Transport
- Water
- Materials
- Waste
- Land Use and Ecology
- Pollution
- 1.23 The suite of tools includes methodologies for assessing residential properties (the Code for Sustainable Homes, BREEAM Multi-Residential) and a range of non-residential properties (including BREEAM for Offices, BREEAM for retail, BREEAM for Education, BREEAM for Healthcare and BREEAM for Industrial). For these schemes the building's performance is assessed against a standard set of criteria and awarded an overall rating of either 'Pass', 'Good', 'Very Good', 'Excellent or 'Outstanding''. The BRE has been asked for a formal response on the correct scheme classification for this project which has been confirmed as both an Offices and Multi-residential assessment.
- 1.24 The BRE also has a Bespoke / Other buildings version of BREEAM for assessing developments which do not fit into the standard BREEAM schemes outlined above.
- 1.25 The BRE states its aims and objectives for BREEAM as follows:

#### Aims of BREEAM

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- To reduce the environmental impacts of developments
- To enable developments to be recognised according to their environmental benefits
- To provide a credible, environmental label for buildings
- To stimulate demand for environmentally sustainable buildings

#### **Objectives of BREEAM:**

- To distinguish buildings of reduced environmental impact in the marketplace
- To ensure best environmental practice is incorporated in building design , operation, management and maintenance
- To set criteria and standards surpassing those required by regulations
- To raise the awareness of owners, occupants, designers and operators of the benefits of buildings with a reduced impact on the environment
- To inform the design process
- To allow organizations to demonstrate progress towards corporate environmental objectives
- 1.26 BREEAM applies different weightings to the various credit categories. The 2008 scheme weightings categories for standard BREEAM schemes\* are as follows:

	Table 1-	2: BREEAM	Category	Weightings	(2008)
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Category	Environmental Weighting %	
	New builds, extensions and major refurbishments	Building fit-out only (where applicable to scheme)
Management	12	13
Health & Wellbeing	15	17
Energy	19	21
Transport	8	9
Water	6	7
Materials	12.5	14
Waste	7.5	8
Land Use and Ecology	10	N/A
Pollution	10	11
Innovation	10	10

\*Note these may be subject to adjustment by the BRE if a scheme is assessed under the Bespoke/Other Buildings Scheme.

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- 1.27 The BRE introduced some new elements to the 2008 schemes which were not included in the previous 2006 schemes, including mandatory Post Construction Reviews (PCR) and mandatory credits by rating level (i.e. adherence to particular credits is required for an 'Excellent' rating). These are explained further within section 2 of this report.
- 1.28 BREEAM's main strengths are that it has been recognised at the national level as a method to demonstrate sustainable design and the design of the credits and scoring system mean that the applicable schemes can be applied in a similar way, on any building design anywhere in the country. This assessment method can be used in its full capacity as an assessment of the building's performance once the full details of the design have been established (usually post-Building Regulations stage). In advance of this, a predictive assessment can be undertaken, which considers the principles of the design and provides an indication of the likely score that would be achieved by the proposed development. BREEAM provides the ability to compare a proposal with others of a similar nature.
- 1.29 BREEAM is often used at a predictive stage for proposed developments for the following reasons:
  - To demonstrate the likely score achievable by the development

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- To demonstrate sustainability is incorporated at an early design stage
- To determine which credits are likely to be pursued in a formal assessment.
- 1.30 Predictive scores should be treated as such and it cannot be guaranteed that the scheme would achieve the indicative rating it has been awarded within this report during a formal assessment. The predictive assessment provides an opportunity to inform and enhance the design where potential improvements in sustainable design are identified.
- 1.31 It is important to remember that developments of similar standards on different sites may not be able to achieve the same BREEAM score. Achievement of a particular BREEAM rating can be affected by the site on which the development is planned to quite a degree and some of these factors can be outside of the developers control, e.g. distance to public transport, contamination level of site, ability to re-use any existing buildings, potential for ecological improvements, distance to amenities, external noise environment, existing hard landscaping, actual practical need for creditable items e.g. compactor.
- 1.32 The results of the BREEAM predictive assessment demonstrate that the proposed development has the potential to achieve a score within the following range:
  - Offices Assessment: 70.95 'Excellent'
  - Multi Residential Assessment: 64.58 'Very Good'

- 1.33 Performance in the various categories is demonstrated in Figure 1. The proposals performed best in both the Offices and Multi-residential predictive assessments in the Transport category. The offices assessment then scored best in the Waste category, with the multi-residential assessment scoring best in the Health & Wellbeing category.
- 1.34 Noting the predictive nature of this assessment, these scores are representative of the likely score the development may achieve during a formal assessment and scores are subject to update and change in a formal assessment and when full detailed design information becomes available.
- 1.35 The achievement of scores in a formal assessment is subject to satisfactory evidence being received in line with the full formal credit and evidence requirements.
- 1.36 The area where the predictive assessment has identified a relatively low score is Land Use & Ecology. This is a reflection of the characteristics of this development in which there is no outdoor space, or planted area to develop.
- 1.37 Some specific areas where queries would need to be raised with the BRE at a formal stage have been identified. These include the following:
  - Hea 4: High frequency lighting
  - Hea 20: Home office
  - Hea 21: Sound insulation
  - Tra 3: Cyclist facilities
  - Wst 3: Recyclable waste storage
  - Pol 5: Flood Risk



Figure 1: Summary Predictive Scoring Graph Offices

#### Figure 2: Summary Predictive Scoring Graph Multi-Residential



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