CONCLUSION

CHAPTER 6.0

6.0 Conclusion

6.1

Conclusion This Sustainability Statement assesses the Proposed Development against the GLA and LBC sustainable development aims and objectives, and demonstrates the sustainability features incorporated into the Proposed Development.

6.2

The Proposed Development intends to be a state of the art sustainable development, with sustainability principles embedded into its design and operational concept.

6.3

The sustainability principles for the Proposed Development include:

- Provision of versatile and flexible facilities to adapt quickly to changes in research methodologies;
- Reduction of energy usage and CO₂ emissions (by approximately 31% of the total building load) through energy-efficient building services, on-site CHP future-proofed to facilitate potential connection to any future Euston Road district heating scheme, and photovoltaics;
- Reduction of water usage throughout the building by specifying water efficient fittings and sanitary ware, water-efficient landscaping, and reverse osmosis technology;
- 'Green procurement' and sustainable sourcing of materials;
- Waste minimisation, recycling and composting;
- Protection and enhancement of the site ecology;
- Promotion of sustainable means of transport (location highly accessible by public transport; no car parking, apart for blue badge disabled users; extensive cycle parking; Travel Plan);
- Reinforcement of London's role as a global centre of scientific research; generation of high value investment and job creation with both local and international labour pools; regeneration of the local area; boosting demand for local services; and outreach activities to the community and local schools

6.4

The proposed sustainability strategy will also allow the Proposed Development to achieve a BREEAM 'Excellent' rating. The Proposed Development will be continuously re-assessed throughout its development, exploring opportunities to improve its BREEAM rating as much as practicable.

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GLOSSARY

Glossary

ADM Building Regulations' Approved Document Part M BAT Best Available Technology DMO Duilding Regulations' Approved Document Part M	oav
BAT Best Available Technology	oav
DMO Dividia a Managarana (Over)	oav
BIND Building Management System	oav
BREEAM Building Research Establishment Environmental Assessment Methodo	-97
BRF Biological Research Facility	
CCHP Combined Cooling Heat and Power	
CCS Considerate Constructors Scheme	
CEMP Construction Environmental Management Plan	
CHP Combined Heat and Power	
CLG Communities and Local Government	
DCMS Demolition and Construction Method Statement	
EA Environment Agency	
ES Environmental Statement	
FORS Freight Operator Recognition Scheme	
FSC Forest Stewardship Council	
GLA Greater London Authority	
HEPA High Efficiency Particulate Air	
HSE Health and safety Executive's	
HVAC Heating, Ventilation and Air Conditioning	
LBC London Borough of Camden	
LHTW Low Temperature Hot Water	
M&E Mechanical and Electrical	
MRC Medical Research Council	
ODPM Office of the Deputy Prime Minister	
PEFC Programme for the Enforcement of Forestry Certification	
PPS Planning Policy Statement	
PV Photovoltaic	
RO Reverse Osmosis	
RUDP Replacement Unitary Development Plan	
SAFED Safe and Fuel Efficient Driving	
SPG Supplementary Planning Guidance	
SWMP Site Waste Management Plan	
TDS Total Dissolved Solid	
TWUL Thames Water Utilities Limited	
UCL University College London	
UKCMRI UK Centre for Medical Research and Innovation	
WRAP Waste and Resources Action Programme	

APPENDICES

Appendix

APPENDIX

Preliminary BREEAM Bespoke Assessment

Project Title:	UK Centre for Medical Re
Report Title:	Preliminary BREEAM Bes
Project No:	49316036
Report Ref:	UKCMRI_Preliminary BR
Status:	Final Issue

UK Centre for Medical Research & Innovation Preliminary BREEAM Bespoke Assessment

September 2010

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espoke Assessment

REEAM Bespoke Assessment

EXECUTIVE SUMMARY

- ES 1. This Preliminary Building Research Establishment Environmental Assessment Method (BREEAM) Bespoke Assessment has been prepared by URS in support of a detailed planning application for the UK Centre for Medical Research and Innovation (UKCMRI) (herein referred to as the "Proposed Development"). The Proposed Development provides a biomedical research centre including laboratory and research space, lecturing and teaching space, exhibition space and a community facility; landscaped public open spaces; a new pedestrian route between Midland Road and Ossulston Street; and new vehicular access from Midland Road.
- ES 2. Due to its unique nature, the Proposed Development has been assessed against a BREEAM Bespoke scheme tailored on the Proposed Development characteristics. The Building Research Establishment (BRE) has developed a BREEAM Bespoke protocol for the Proposed Development, which provides a set of sustainability issues and requirements appropriate to the functions within the Proposed Development.
- ES 3. Several Preliminary BREEAM Bespoke 2008 Assessment workshops were undertaken throughout 2008, 2009 and 2010. The findings of the workshops and further analyses. alongside consideration of the Greater London Authority (GLA) and London Borough of Camden (LBC) feedback (provided during the pre-application process), indicate the Proposed Development could achieve an 'Excellent' BREEAM rating, and meet LBC targets of 60% of the energy credits, 40% of the materials credits, and 60% of the water credits.
- ES 4. In line with the UKCMRI vision to provide highly sustainable research facilities, the Proposed Development will be continuously re-assessed throughout its development (both at design and procurement stage and construction stage) to improve its BREEAM rating as much as feasible.
- ES 5. The results of the Preliminary BREEAM Bespoke 2008 Assessment are presented in this report. Currently, the predicted score of the development is 72.01%, which equates to an 'Excellent' rating.
- ES 6. Below is a summary of the commitments that will be incorporated into the detailed design, construction and operation of the Proposed Development in order to achieve the above rating:
 - Appoint a project team member to ensure that initial and seasonal commissioning is carried out in line with current best practice;
 - · Provide a Building User Guide on the operation and environmental performance of the Proposed Development;
 - Undertake consultation and provide feedback to the local community and building users. Consider the results of the consultation process in the design evolution;
 - Provide a secure development;
 - Undertake a Life Cycle Cost (LCC) analysis and implement its results;
 - Provide an occupant-controlled shading system;
 - Specify fluorescent and compact fluorescent lamps with high frequency ballasts;
 - Specify internal and external lighting in accordance with the appropriate illuminance levels recommended by CIBSE;
 - Appropriately zone and control lighting;
 - Preliminary BREEAM Bespoke Assessment

- external pollution and recirculation of exhaust air;
- Assess thermal comfort levels;
- and Guidance, L8, 2000;
- appropriate British Standard;
- provide laboratory filters easily accessible for maintenance;

- Provide energy-efficient external lighting and daylight controls;
- output of an approved energy modelling software;
- Technology Product List;

- spaces, showers and changing facilities);
- needs;
- Specify water-efficient sanitary and water fittings;
- towers, car washes, catering areas, etc.;
- Provide a major leak detection system;

· Locate air intakes and outlets serving occupied areas to avoid major sources of

 Design water and Heating, Ventilation and Air Conditioning (HVAC) systems to meet the requirements of Health and Safety Executive's (HSE) Approved Code of Practice

• Design spaces to achieve appropriate acoustic performance;

· Design fume cupboards and microbiological safety cabinets in accordance with the

• Design laboratory ventilation systems in compliance with best practice guidance, and

• Achieve a CO_2 Index (EPC rating) of ≤ 40 through passive design and energy efficiency measures, alongside on-site CHP and renewable technologies;

Sub-meter substantive energy uses and building function areas;

 Carry out a BREEAM-compliant feasibility study of low and zero carbon technologies, implement its results, and achieve a 20% reduction in the Proposed Development's CO₂ emissions over Part L of the Building regulations, based on the

• Minimise heat loss and air infiltration through the Proposed Development fabric;

• Specify cold storage refrigeration plant components from the ECA Energy

• Install energy efficient lifts compliant with BREEAM requirements;

• Specify BREEAM-compliant energy efficient fume cupboards;

• Re-develop a highly accessible site, in proximity of King's Cross Underground and Rail Stations, St Pancras International and numerous buses, located in close proximity to amenities such as grocery shops, post boxes and cash points;

• Provide an adequate number of BREEAM-compliant cyclist facilities (i.e. storage

• Provide a BREEAM-compliant Travel Plan to cover the Proposed Development

• Provide a water meter with a pulsed output on the mains supply, and sub-meters to individual water-consuming plant or building areas to be monitored such as cooling

Provide detection shut-off to the water supply to all toilet areas;

•	Specify low-water irrigation systems, such as drip feed subsurface irrigation;	CONTENTS		
•	Specify environmental friendly, sustainably sourced materials;	CONTE	2N15	
•	Specify Green Guide A or A^+ rated external hard landscaping and boundary protection;	Section	1	
	Specify responsibly sourced thermal insulation products with a low embodied impact	1.		
	relative to their thermal properties;	2.	LONDON BOROUGH OF CAMDEN BREEAM REQU	
•	Include suitable durability and protection measures and design features to prevent damage to the vulnerable parts of the Proposed Development;	3.	BREEAM BESPOKE 2008 METHODOLOGY	
•	Provide a central, dedicated space for the storage of the Proposed Development's recyclable waste streams, compliant with the BREEAM requirements;	4.	PRELIMINARY BREEAM BESPOKE ASSESSMENT	
•	Provide a dedicated space for compostable food waste to be stored prior to removal and composting at an alternative site;		Health and Wellbeing Section Energy Section	
•	Re-develop previously built-on land, defined as land of low ecological value;		Transport Section	
•	Protect all existing features of ecological value from damage during site preparation and construction works;		Materials Section Waste Section	
	Enhance and protect the site's ecology in line with an ecologist's recommendations;		Land Use & Ecology Section Pollution Section	
•	Minimise the long term impact of the development on the site's, and surrounding area's biodiversity;	5.	BREEAM RATING	
•	Specify refrigerant leak detection systems;	6.	CONCLUSIONS AND RECOMMENDATIONS	

- Minimise NO_x emissions from space heating systems to below 100mg/kWh;
- Re-develop a site defined as having a low annual probability of flooding and specify surface water run-off attenuation measures to minimise the risk of localised flooding;
- Specify oil separators in areas that are or could be a source of watercourse pollution;
- Design external lighting in compliance with the Institution of Lighting Engineers (ILE) Guidance notes for the reduction of obtrusive light; and
- Do not give rise to the likelihood of complaints from existing noise-sensitive premises and amenity or wildlife areas in proximity of the site.
- ES 7. The following should become contractor contractual requirements:
- Sign up to the Considerate Constructors Scheme and go significantly beyond best practice site management principles (score at least 36, out of 40);
- Minimise construction site impacts and source timber legally and responsibly; and
- Implement construction site waste management measures.

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REQUIREMENTS	2
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1.	INTRODUCTION	2.	LONDON BOROUGH OF CAMDEN BREEAM F
1.1 This Besp Cent Deve and publ vehic	This Preliminary Building Research Establishment Environmental Assessment Method (BREEAM) Bespoke Assessment has been prepared by URS in support of a detailed planning application for the UK Centre for Medical Research and Innovation (UKCMRI) (herein referred to as the "Proposed Development"). The Proposed Development provides a biomedical research centre including laboratory and research space, lecturing and teaching space, exhibition space and a community facility; landscaped public open spaces; a new pedestrian route between Midland Road and Ossulston Street; and new vehicular access from Midland Road.	2.1	LBC has chosen BREEAM as its assessment sustainability issues, is well tested, and is widely
		2.2	As required by LBC, a qualified BREEAM a Estimator and prepared this Preliminary BREE planning application. A Formal Design Stage BRE Certification, will be undertaken post-plann
1.2 This docu Bespoke objective Developm	s document reports on a preliminary assessment of the Proposed Development against the BREEAM spoke 2008 criteria, conducted during workshops held throughout 2008, 2009 and 2010. The main ective of the workshops was to ascertain the 'level' of sustainability achievable by the Proposed velopment.	2.3	The Proposed Development will therefore be as process, in accordance with the following:
			BREEAM Pre-Assessment Estimator to
1.3 Due to its un scheme tailo (BRE) has de of sustainabil	its unique nature, the Proposed Development has been assessed against a BREEAM Bespoke e tailored on the Proposed Development characteristics. The Building Research Establishment has developed a RREEAM Bespeke protocol for the Proposed Development, which provides a set		BREEAM Design Stage Assessment to commencement of work on site; and
	of sustainability issues and requirements appropriate to the functions within the Proposed Development.		 BREEAM Post Construction Review to occupation.
1.4	The UKCMRI team has engaged with the Greater London Authority (GLA) and the London Borough of Camden (LBC) through the pre-application process to ensure the Proposed Development's compliance with the planning requirements.	2.4	A Licensed BREEAM Assessor will complete throughout its design and construction phase.
1.5	The feedback provided by the GLA and LBC has been considered and as such the <i>Proposed</i> <i>Development</i> intends to target all practicable credits to achieve the highest possible BREEAM rating.	2.5	The Council has set challenging targets for achi
1.0			• 60% of the energy credits;
1.6	commitments that need to be made to score an 'Excellent' BREEAM rating, and achieve 60% of the energy credits 40% of the materials credits, and 60% of the water credits (as required by LBC).		• 40% of the materials credits;
			• 60% of the water credits; and
1.7	In line with the UKCMRI vision to provide highly sustainable research facilities, the Proposed Development will be continuously re-assessed throughout its development (both at design and		• 'Very Good/Excellent' rating.

The results presented in this report are based on the BRE pre-assessment estimator and are for 1.8 indicative purposes only. Confirmation of the actual achievement of the various credits will be obtained post-planning, as part of the Formal BREEAM Assessment work.

procurement stage and construction stage) to improve its BREEAM rating as much as feasible.

Preliminary BREEAM Bespoke Assessment

REQUIREMENTS

t method for sustainability, as it covers a broad range of ely accepted across the UK.

assessor has completed a BREEAM Pre-Assessment EAM Assessment report to be submitted alongside the and Post Construction Review Assessment, including ning.

ssessed at various stages in the design and construction

be provided with the planning application;

be submitted to, and approved by, the Council prior to

to be carried out and submitted to the Council prior to

all assessments and will be involved in the project

ieving sustainability, as follows:

BREEAM BESPOKE 2008 METHODOLOGY 3.

- 3.1 BREEAM is a method of assessing the environmental performance/sustainability of buildings against a set of criteria such as: management, energy use, health and well-being, pollution, transport, land use and ecology, materials, and water. Credits are awarded in each area according to performance, and these are added together to produce a single overall score. The Proposed Development is then rated on a scale of 'Pass', 'Good', 'Very Good', 'Excellent' and 'Outstanding', and a certificate is awarded at design stage (Interim certificate) and post-construction stage (Final certificate).
- Due to its unique nature, the Proposed Development has been assessed against a BREEAM Bespoke 3.2 scheme tailored on the Proposed Development characteristics. The BREEAM Bespoke scheme ensures that the set of sustainability issues and requirements are appropriate to the functions within the Proposed Development.
- 3.3 The BREEAM Bespoke protocol for the Proposed Development covers the following areas:
 - Logistics/ Receiving areas;
 - Entrance/Atrium:
 - Office Space: •
 - Meeting Rooms;
 - Security/BMS/ Fire control;
 - Training and Teaching facilities;
 - Seminar Rooms;
 - Conference Suite/ Lecture Theatre;
 - Cage wash/Autoclave areas;
 - Kitchen;
 - Cold Storage (non food);
 - Restaurant/ Seating; •
 - Write Up Areas/ Dry Laboratories;
 - Laboratories with Fume cupboards (Cat 2/3);
 - Workshops (manufacturing/ Engineering); •
 - Building Research Facilities (BRF); and
 - Glass Wash.

Assessment Criteria

- 3.4
- The Preliminary BREEAM Bespoke Assessment covers the following environmental performance issues:
 - Management: Commissioning, Considerate Constructors Scheme, construction site impacts (resource use, energy consumption, waste management and pollution), building user guide, consultation, security, and life cycle costing;
 - Health & Wellbeing: Daylighting, view out, glare control, high frequency lighting, internal and external lighting levels, lighting zones and controls, potential for natural ventilation, indoor air guality, Volatile Organic Compounds (VOCs), thermal comfort and zoning, legionella minimisation, acoustic performance, specification of laboratory fume cupboards and design of laboratory areas;

- and cyclist safety, travel plan and deliveries and manoeuvring;
- recycling and irrigation systems;
- insulation and design for robustness;
- compactor/baler and composting;
- ecology and long term impact on biodiversity; and
- 3.5

Within the BREEAM Bespoke 2008 framework, the above categories contain a number of specific issues against which the development is assessed. The total number of credits awarded per category is then multiplied by an environmental weighting factor, which differs depending on the impact the issue categories have on different local and global environments. The weightings of each category are shown in Table 3.1 and are derived from consensus-based research by various groups, such as the Government, the construction industry, and environmental lobbyists.

BREEAM Section	Weighting %	
Management	12	
Health & Wellbeing	15	
Energy	19	
Transport	8	
Water	6	
Materials	12.5	
Waste	7.5	
Land Use & Ecology	10	
Pollution	10	
Table 3.1 Environmental weightings of sustainable design areas		

• **Energy:** Reduction of CO₂ emissions, sub-metering of substantial energy uses and areas, external lighting, low and zero carbon technologies, building fabric performance, cold storage

Transport: Provision of public transport, proximity to amenities, cyclist facilities, pedestrian

• Water: Water consumption, water meter, major leak detection, sanitary supply shut-off, water

• Materials: Materials specifications for major building elements, hard landscaping and boundary protection, reuse of building facade and structure, responsible sourcing of materials,

Waste: Construction site waste management, recycled aggregates, recyclable waste storage,

 Land Use & Ecology: Reuse of land, remediation of contaminated land, ecological value of site and protection of ecological features, mitigation of ecological impact, enhancement of site

• Pollution: Refrigerant Global Warming Potential (GWP) for building services and cold storage, refrigerant leak prevention, NOx emissions from heating sources, flood risk, minimisation of watercourse pollution, reduction of night time light pollution and noise attenuation.