South West London & St George's Mental Health NHS Trust

Barnes Hospital

Sustainability Statement

ARP-226594-BH-SS-001

Issue 2 | 5 December 2018

Job number 226594-00

Ove Arup & Partners Ltd
13 Fitzroy Street
London
W1T 4BQ
United Kingdom
www.arup.com

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Contents

1 Executive Summary

This Sustainability statement has been produced to support the Outline planning application for the demolition and comprehensive redevelopment (phased development) of land at Barnes Hospital to provide a mixed use development comprising a health centre (Use Class D1), a Special Educational Needs (SEN) School (Use Class D1), up to 80 new build residential units (Use class C3), the conversion of two of the retained BTMs for use for up 3no. residential units (Use Class C3), the conversion of one BTM for medical use (Use Class D1), car parking, landscaping and associated works.

The development seeks to provide a positive contribution to sustainability, in accordance with national, regional and local planning policies, and will follow the London Borough of Richmond-Upon-Thames' adopted "Local Plan", with respect to:

- Energy and carbon reduction
- Sustainable construction
- Reduction in water use
- Protection and promotion of biodiversity
- Reduction of waste generation
- Wellbeing of occupants
- Environmental Impacts and Pollution
- Sustainable transport

The project will use sustainability measurement tools, such as BREEAM, to monitor its performance.

2 Introduction

2.1 General

The South West London and St. Georges Mental Health Trust (SWLStG) are intending to renovate their existing site at Barnes Hospital, in the London Borough of Richmond-Upon-Thames.

This document is intended to describe the approach to sustainability for the project, against the backdrop of national and local drivers, as well as voluntary aspirations of the Trust, to support an application for Outline Planning Permission for the development.

2.2 Site and Surrounding Area

Barnes Hospital is located on the south side of South Worple Way, East Sheen, London SW14, in the LB of Richmond upon Thames. As shown in Figure 1, the hospital site is bounded to the north by South Worple Way and the railway line which is located to the north of the South Worple Way, to the east by housing located along Buxton Road, to the south by housing located along Grosvenor Avenue, and to the west by Mortlake Cemetery.

The site area comprises 1.3 hectares and has relatively little street frontage along South Worple Way which is a narrow residential street. Most of the site perimeter borders the cemetery, and the back gardens of the housing dating from the late 19th Century located along Buxton Road and Grosvenor Avenue.

The majority of existing hospital buildings are one storey in height.

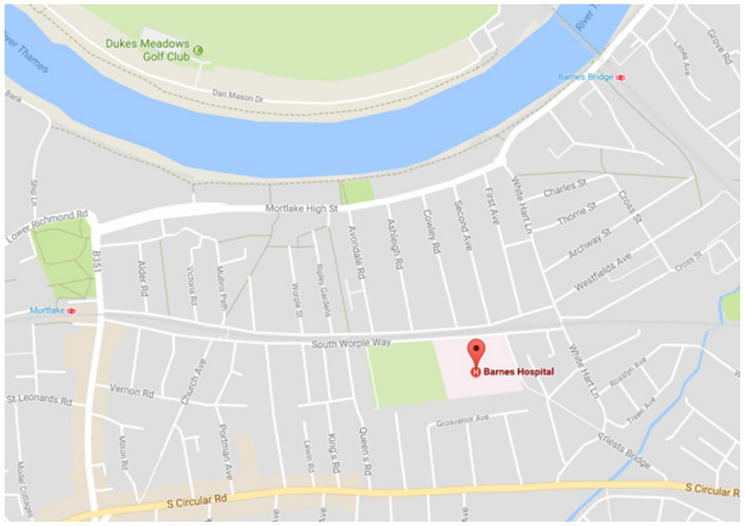


Figure 1 - Hospital Location

Barnes Hospital provides community outpatient and therapy services. The existing hospital is approximately 5,212m2 Gross External Area (GEA). The hospital comprises Block 'A' – Riverside Lodge, Block 'B' – Kingfisher Suite, Block 'C' – Main Building, Kitchen/Dining, Laundry House, Porters' Lodge, Mortuary, Generator House, Elizabeth Lodge, Recreational Hall/Workshop, Doctors' Residence, Fleming Dining Area, Fleming Lodge, Ballard Room, and Beatrice Lodge. The site is owned by South West London and St. George's Mental Health NHS Trust.

The site contains a number of buildings of varying ages with eight buildings identified by LB of Richmond upon Thames as being buildings of Townscape Merit (BTM) and the Trust is considering options for the re-development of the site.

2.3 Description of Proposed Development

Figure 2 - Developed Site boundary

The development of the site is split into three parts. The north-eastern portion of the site will be developed into a new healthcare building. The south-eastern section will be used for a new Special Education Needs (SEN) school. The eastern half of the site will be used for a number of residential units.

Figure 3 - Proposed Development

3 Approach to Sustainability

3.1 National Planning Policy

The National Planning Policy Framework (NPPF) replaced the suite of Planning Policy Statements and Guidance in 2012. At the heart of the NPPF is a "presumption in favour of sustainable development", which should be seen as a "golden thread" running through both plan-making and decision-taking.

The NPPF identifies three dimensions to sustainable development - economic, social and environmental – which should be applied jointly and simultaneously:

- Economic role – contributing to building a strong, responsive and competitive economy, by identifying and coordinating development requirements, including the provision of infrastructure;
- Social role – supporting strong, vibrant and healthy communities, by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being;
- Environmental role – contributing to protecting and enhancing our natural, built and historic environment. This includes helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change.

The NPPF promotes the pursuit of sustainable development by seeking positive improvements to the built and natural environment, and to people's quality of life. This will include:

- Improving the conditions in which people live, work, travel and take leisure
- Widening the choice of high quality homes
- Net gains for biodiversity.

3.2 Regional Planning Policy

THE LONDON PLAN 2016 (incorporating Changes made since 2011)

The London Plan is the overall strategic plan for London and sets out a fully integrated economic, environmental, transport and social framework for the development of the Capital to 2031. The first London Plan was published in 2004. Since then, several sets of alterations have been made to it, and the latest version was formally adopted in March 2016.
The sustainability strategy for the Barnes Hospital Re-Development has been designed to fully align with the objectives and aspirations of the London Plan, which sets out a comprehensive range of policies to underpin London's response to climate change, including underlying issues of resource management.

An overview of the key requirements is provided in the table:

POLICY	SUMMARY
Policy 5.2: Minimising CO2 Emissions	Develop an energy strategy based on the energy hierarchy of 'Be Lean – Be Clean – Be Green', and to achieve a minimum 40% carbon emissions improvement upon Building Regulations Part L for non-domestic building, and to achieve zero-carbon for residential buildings.
Policy 5.3: Sustainable Design and Construction	Development proposals should demonstrate that sustainable design standards are integral to the proposal, including its construction and operation, and ensure that they are considered at the beginning of the design process.
Policy 5.6: Decentralised Energy in Development Proposals	Development proposals should evaluate the feasibility of Combined Heat and Power (CHP) systems, and where a new CHP system is appropriate also examine opportunities to extend the system beyond the site boundary to adjacent sites.
Policy 5.7: Renewable Energy	Major developments should provide a reduction in expected CO2 emissions through the use of on-site renewable energy generation, where feasible to do so.
Policy 5.9: Overheating and Cooling	Major development proposals should reduce the potential for overheating and reliance on air conditioning systems and demonstrate this in accordance with the cooling hierarchy:
Policy 5.10: Urban Greening	Development proposals should integrate green infrastructure from the beginning of the design process to contribute to urban greening, including the public realm.
Policy 5.11: Green Roofs and Site Environments	Major development proposals should be designed to include roof, wall and site planting, especially green roofs and walls where feasible.
Policy 5.13: Sustainable Drainage	Development should utilise sustainable urban drainage systems (SUDS) unless there are practical reasons for not doing so, and should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible in line with the drainage hierarchy:
Policy 5.15: Water Use and Supplies	Development should minimise the use of mains water by: - incorporating water saving measures and equipment - designing residential development so that mains water consumption would meet a target of 105 litres or less per head per day.
Policy 7.2: An Inclusive Environment	Development should achieve the highest standards of accessible and inclusive design, and support the principles of inclusive behaviour.

Table 1 - Summary of key London Plan sustainable development policies

3.3 Local Planning Policy

The London Borough of Richmond-Upon-Thames' Local Plan, which was adopted in July 2018, sets out policy and guidance for the Borough for the next 15 years. It considers the Key Issues for the Borough that need to be addressed and details the implementation of policies that set out how this should happen.

Policies are as follows:

- Policy LP 1 Local Character and Design Quality
- Policy LP 2 Building Heights
- Policy LP 3 Designated Heritage Asset
- Policy LP 4 Non-Designated Heritage Assets
- Policy LP 5 Views and Vistas
- Policy LP 6 Royal Botanic Gardens, Kew World Heritage Site
- Policy LP 7 Archaeology
- Policy LP 8 Amenity and Living Conditions
- Policy LP 9 Floodlighting
- Policy LP 10 Local Environmental Impacts, Pollution and Land Contamination
- Policy LP 11 Subterranean developments and basements
- Policy LP 12 Green Infrastructure
- Policy LP 13 Green Belt, Metropolitan Open Land and Local Green Space
- Policy LP 14 Other Open Land of Townscape Importance
- Policy LP 15 Biodiversity
- Policy LP 16 Trees, Woodlands and Landscape
- Policy LP 17 Green roofs and walls
- Policy LP 18 River corridors
- Policy LP 19 Moorings and Floating Structures
- Policy LP 20 Climate Change Adaption
- Policy LP 21 Flood Risk and Sustainable Drainage
- Policy LP 22 Sustainable Design and Construction
- Policy LP 23 Water Resources and Infrastructure
- Policy LP 24 Waste Management
- Policy LP 25 Development in Centres
- Policy LP 26 Retail Frontages
- Policy LP 27 Local shops and services
- Policy LP 28 Social and Community Infrastructure
- Policy LP 29 Education and Training Policy
- LP 30 Health and Wellbeing
- Policy LP 31 Public Open Space, Play Space, Sport and Recreation
- Policy LP 32 Allotments and food growing spaces
- Policy LP 33 Telecommunications
- Policy LP 34 New Housing
- Policy LP 35 Housing Mix and Standards
- Policy LP 36 Affordable Housing
- Policy LP 37 Housing Needs of Different Groups
- Policy LP 38 Loss of Housing
- Policy LP 39 Infill, Backland and Backgarden Development
- Policy LP 40 Employment and local economy
- Policy LP 41 Offices
- Policy LP 42 Industrial Land and Business Parks
- Policy LP 43 Visitor Economy
- Policy LP 44 Sustainable Travel Choices
- Policy LP 45 Parking Standards and Servicing

The approach of this development to address the requirements of these policies is discussed in section 4.

3.4 Sustainability Measurement Tools

3.4.1 BREEAM

Both the Trust and LBRUT have a requirement to achieve BREEAM “Excellent” for all new non-domestic buildings.

The new healthcare premises and the SEN School will be registered and monitored against this scheme (currently BREEAM New Construction 2018), and a rating of “Excellent” will be targeted.

An accredited BREEAM professional (BREEAM AP) has been appointed at the earliest stages of the project, to advise the design team and ensure that the highest possible BREEAM rating can be achieved.

A BREEAM pre-assessment report, outlining the development’s route to BREEAM “Excellent” is included in Appendix B.

3.4.2 Code for Sustainable Homes

The Code for Sustainable Homes was introduced in 2007 and became a mandatory requirement for new homes in some boroughs.

In March 2015, following a fundamental review of technical housing standards, the government withdrew the Code, aside from the management of legacy cases.

In a written ministerial statement on 25 March 2015, the Secretary of State for Communities and Local Government confirmed that local authorities in England could no longer require code level 3, 4, 5 or 6, as part of conditions imposed on planning applications.

Instead, energy requirements for dwellings would be set by the Building Regulations, which were changed to be equivalent to Code Level 4.

4 Sustainability Principles

4.1 Energy and Carbon Reduction

LBRUT's LP22 requires a 35% reduction in carbon emissions through a series of measures, including connection to a local decentralised energy network wherever feasible, and for larger developments to assess the potential for a combined heat and power (CHP) system coupled with a heat network.

The new development will seek to reduce its energy consumption by the use of passive design measures to reduce the heating and cooling loads of the building, whilst maximising the use of natural light. Natural ventilation will be used wherever possible, whilst maintaining acceptable internal conditions for occupants.

The development will then aim to meet a high percentage of its remaining energy needs through the use of renewable technologies.

High efficiency lighting will be specified throughout.

There is no nearby district heating scheme to which the development could connect. It is proposed to use a combination of combined heat and power (CHP) and high efficiency boilers, to provide heating to the development. There will also be a significant provision of photo-voltaic panels to generate supplementary electricity.

The new residential blocks will be served by a communal heating system, and the health centre and school will have individual heating systems.

More details can be found in the energy strategy report.

4.2 Effective use of Land

The LBRUT's local plan includes a Spatial Strategy, which seeks to maximise the use of brownfield sites for residential development, and to protect greenfield sites.

The existing site at Barnes Hospital has been previously fully developed and the proposed development envelope falls entirely within this developed site boundary.

The development will provide residential dwellings, a new healthcare facility and a SEN School.

4.3 Sustainable Construction

Policy LP22 requires developments to achieve the highest standards of sustainable development and construction.

The development will seek sustainable construction methods, wherever they are feasible. These will include:

- Re-use of demolition materials on the site.
- Use of materials with recycled content
- Use of materials that have a low environmental impact (Green Guide Rating A or above)
- Use of materials from sustainable sources
- Selection of materials using life cycle analysis
- Specification of insulation products with zero ozone depletion potential (ODP) or global warming potential (GWP)
- Design to accommodate potential future changes in use of the facilities

4.4 Water Management

The development is situated in a low flood risk area, and measures will be included in the development to ensure that the burden on local drainage system is not increased, in line with Policy LP21 (Flood Risk & Sustainable Drainage) and LP23 (Water Resources and Infrastructure). Measures that will be considered include:

- Permeable paving to allow local infiltration of surface water
- Natural attenuation measures such as green roofs and ponds
- Sustainable urban drainage systems (SUDS) to attenuate the runoff water
- Re-use of rain and grey water on site
- Specification of low water use fittings and equipment
- Water monitoring and leak detection

A daily water consumption of 105l/day/person will be targeted for the dwellings to be achieved through the provision of low flow sanitary fixtures and fittings.

4.5 Pollution and Local Impacts

Policy LP10 states that development proposals should not lead to detrimental effects on health and wellbeing due to factors such as noise, air and light pollution, vibration, odour and fumes.

Pollution from the construction and operation of the building will be minimised using the following methods:

Air Quality:

- Best practice dust prevention measures will be adopted during construction
- Heat generating equipment will be selected to emit low levels of nitrous oxides (NOx)

An air quality assessment will be undertaken and will form part of the Environmental Impact Assessment

Noise:

- Initial noise measurements will be taken prior to the development, to ensure that these levels are not exceeded by the proposals
- Post-completion measurement will be taken and, where necessary, attenuation measures will be provided to meet the noise limits.
- Careful siting of noisy activities (refuse collections, etc) will minimise the effect on neighbouring residences.

Light:

- All new lighting provided on the site will be timer controlled
- All lighting design will comply with best practise to prevent light pollution affecting neighbours

Watercourse Pollution:

- Drainage from potential source of pollution, e.g. car park areas, etc, will be provided with petrol interceptors to protect watercourses downstream of the site.

4.6 Waste

LBRUT's Policy LP24 seeks to encourage reduction in waste generation and adequate management of waste.

4.6.1 Construction Waste

The development will seek to minimise the waste generated during its construction by pursuit of the following measures:

- Specification of construction practices that minimise off-cuts and other waste generation
- Maximising opportunities for off-site pre-fabrication and design for manufacture
- Segregation of site generated waste to maximise recycling and diversion from landfill

A pre-demolition audit will be produced and demolition materials will be utilised on site if and where feasible, e.g. the use of crushed bricks and concrete.

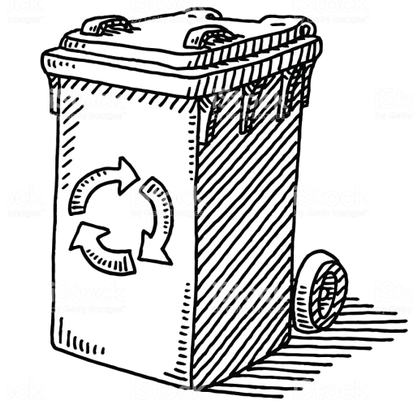
A Site Resource Management Plan will be drafted during design and later completed by the appointed contractor, including the following:

- Setting of a target benchmark for resource efficiency
- Procedures and commitments for minimising non-hazardous waste in line with the benchmark
- Procedures for minimising hazardous waste
- Procedures for monitoring, measuring and reporting hazardous and non-hazardous site waste
- Procedures for sorting, reusing and recycling construction waste into defined waste groups.

4.6.2 Operational Waste

Facilities will also be provided so that waste streams can be carefully segregated at source, once the building is operational.

In additional to this, all materials will be designed for durability, to minimise the need for replacement during the development's life.



4.7 Health and Wellbeing

The health and wellbeing of building occupants will be promoted, in line with Policy LP30, using the following measures:

- Encouraging healthy transport options such as walking and cycling
- Maximising the use of natural daylight and external views for occupants
- Promoting good air quality through the use of high levels of ventilation and through specification of materials that do not emit Volatile Organic Compounds (VOCs) or formaldehyde
- Providing safe site access to pedestrians and cyclists
- Provided outdoor amenity space
- Incorporating security measures into the design

4.8 Biodiversity

Policies LP12 and LP15 seek to ensure developments contribute to the Borough's existing network of green spaces and biodiversity, and protect and enhance existing natural features. Policy LP16 seeks to protect existing trees.

There are a number of existing trees on site and the development will seek to allow these to remain where possible.

In addition, a number of new trees and other plants will be introduced to the site, and green roofs will be considered.

Before any works take place, a full ecological survey will be carried out to establish the baseline ecology for the site, and to identify any existing features that require protection during the works.

The timing of any demolition works would be scheduled to avoid the bird nesting season.

4.9 Transportation and Accessibility

The development will seek to minimise car parking, whilst still providing adequate provision for the site, to alleviate any burden on the surrounding streets.

Priority car parking spaces for car sharers and electric car charging points will be considered.

Facilities for cyclists will be provided on the site to encourage this mode of transport. Covered cycle stores will be provided for residents, and for staff and visitors to the healthcare facilities.

An assessment of the existing public transport has been carried out. The public transport accessibility level (PTAL) for the site is 2.

The site layout will include segregated cycle paths and safe pedestrian walkways and crossing points, to encourage the use of alternate means of transport.

All pedestrian walkways, building access routes, etc, will accommodate wheelchair users, and other impaired persons, to ensure the site is accessible to all.

4.10 Climate Change Adaptation and Mitigation

The effects of climate change can already be seen in UK weather patterns and it is prudent to consider the likely impact of changes on new developments. Taking action to mitigate the effects will help future proof the new buildings, providing longevity and flexibility to the development and making it an attractive place to live, regardless of the climate.

Particularly relevant for London is the urban heat island effect. This is the term given to the observed higher temperatures in cities and towns in comparison to rural areas. The predicted impact of climate change is to make the world warmer, particularly summers, which would exacerbate the urban heat island effect in London.

The London Plan requires measures for climate change adaptation to be included in designs for new developments. This encompasses avoiding overheating in future, mitigating the impact of the urban heat island effect and ensuring that increased incidences of intense rainfall can be properly managed.

The Mayor's SPG on Sustainable Design and Construction includes the following requirements for adapting to climate change:

- Buildings provide for flexibility of uses during their projected operational lives.
- Buildings adapted to and mitigate for the effects of the urban heat island and the expected increases in hot dry summers and wet mild winters.
- Using Sustainable Urban Drainage Systems (SUDS) where possible.

LBRUT Policy LP20 states that developments should minimise impacts of climate changeover its lifetime by considering factors such as:

- Water conservation and drainage
- The need for Summer cooling
- Risk of subsidence
- Flood risk from the River Thames and its tributaries
- Rising air temperatures
- Heavier rainfall
- Overheating

Early in the design stage a climate change adaptation strategy will be developed, which will outline the opportunities to incorporate measures into the building design to account for future changes in climate and its effects on the building.

This strategy will identify the necessary design parameters to be carried forward into the design.

A thermal comfort study will also be carried out and this, too, will take account of the projected effects of climate change.

Where possible the development will make use of external materials that have a low albedo and high conductivity (like grass or concrete). These will be advantageous to a building's climate resilience since they store heat energy which is then re-radiated at night when it is cooler.

Appendix A

Sustainable Construction Checklist

LBRUT Sustainable Construction Checklist - January 2016

This document forms part of the Sustainable Construction Checklist SPD. This document **must** be filled out as part of the planning application for the following developments: all residential development providing **one or more new residential units (including conversions leading to one or more new units)**, and all other forms of development providing **100sqm or more of non-residential floor space**. Developments including new non-residential development of less than 100sqm floor space, extensions less than 100sqm, and other conversions are strongly encouraged to comply with this checklist. Where further information is requested, please either fill in the relevant section, or refer to the document where this information may be found in detail, e.g. Flood Risk Assessment or similar. **Further guidance** on completing the Checklist may be found in the Justification and Guidance section of this SPD.

Property Name (if relevant): Barnes Hospital

Application No. (if known):

Address (include. postcode): South Worple Way, London, Barnes SW14 8SU

Completed by: Nick Olson, Arup

For Non-Residential
Size of development (m2): 5785

For Residential
Number of dwellings: 86

1 MINIMUM COMPLIANCE (RESIDENTIAL AND NON-RESIDENTIAL)

Energy Assessment

Has an energy assessment been submitted that demonstrates the expected energy and carbon dioxide emissions saving from energy efficiency and renewable energy measures, including the feasibility of CHP/CCHP and community heating systems? If yes, please tick. Yes

Carbon Dioxide emissions reduction

What is the carbon dioxide emissions reduction against a Building Regulations Part L (2013) baseline

Policy DM SD 1 and London Plan Policy 5.2 (2015) require a 35% reduction in CO_2 emissions beyond Building Regulations 2013.

Percentage of **total** site CO2 emissions saved through renewable energy installation?

1A MINIMUM POLICY COMPLIANCE (NON-RESIDENTIAL AND DOMESTIC REFURBISHMENT)

Please check the Guidance Section of this SPD for the policy requirements

Environmental Rating of development:

Non-Residential new-build (100sqm or more)			
BREEAM Level	Excellent	Have you attached a pre-assessment to support this?	☑
Extensions and conversions for residential dwellings			
BREEAM Domestic Refurbishment	Very Good	Have you attached a pre-assessment to support this?	☐
Extensions and conversions for non-residential buildings			
BREEAM Level	Very Good	Have you attached a pre-assessment to support this?	☐

Score awarded for Environmental Rating:

BREEAM: Good = *0*, Very Good = 4, Excellent = *8*, Outstanding = *16*

Subtotal 8

1B MINIMUM POLICY COMPLIANCE (RESIDENTIAL)

Water Usage

Internal water usage limited to 105 litres person per day. (Excluding an allowance 5 litres per person per day for external water consumption). Calculations using the water efficiency calculator for new dwellings have been submitted. ☐ *1*

Subtotal 0

2. ENERGY USE AND POLLUTION

2.1 Need for Cooling — *Score*

a. How does the development incorporate cooling measures? Tick all that apply:

Energy efficient design incorporating specific heat demand to less than or equal to 15 kWh/sqm	☐	*6*
Reduce heat entering a building through providng/improving insulation and living roofs and walls	☑	*2*
Reduce heat entering a building through shading	☑	*3*
Exposed thermal mass and high ceilings	☐	*4*
Passive ventilation	☑	*3*
Mechanical ventilation with heat recovery	☑	*1*
Active cooling systems, i.e. Air Conditioning Unit	☑	*0*

2.2 Heat Generation

b. How have the heating and cooling systems, with preference to the heating system hierarchy, been selected (defined in London Plan policy **5.6**)? Tick all heating and cooling systems that will be used in the development:

Connection to existing heating or cooling networks powered by renewable energy	☐	*6*
Connection to existing heating or cooling networks powered by gas or electricity	☐	*5*
Site wide CHP network powered by renewable energy	☐	*4*
Site wide CHP network powered by gas	☐	*3*
Communal heating and cooling powered by renewable energy	☑	*2*
Communal heating and cooling powered by gas or electricity	☑	*1*
Individual heating and cooling	☑	*0*

2.3 Pollution: Air, Noise and Light

a. Does the development plan to implement reduction strategies for dust emissions from construction sites? ☑ *2*

b. Does the development plan include a biomass boiler? ☐ -

If yes, please refer to the biomass guidelines for the Borough of Richmond, please see guidance for supplementary information. If the proposed boiler is of a qualifying size, you may need to completed the information request form found on the Richmond website. ☐ -

c. Please tick only one option below

Has the development taken measures to reduce existing noise and enhance the existing soundscape of the site?	☐	*3*
Has the development taken care to not create any new noise generation/transmission issues in its intended operation?	☑	*1*

d. Has the development taken measures to reduce light pollution impacts on character, residential amenity and biodiversity? ☑ *3*

e. Have you attached a Lighting Pollution Report? ☐ -

Subtotal 18

Please give any additional relevant comments to the Energy Use and Pollution Section below

3. TRANSPORT

3.1 Provision for the safe efficient and sustainable movement of people and goods

a. Does your development provide opportunities for occupants to use innovative travel technologies?

Please explain:

b. Does your development include charging point(s) for electric cars? ☑ *2*

c. **For major developments ONLY**: Has a Transport Assessment been produced for your development based on TfL's Best Practice Guidance?

If you have provided a Transport Assessment as part of your planning application, please tick here and move to Section 3 of this Checklist. ☑ *5*

d. **For smaller developments ONLY**: Have you provided a Transport Statement? ☐ *5*

e. Does your development provide cycle storage? (Standard space requirements are set out in the the Council's Parking Standards - DM DPD Appendix 4) ☑ *2*

If so, for how many bicycles?

Is this shown on the site plans? ☐ -

f. Will the development create or improve links with local and wider transport networks? If yes, please provide details. ☐ *2*

Subtotal 9

Please give any additional relevant comments to the Transport Section below

4 BIODIVERSITY

4.1 Minimising the threat to biodiversity from new buildings, lighting, hard surfacing and people

a. Does your development involve the loss of an ecological feature or habitat, including a loss of garden or other green space? (Indicate if yes) ☐ -2

If so, please state how much in sqm? ____ sqm

b. Does your development involve the removal of any tree(s)? (Indicate if yes) ☑

If so, has a tree report been provided in support of your application? (Indicate if yes) ☑

c. Does your development plan to add (and not remove) any tree(s) on site? (Indicate if yes) ☐

d. Please indicate which features and/or habitats that your development will incorporate to improve on site biodiversity:

Pond, reedbed or extensive native planting	6	☐	Area provided:	sqm
An extensive green roof	5	☐	Area provided:	sqm
An intensive green roof	4	☑	Area provided:	sqm
Garden space	4	☑	Area provided:	sqm
Additional native and/or wildlife friendly planting to peripheral areas	3	☑	Area provided:	sqm
Additional planting to peripheral areas	2	☐	Area provided:	sqm
A living wall	2	☐	Area provided:	sqm
Bat boxes	0.5	☑		
Bird boxes	0.5	☑		
Other	0.5	☐		

Subtotal 12

Please give any additional relevant comments to the Biodiversity Section below

5 FLOODING AND DRAINAGE

5.1 Mitigating the risks of flooding and other impacts of climate change in the borough

a. Is your site located in a high flood risk zone (Zone 3)? (Indicate if yes) ☐ -2

Have you submitted a Flood Risk Assessment? (Indicate if yes) ☑ -

b. Which of the following measures of the drainage hierarchy are incorporated onto your site? (tick all that apply)

Store rainwater for later use	☑	5
Use of infiltration techniques such as porous surfacing materials to allow drainage on-site	☑	3
Attenuate rainwater in ponds or open water features	☐	4
Store rainwater in tanks for gradual release to a watercourse	☐	3
Discharge rainwater directly to watercourse	☐	2
Discharge rainwater to surface water drain	☑	1
Discharge rainwater to combined sewer	☐	0

c. Please give the change in area of permeable surfacing which will result from your development proposal: ____ sqm

Please provide details of the permeable surfacing below *please represent a loss in permeable area as a negative number*

Subtotal 9

Please give any additional relevant comments to the Flooding and Drainage Section below

6 IMPROVING RESOURCE EFFICIENCY

6.1 Reduce waste generated and amount disposed of by landfill though increasing level of re-use and recycling

a. Will demolition be required on your site prior to construction? *[Points will only be awarded if 10% or greater of demolition waste is reused/recycled]* ☑ 1

If so, what percentage of demolition waste will be reused in the new development? 10 %

What percentage of demolition waste will be recycled? 10 %

b. Does your site have any contaminated land? ☐ 1

Have you submitted an assessment of the site contamination? ☑ 2

Are plans in place to remediate the contamination? ☑ 2

Have you submitted a remediation plan? ☐ 1

Are plans in place to include composting on site? ☐ 1

6.2 Reducing levels of water waste

a. Will the following measures of water conservation be incorporated into the development? (Please tick all that apply):

Fitting of water efficient taps, shower heads etc	☑	1
Use of water efficient A or B rated appliances	☑	1
Rainwater harvesting for internal use	☐	4
Greywater systems	☑	4
Fit a water meter	☑	1

Subtotal 12

Please give any additional relevant comments to the Improving Resource Efficiency Section below

7 ACCESSIBILITY

7.1 Ensure flexible adaptable and long-term use of structures

a. **If the development is residential,** will it meet the requirements of the nationally described space standard for internal space and layout? ☑ *1*

If the standards are not met, in the space below, please provide details of the functionality of the internal space and layout

AND

b. **If the development is residential**, will it meet Building Regulation Requirement M4 (2) 'accessible and adaptable dwellings'? ☑ *2*

If this is not met, in the space below, please provide details of any accessibility measures included in the development.

For major residential developments, are 10% or more of the units in the development to Building Regulation Requirement M4 (3) 'wheelchair user dwellings'? ☑ *1*

OR

c. **If the development is non-residential,** does it comply with requirements included in Richmond's Design for Maximum Access SPG ☑ *2*

Please provide details of the accessibility measures specified in the Maximum Access SPG that will be included in the development

Subtotal 6

Please give any additional relevant comments to the Design Standards and Accessibility Section below

LBRUT Sustainable Construction Checklist- Scoring Matrix for *New Construction* **(Non-Residential and domestic refurb)**

TOTAL ***74***

Score	Rating	Significance
80 or more	*A+*	Project strives to achieve highest standard in energy efficient sustainable development
71-79	*A*	Makes a major contribution towards achieving sustainable development in Richmond
51-70	*B*	Helps to significantly improve the Borough's stock of sustainable developments
36-50	*C*	Minimal effort to increase sustainability beyond general compliance
35 or less	*FAIL*	Does not comply with SPD Policy

LBRUT Sustainable Construction Checklist- Scoring Matrix for New Construction **Residential new-build**

Score	Rating	Significance
81 or more	**A++**	Project strives to achieve highest standard in energy efficient sustainable development
64-80	*A+*	Project strives to achieve highest standard in energy efficient sustainable development
55-63	*A*	Makes a major contribution towards achieving sustainable development in Richmond
35-54	*B*	Helps to significantly improve the Borough's stock of sustainable developments
20-34	*C*	Minimal effort to increase sustainability beyond general compliance
19 or less	*FAIL*	Does not comply with SPD Policy

Authorisation:

I herewith declare that I have filled in this form to the best of my knowledge

Signature _____ Date _____

Appendix B

BREEAM Pre-Assessment Estimation

Assessment report: Barnes Hospital Pre-Assessment

Site name: Barnes Hospital

Client name:

Date: 7/8/2018

Assessment ref: BRPA01

Assessment details

Assessment references

Registration number:	BRPA01	**Date created:**	7/8/2018
Created by:	Nick Olson		
Architect name:	Squires and Partners		
Developer name:	TBC		
Property owner	South West London and St. Georges Mental Health Trust		

Site details

Site name:	Barnes Hospital
Address:	
Town:	
County:	
Post code:	
Country:	

Certificate details

The certificate will have the name of the architect (if entered above) and the name of the developer (from above).

Any other names to appear on the certificate are listed below:

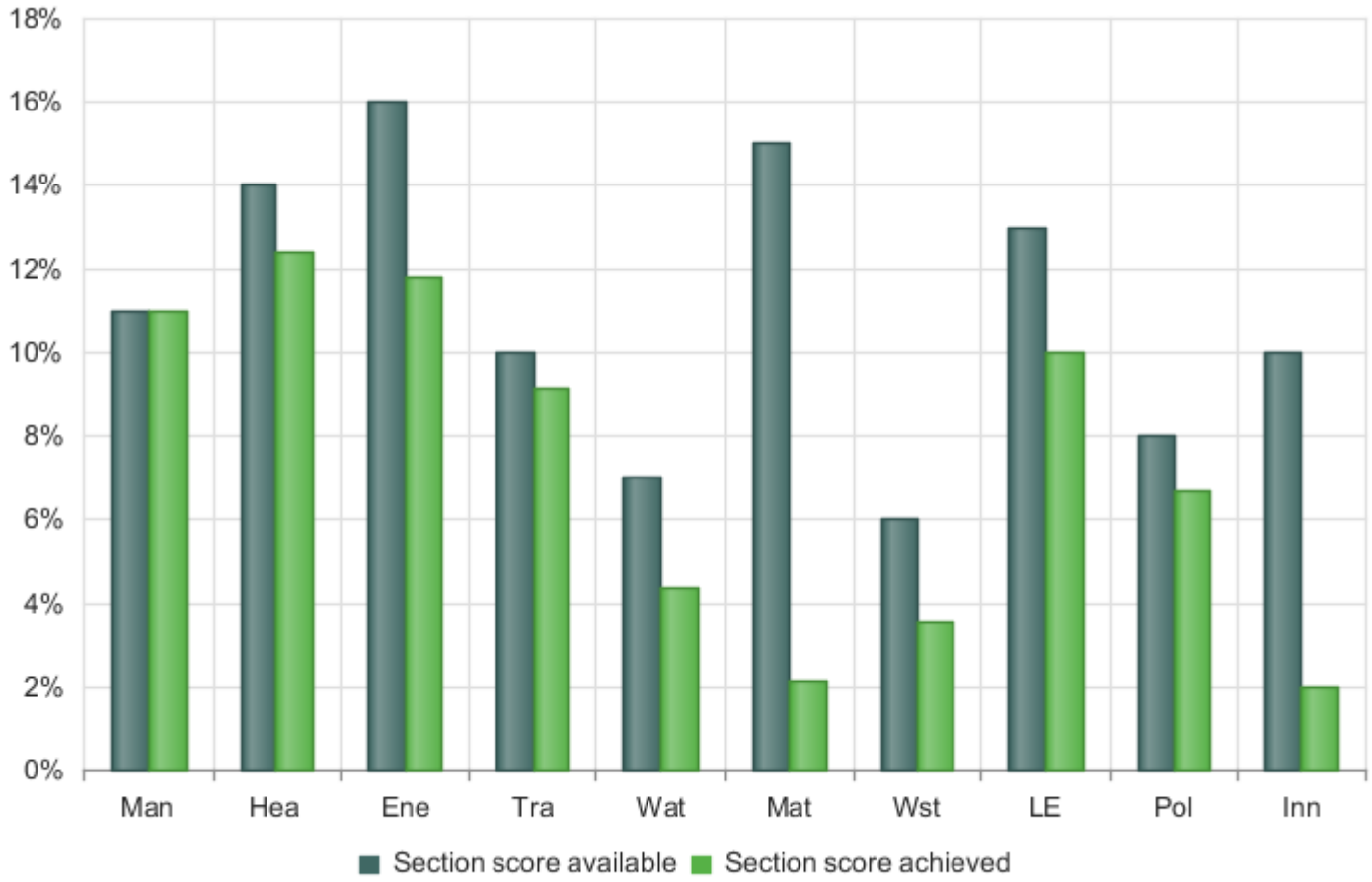
Name	Label

BREEAM rating

BREEAM Rating

	Credits available	Credits achieved	% Credits achieved	Weighting	Category score
Man	21.0	21.0	100.00%	11.00%	11.00%
Hea	18.0	16.0	88.89%	14.00%	12.44%
Ene	23.0	17.0	73.91%	16.00%	11.82%
Tra	12.0	11.0	91.67%	10.00%	9.16%
Wat	8.0	5.0	62.50%	7.00%	4.37%
Mat	14.0	2.0	14.29%	15.00%	2.14%
Wst	10.0	6.0	60.00%	6.00%	3.59%
LE	13.0	10.0	76.92%	13.00%	10.00%
Pol	12.0	10.0	83.33%	8.00%	6.66%
Inn	10.0	2.0	20.00%	10.00%	2.00%
Total	141.0	100.0	70.92%	-	73.22%
Rating	-	-	-	-	Excellent

Performance by environmental category



Issue scores

Please Note: X means the exemplary credit for the relevant issue

Management

Man01 Project Brief and design	Man02 Life cycle cost and service life planning	Man03 Responsible construction practices	Man04 Commissioning and handover	Man05 Aftercare
4 / 4	4 / 4	6 / 6 X: 0 / 1	4 / 4	3 / 3

Health and Wellbeing

Hea01 Visual comfort	Hea02 Indoor air quality	Hea04 Thermal comfort	Hea05 Acoustic performance	Hea06 Security	Hea07 Safe and Healthy Surroundings
4 / 5 X: 0 / 2	3 / 4 X: 0 / 1	3 / 3	3 / 3	1 / 1 X: 0 / 1	2 / 2

Energy

Ene01 Reduction of energy use and carbon emissions	Ene02 Energy monitoring	Ene03 External lighting	Ene04 Low carbon design	Ene05 Energy efficient cold storage	Ene06 Energy efficient transportation systems	Ene07 Energy efficient laboratory systems	Ene08 Energy efficient equipment
8 / 13 X: 2 / 5	2 / 2	1 / 1	2 / 3	N/A	2 / 2	N/A	2 / 2

Transport

Tra01 Transport assessment and travel plan	Tra02 Sustainable transport measures
2 / 2	9 / 10

Water

Wat01 Water consumption	Wat02 Water monitoring	Wat03 Water leak detection	Wat04 Water efficient equipment
2 / 5 X: 0 / 1	1 / 1	2 / 2	N/A

Materials

Mat01 Life cycle impacts	Mat02 Environmental impacts from construction products	Mat03 Responsible sourcing	Mat05 Designing for durability and resilience	Mat06 Material efficiency
0 / 7 X: 0 / 3	0 / 1	0 / 4 X: 0 / 1	1 / 1	1 / 1

Waste

Wst01 Construction waste management	Wst02 Use of recycled and sustainably sourced aggregates	Wst03 Operational waste	Wst04 Speculative finishes (Offices only)	Wst05 Adaptation to climate change	Wst06 Design for disassembly and adaptability
3 / 5 X: 0 / 1	0 / 1 X: 0 / 1	1 / 1	N/A	1 / 1 X: 0 / 1	1 / 2

Land use and ecology

LE01 Site selection	LE02 Identifying and understanding the risks and opportunities for the site	LE03 Managing negative impacts on ecology	LE04 Change and enhancement of ecological value	LE05 Long term impact on biodiversity
1 / 2	2 / 2 X: 0 / 1	3 / 3	3 / 4 X: 0 / 1	1 / 2

Pollution

Pol01 Impact of refrigerants	Pol02 Local air quality	Pol03 Flood risk management and reducing surface water run-off	Pol04 Reduction of Night Time Light Pollution	Pol05 Noise attenuation
2 / 3	1 / 2	5 / 5	1 / 1	1 / 1

Innovation

Inn01
Innovation

0 / 0
X: 0 / 10

Initial details

Initial details

Technical manual issue number : Issue 1.2

Project scope : Fully fitted

Building type (main description) : Healthcare

Sub-group : Community and mental health hospitals

Does this healthcare building have inpatient areas? : No

Assessment stage : Design (interim)

Building floor area (GIA) : 2500 m^2

Building floor area (NIFA) : 2300 m^2

Is the building designed to be untreated? : No

Building services - heating system type : Wet system

Building services - cooling system type : Comfort cooling

Are commercial or industrial-sized refrigeration and storage systems specified? : No

Are building user lifts present? : Yes

Are building user escalators or moving walks present? : No

Are laboratories present? : No

Are there fume cupboard(s) and/or other containment devices present? : No

Are there any water demands present other than those assessed in Wat 01? : No

Does the building have external areas within the boundary of the assessed development? : Yes

Are there statutory requirements, or other issues outside of the control of the project, that impact the ability to provide outdoor space : No

Are there any systems specified that contribute to the unregulated energy load? : Yes

Are the Post-occupancy stage credits targeted in Ene 01 issue? : No

Category assessment

Management | Man

Man 01 Project Brief and design

To optimise final building design through recognising and encouraging an integrated design process and robust stakeholder engagement.

Site :

ASSESSMENT CRITERIA	
Project delivery planning :	Yes
Stakeholder consultation (interested parties) :	Yes
Prerequisite: Have the client and the contractor formally agreed performance targets? :	Yes
BREEAM Advisory Professional (Concept Design) :	Yes
BREEAM Advisory Professional (Developed Design) :	Yes

Credits awarded : 4.0

Comments :
Roles and responsibilities to be formally agreed prior to end of Concept Design Completion.
Stakeholder consultation must be carried out by an independent 3rd party.
BREEAM AP to be employed from beginning of Concept Design.

Man 02 Life cycle cost and service life planning

To promote the business case for sustainable buildings and to deliver whole life value by encouraging the use of life cycle costing to improve design, specification, through-life maintenance and operation.

Site :

ASSESSMENT CRITERIA	
Elemental LCC :	Yes
Component level LCC options appraisal :	Yes
Capital cost reporting :	Yes
Capital cost of the project :	2000 Â£k/m^2

Credits awarded : 4.0

Comments :
LCC must be carried out at RIBA Stage 2
Note: Cost specified above is example only

Man 03 Responsible construction practices

To recognise and encourage construction sites which are managed in an environmentally and socially considerate, responsible and accountable manner.

Site :

ASSESSMENT CRITERIA	
Prerequisite: Are all timber and timber-based products used during the construction process of the project 'legally harvested and traded timber'? :	Yes

Prerequisite: Does the party managing the construction site operate an Environmental Management System? :	Yes
Environmental management :	Yes
Prerequisite: Have the client and the contractor formally agreed performance targets? :	Yes
BREEAM Advisory Professional (site) :	Yes
Responsible construction management :	2
Monitoring of construction site impacts :	Yes
Utility consumption :	Yes
Transport of construction materials and waste :	Yes
Exemplary level criteria - Responsible construction management :	No

KEY PERFORMANCE INDICATORS: CONSTRUCTION SITE ENERGY USE

Energy consumption (total) - site processes :	100 kWh
Energy consumption (intensity) - site processes :	100 kWh/project value

KEY PERFORMANCE INDICATORS: CONSTRUCTION SITE GREENHOUSE GAS EMISSIONS

Process greenhouse gas emissions (total) - site processes :	100 $KgCO_2eq$
Carbon dioxide emissions (intensity) - site processes :	100 $KgCO_2eq$/project value

Credits awarded : 6.0

Comments :
Values above are examples only

Man 04 Commissioning and handover

To encourage a properly planned handover and commissioning process that reflects the needs of the building occupants.

Site :

ASSESSMENT CRITERIA

Commissioning testing schedule and responsibilities :	Yes
Commissioning - design and preparation :	Yes
Testing and inspecting building fabric :	Yes
Handover - have a technical and a non-technical building user guide been developed prior to handover? :	Yes
Handover - have a technical and a non-technical training schedule been prepared around handover? :	Yes

Credits awarded : 4.0

Comments :
Two separate user guides and training schedules required.

Man 05 Aftercare

To ensure the building operates in accordance with the design intent and operational demands, through providing aftercare to the building owner and occupants during the first year of occupation.

Site :

ASSESSMENT CRITERIA

Is this a speculative development? :	No
Aftercare support :	Yes
Commissioning - implementation :	Yes
Post occupancy evaluation :	Yes
The client or building occupier commits funds to pay for the POE in advance. :	Yes

Credits awarded : 3.0

Hea 01 Visual comfort

To encourage best practice in visual performance and comfort by ensuring daylighting, artificial lighting and occupant controls are considered.

Site :

ASSESSMENT CRITERIA	
Control of glare from sunlight :	Yes
Daylighting (building type dependent) :	1
View Out :	Yes
Internal and external lighting levels, zoning and controls :	Yes
Exemplary level criteria - Daylighting :	No
Exemplary level criteria- Internal and external lighting levels, zoning and control :	No

Credits awarded : 4.0

Hea 02 Indoor air quality

To encourage and support healthy internal environments with good indoor air quality.

Site :

ASSESSMENT CRITERIA	
Pre requisite: Indoor air quality (IAQ) plan :	Yes
Ventilation :	Yes
Emissions from building products :	1
Post-construction indoor air quality measurement :	Yes
Exemplary level criteria- Emissions from building products :	

KEY PERFORMANCE INDICATORS	
Formaldehyde concentration :	100 Î¼g/m^3
Total volatile organic compound (TVOC) concentration :	100 Î¼g/m^3

Credits awarded : 3.0

Hea 04 Thermal comfort

To ensure the building is capable of providing an appropriate level of thermal comfort.

Site :

ASSESSMENT CRITERIA	
Thermal modelling :	Yes
Design for future thermal comfort :	Yes
Thermal zoning and controls :	Yes

KEY PERFORMANCE INDICATORS

PMV and PPD Indices :

Credits awarded : 3.0

Hea 05 Acoustic performance

To ensure the building is capable of providing an appropriate acoustic environment to provide comfort for building users.

Site :

ASSESSMENT CRITERIA

Criteria performance requirements or SQA bespoke requirements? :	Criteria performance requirements
Sound insulation :	1
Indoor ambient noise level :	Yes
Room acoustics :	Yes

Credits awarded : 3.0

Hea 06 Security

To encourage the planning and implementation of effective measures that provide an appropriate level of security to the building and site.

Site :

ASSESSMENT CRITERIA

Security of site and building :	Yes
Exemplary level criteria :	

Credits awarded : 1.0

Comments :
Security Specialist needs to be appointed by RIBA Stage 2

Hea 07 Safe and Healthy Surroundings

To encourage the provision of safe access around the site and outdoor space that enhances the wellbeing of building users. .

Site :

ASSESSMENT CRITERIA

Safe Access :	Yes
Outside Space :	Yes

Credits awarded : 2.0

Comments :
Safe (segregated) site access required for cyclists and pedestrians.
External amenity area required

Ene 01 Reduction of energy use and carbon emissions

To minimise operational energy demand, primary energy consumption and CO2 emissions.

Site :

ASSESSMENT CRITERIA	
Country :	England
Actual building energy demand :	80 MJ/m^2 yr
Notional building energy demand :	100 MJ/m^2 yr
Actual building primary energy consumption :	80 kWh/m^2 yr
Notional building primary energy consumption :	100 kWh/m^2 yr
Actual building CO_2-eq emissions (BER) :	80 KgCO_2-eq/m^2 yr
Notional building CO_2-eq emissions (TER) :	100 KgCO_2-eq/m^2 yr

BUILDING SCORE	
Total BREEAM credits achieved :	4.0
Heating and cooling demand energy performance ratio (EPRdem) :	0.15
Primary consumption energy performance ratio (EPRpc) :	0.194
CO_2-eq energy performance ratio (EPRco2-eq) :	0.142
Overall building energy performance ratio (EPRnc) :	0.486
% improvement BER/TER :	20.0 %
Calculate score :	

ASSESSMENT CRITERIA (EXEMPLARY CREDITS)	
Zero net CO_2-eq emissions :	
Equivalent % of additional emissions from unregulated energy that are offset by LZC sources :	
Is the building designed to be carbon negative? :	
If the building is defined as 'carbon negative' what is the total (modelled) renewable/carbon neutral energy generated and exported? :	

ASSESSMENT CRITERIA	
Prerequisite - Has a design workshop focusing on operational energy performance been carried out? :	Yes
Additional energy modelling to generate predicted operational energy consumption figures carried out? :	Yes
Predicted energy consumption targets by end use, design assumptions and input data reported? :	Yes
Risk assessment to highlight any significant design, technical, and process risks? :	Yes

ASSESSMENT CRITERIA (EXEMPLARY CREDITS)	
Maximum credits achieved in Ene 02 Energy monitoring? :	Yes
The client or building occupier commits funds to pay for the post-occupancy stage? :	Yes
The energy model is submitted to BRE and retained by the building owner? :	Yes

Credits awarded : 8.0
Exemplary credits awarded : 2.0

Comments :
Minimum of 4 (out of 9) credits required for Energy Performance to achieve "Excellent"
Design workshop focusing on energy required by RIBA Stage 2

Ene 02 Energy monitoring

To encourage the installation of energy sub-metering that facilitates the monitoring of operational energy consumption. To enable managers and consultants post-handover to compare actual performance with targets in order to inform ongoing management and help in reducing the performance gap.

Site :

ASSESSMENT CRITERIA	
Sub-metering of end use categories :	Yes
Sub-metering of high energy load and tenancy areas :	Yes

Credits awarded : 2.0

Ene 03 External lighting

To reduce energy consumption through the specification of energy efficient light fittings for external areas of the development.

Site :

ASSESSMENT CRITERIA	
External lighting has been designed out? :	No
Is external lighting specified in accordance with the relevant criteria? :	Yes

Credits awarded : 1.0

Ene 04 Low carbon design

To encourage the adoption of design measures, which reduce building energy consumption and associated carbon emissions and minimise reliance on active building services systems.

Site :

ASSESSMENT CRITERIA	
Has the first credit within Hea 04 been achieved? :	Yes
Passive design analysis :	Yes
Free cooling :	No
Low and zero carbon technologies :	Yes

KPI
Total on-site and/or near-site LZC energy generation :
Expected energy demand and CO_2-eq emissions reduction resulting from passive design measures :
Energy demand :
CO_2-eq emissions :

Expected energy demand and CO_2-eq emissions reduction resulting from passive design measures as a percentage :
Energy demand :

CO_2-eq emissions :

Expected reduction in CO_2-eq emissions resulting from the LZC technologies :

Expected reduction in CO_2-eq emissions resulting from the LZC technologies as a percentage :

Credits awarded : 2.0

Ene 05 Energy efficient cold storage

To encourage the installation of energy efficient refrigeration systems, in order to reduce operational greenhouse gas emissions resulting from the system's energy use.

Site :

Credits awarded : 0.0

Ene 06 Energy efficient transportation systems

To encourage the specification of energy efficient transport systems within buildings.

Site :

ASSESSMENT CRITERIA	
Energy consumption :	Yes
Energy efficient features - Lifts :	Yes

Credits awarded : 2.0

Ene 07 Energy efficient laboratory systems

To encourage laboratory areas that are designed to minimise their operational energy consumption and associated CO2 emission

Site :

Credits awarded : 0.0

Ene 08 Energy efficient equipment

To encourage installation of energy efficient equipment to ensure optimum performance and energy savings in operation

Site :

ASSESSMENT CRITERIA	
Swimming pool present? :	No
Major impact? :	
Laundry facilities with commercial-sized appliances present? :	No
Major impact? :	
Data centre present? :	No
Major impact? :	

IT-intensive operating areas present? :	No
Major impact? :	
Domestic scale appliances (individual and communal facilities) present? :	Yes
Major impact? :	No
Healthcare equipment present? :	Yes
Major impact? :	Yes
Kitchen and catering facilities present? :	Yes
Major impact? :	No
Other contributors :	
Significant majority contributors BREEAM compliant :	Yes

Credits awarded : 2.0

Comments :
Any equipment with a rating of 10KW and above needs to be subjected to a Life Cycle Costing analysis for two options. Equipment with the lowest LCC value needs to be specified.

Tra 01 Transport assessment and travel plan

To reward awareness of existing local transport and identify improvements to make it more sustainable.

Site :

ASSESSMENT CRITERIA	
Travel plan :	Yes

Credits awarded : 2.0

Tra 02 Sustainable transport measures

To maximise the potential for local public, private and active transport through provision of sustainable transport measures appropriate to the site.

Site :

ASSESSMENT CRITERIA	
Prerequisite - Issue Tra 01 'Transport assessment and travel plan' credits achieved :	Yes
Location type (based on existing AI) :	AI ≥ 40 (metropolitan centre locations)
Number of points achieved overall :	5

Credits awarded : 9.0

Comments :
Assume local (live) public transport information will be provided.
Assume electric car regarding stations will be provided for 10% of car parking spaces.
Assume cycle racks and cyclist facilities will be provided.
Assume the following new amenities will be provided: food outlet, outdoor space, pharmacy.

Wat 01 Water consumption

To reduce the consumption of potable water for sanitary use in new buildings through the use of water efficient components and water recycling systems.

Site :

ASSESSMENT CRITERIA

Are all water components subject to clinical requirements? :	Yes
Please select the calculation procedure used :	Standard approach
Credits awarded :	2
Exemplary performance :	

KEY PERFORMANCE INDICATORS

Standard approach data: :

Water Consumption from building micro-components :

Water demand met via greywater/rainwater sources :

Total net water consumption :

Improvement on baseline performance :

Key Performance Indicator - use of freshwater resource: :

Total net Water Consumption :

Default building occupancy :

Credits awarded : 2.0

Comments :
Assumes a 25% improvement of water consumption over baseline building.

Wat 02 Water monitoring

To reduce the consumption of potable water in new buildings through the effective management and monitoring of water consumption.

Site :

ASSESSMENT CRITERIA

Water meter on the mains water supply to each building :	Yes
Sub-metering/monitoring equipment on supply to plant/building areas :	Yes
Pulsed output or other open protocol communication output and BMS connection :	Yes

The water monitoring strategy used enables the identification of all water consumption for sanitary uses as assessed under Wat 01 (L/person/day) :

Credits awarded : 1.0

Comments :
Assumes sub-meter on any area of the building consuming 10% of the total water demand.

Wat 03 Water leak detection

To reduce the consumption of potable water in new buildings through minimising wastage due to water leaks.

Site :

ASSESSMENT CRITERIA	
Leak detection system :	Yes
Flow control devices :	Yes

Credits awarded : 2.0

Comments :
Assumes meters are provided (and monitored by the BMS) for the Utility supplier's meter and the mains incoming water supply.
Assumes solenoid valves are provided on the supplies to each WC block.

Wat 04 Water efficient equipment

To reduce water consumption for uses not assessed under Wat 01 by encouraging specification of water efficient equipment.

Site :

Credits awarded : 0.0

Mat 01 Life cycle impacts

To reduce the burden on the environment from construction products by recognising and encouraging measures to optimise construction product consumption efficiency and the selection of products with a low environmental impact (including embodied carbon), over the life cycle of the building.

Site :

ASSESSMENT CRITERIA	
Total Mat 01 credits achieved - taken from the Mat 01/02 Results Submission Tool :	0
Total Exemplary credits achieved - taken from the Mat 01/02 Results Submission Tool :	0

Credits awarded : 0.0

Comments :
New credit. Not targeted. Would require a life cycle assessment of 2 to 4 options for the superstructure, using BRE's LCA tool, plus submission of the results to BRE at the end of Concept Stage (and before planning permission is applied for).
Technical Design: Carry out LCA of 2 - 3 significantly different design options for superstructure.

Mat 02 Environmental impacts from construction products

To encourage availability of robust and comparable data on the impacts of construction products through the provision of EPD.

Site :

ASSESSMENT CRITERIA	
Mat 02 credit achieved - Taken from the Mat 01/02 Results Submission Tool. :	0

Credits awarded : 0.0

Comments :
Would require specification of products with a recognized environmental declaration

Mat 03 Responsible sourcing

To facilitate the selection of products that involve lower levels of negative environmental, economic and social impact across their supply chain including extraction, processing and manufacture.

Site :

ASSESSMENT CRITERIA	
Prerequisite: All timber and timber based products are 'Legally harvested and traded timber' :	Yes
Has the enabling sustainable procurement credit been achieved? :	
Percentage of available for percentage of RSM points achieved :	

Credits awarded : 0.0

Comments :
Requires a sustainable design plan to be in place before Concept Stage

Mat 05 Designing for durability and resilience

To reduce the need to repair and replace materials resulting from damage to exposed elements of the building and landscape.

Site :

ASSESSMENT CRITERIA	
Protecting vulnerable parts of the building from damage and exposed parts of the building from material degradation :	Yes

Credits awarded : 1.0

Comments :
Requires targets to be set and opportunities to be identified for optimizing use of materials at each design stage (Starting at Preparation and Brief). Identified measures must be implemented.

Mat 06 Material efficiency

To avoid unnecessary materials use arising from over specification without compromising structural stability, durability or the service life of the building.

Site :

ASSESSMENT CRITERIA	
Material optimisation measures investigated and implemented at all relevant stages :	Yes

Credits awarded : 1.0

Wst 01 Construction waste management

To reduce construction waste by encouraging reuse, recovery and best practice waste management practicesto minimise waste going to landfill.

Site :

ASSESSMENT CRITERIA	
Is demolition occurring under the developer's ownership for the purpose of enabling the assessed development? :	Yes
Pre-demolition audit :	Yes
Compliant Resource Management Plan :	Yes
Have waste materials been sorted into separate key waste groups? :	Yes
Exemplary level criteria :	No

KPI	
Measure/units for the data being reported :	m^3
Non-hazardous construction waste (excluding demolition/excavation) - fill in to award 'Construction resource efficiency' credits :	7.5 m3/100m2
Total non-hazardous construction waste generated :	
Non-hazardous non-demolition construction waste diverted from landfill - fill in to award diversion from landfill credit :	
Total non-hazardous non-demolition construction waste diverted from landfill :	
Non-hazardous demolition waste diverted from landfill - fill in to award diversion from landfill credit :	
Total non-hazardous demolition waste generated :	
Total non-hazardous demolition waste to disposal :	
Non-hazardous excavation waste diverted from landfill - fill in to award credit :	
Material for reuse :	
Material for recycling :	
Material for energy recovery :	
Hazardous waste to disposal :	

Credits awarded : 3.0

Wst 02 Use of recycled and sustainably sourced aggregates

To encourage the use of more sustainably sourced aggregates, encourage reuse where appropriate and avoid waste and pollution arising from disposal of demolition and other forms of waste.

Site :

ASSESSMENT CRITERIA	
Is demolition occurring under the developer's ownership for the purpose of enabling the assessed development? :	Yes
Pre-requisite: pre-demolition audit :	Yes
Projects Sustainable Aggregate points :	

KPI

Total quantity of aggregate :

% of high - grade aggregate that is recycled/ secondary aggregate by application :

Credits awarded : 0.0

Wst 03 Operational waste

To encourage the recycling of operational waste through the provision of dedicated storage facilities and space.

Site :

ASSESSMENT CRITERIA

Compliant recycling and non-recyclable waste storage allocated :	Yes
Static waste compactor(s) or baler(s) :	Yes
Vessel(s) for composting suitable organic waste and water outlet :	Yes
Healthcare buildings - NHS compliant operational waste facilities provided :	Yes

Credits awarded : 1.0

Wst 04 Speculative finishes (Offices only)

To minimise the wastage associated with the installation of floor and ceiling finishes in lettable areas in speculative buildings where tenants have not been involved in their selection.

Site :

Credits awarded : 0.0

Wst 05 Adaptation to climate change

To minimise the future need of carrying out works to adapt the building to take account of more extreme weather changes resulting from climate change and changing weather patterns.

Site :

ASSESSMENT CRITERIA

Resilience of structure, fabric, building services and renewables installation :	Yes
Exemplary level - responding to climate change :	

Credits awarded : 1.0

Comments :
Climate Change Adaption Strategy to be developed Prior to Concept Stage.
Recommendations to be implemented.

Wst 06 Design for disassembly and adaptability

To avoid unnecessary materials use, cost and disruption arising from the need for future adaptation works as a result of changing functional demands and to maximise the ability to reclaim and reuse materials at final demolition in line with the principles of a circular economy.

Site :

ASSESSMENT CRITERIA

Design for disassembly and functional adaptability - recommendations :	Yes
Disassembly and functional adaptability - implementation :	No

Credits awarded : 1.0

Comments :
Assumes a study into disassembly and adaptation is produced during Concept Stage.

LE 01 Site selection

To encourage the use of previously occupied or contaminated land and avoid land which has not been previously disturbed.

Site :

ASSESSMENT CRITERIA	
Percentage of proposed development's footprint on previously occupied land: :	75 %
Contaminated land :	

Credits awarded : 1.0

Comments :
May be able to get second credit, depending on level of land contamination.

LE 02 Identifying and understanding the risks and opportunities for the site

To determine the ecological baseline and zone of influence of the site and identify risks and opportunities for achieving optimum outcomes.

Site :

ASSESSMENT CRITERIA	
Prerequisite - Assessment route selection :	Route 2
Prerequisite - The client or contractor confirms monitoring of compliance with all Relevant UK and EU or international legislation :	Yes
Survey and Evaluation :	Yes
Determining the ecological outcomes of the site :	Yes
Exemplary level - Determining the ecological outcomes of the site :	

Credits awarded : 2.0

LE 03 Managing negative impacts on ecology

To avoid, or limit as far as possible, negative impacts on the ecology of the site and its zone of influence arising as a result of the project.

Site :

ASSESSMENT CRITERIA	
Which assessment route is being followed? :	Route 2
Prerequisite - Identification and understanding the risks and opportunities for the site :	Yes
Planning, liaison and implementation :	Yes
Managing negative impacts of the project :	2

Credits awarded : 3.0

LE 04 Change and enhancement of ecological value

To enhance the ecological value of the site and areas within its zone of influence in support of local, regional and national priorities.

Site :

ASSESSMENT CRITERIA	
Which assessment route is being followed? :	Route 2
Prerequisite - Identification and understanding the risks and opportunities for the site :	Yes
Liaison, implementation and data (Route 2 only) :	Yes
Change and enhancement of ecology (route 2 only) :	2

Credits awarded : 3.0

LE 05 Long term impact on biodiversity

To secure ongoing monitoring, management and maintenance of the site and, its habitats ecological features to ensure intended outcomes are realised for the long term.

Site :

ASSESSMENT CRITERIA	
Which assessment route is being followed? :	Route 2
Prerequisite - Roles and responsibilities, implementation, statutory obligations :	Yes
Liaison, monitoring implementation, evolving management and maintenance solutions :	Yes
Landscape and management plan :	No

Credits awarded : 1.0

Pol 01 Impact of refrigerants

To reduce the level of greenhouse gas emissions arising from the leakage of refrigerants from building systems.

Site :

ASSESSMENT CRITERIA	
Refrigerant containing systems installed in the assessed building? :	Yes
Prequisite: All systems (with electric compressors) comply with BSÂ EN 378:2016 (parts 2 and 3) and (where applicable) Institute of Refrigeration Ammonia Refrigeration Systems code of practice? :	Yes
Total Direct Effect Life Cycle CO2eq (DELC). Emissions from the system :	1000 kgCO2eq/kW
Global Warming Potential (GWP) of the specified refrigerant(s) 10 or less? :	No

LEAK DETECTION	
Are all the systems hermetically sealed? :	Yes
BREEAM compliant automatic refrigerant leak detection system installed and able to manage the remaining refrigerant charge :	

Credits awarded : 2.0

Pol 02 Local air quality

To contribute to a reduction in local air pollution through the use of low emission combustion appliances in the building.

Site :

ASSESSMENT CRITERIA	
How many credits have been achieved? :	1

Credits awarded : 1.0

Pol 03 Flood risk management and reducing surface water run-off

To avoid, reduce and delay the discharge of rainfall to public sewers and watercourses, thereby minimising the risk and impact of localised flooding on and off-site, watercourse pollution and other environmental damage.

Site :

ASSESSMENT CRITERIA	
Prerequisite: Has an appropriate consultant demonstrated and confirmed the development's compliance with all sought credits? :	Yes
Has a site-specific flood risk assessment been conducted? :	Yes
Annual probability of flooding :	Low
Has the pre-requisite for the Surface Water Run-Off credits been achieved? :	Yes
Has the Surface Water Run-Off - Rate credit been achieved? :	Yes
Flooding of property will not occur in the event of local drainage system failure :	Yes
Has the Surface Water Run-Off - Volume credit been achieved? :	Yes
Minimising watercourse pollution :	Yes

Credits awarded : 5.0

Pol 04 Reduction of Night Time Light Pollution

To ensure that external lighting is concentrated in the appropriate areas and that upward lighting is minimised, reducing unnecessary light pollution, energy consumption and nuisance to neighbouring properties.

Site :

ASSESSMENT CRITERIA	
External lighting has been designed out? :	No
Does external lighting meet all relevant criteria? :	Yes

Credits awarded : 1.0

Pol 05 Noise attenuation

To reduce the likelihood of noise arising from fixed installations on the new development affecting nearby noise-sensitive buildings.

Site :

ASSESSMENT CRITERIA	
Noise-sensitive areas/buildings within 800m radius of the development :	Yes
Is the site compliant with all relevant criteria? :	Yes

Credits awarded : 1.0

Inn 01 Innovation

To support innovation within the construction industry through the recognition of sustainability related benefits which are not rewarded by standard BREEAM issues.

Site :

ASSESSMENT CRITERIA	
Number of 'approved' innovation credits achieved? :	0

Credits awarded : 0.0