WHITECODE
CONSULTING

Chalk Farm Road

Sustainability statement

Prepared for Regal Chalk Farm Limited

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Revision 1

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Contents

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1. Introduction

This Sustainability Statement has been prepared by Whitecode Consulting Ltd on behalf of Regal Chalk Farm Limited ('the Applicant') in support of an application for full planning permission for the redevelopment of 100 Chalk Farm Road ('the Site') within London Borough of Camden ('LBC').

A listed building consent application accompanies the application for works to the adjacent Roundhouse, which is a Grade II* listed building.

The site is located on the south-western side of Chalk Farm Road and borders the mainline railway into Euston, with the Juniper Crescent Housing Estate to the south. It lies within the Regents Canal Conservation Area, to which the existing building on the site is a neutral contributor. To the west, the site is adjacent to the Grade II* listed Roundhouse theatre and live music venue. Beyond that, to the north-west is Chalk Farm Underground Station. To the east is the Petrol Filling Station site, which forms part of the Camden Goods Yard development and is currently in use as a temporary supermarket.

The development will provide 264 student accommodation units, together with 1000 sqm (GIA) of commercial space, 30 affordable residential units, with public realm improvements, new areas of landscaping, amenity and play space, and improved accessibility to the site.

The description of development is as follows:

"Demolition of existing buildings and redevelopment of the site to provide two buildings containing purpose-built student accommodation with associated amenity and ancillary space (Sui Generis), affordable residential homes (Class C3), ground floor commercial space (Class E) together with public realm, access, servicing, and other associated works."

Full details and scope of the planning application is described in the submitted Town Planning Statement, prepared by Gerald Eve LLP.

This Sustainability Statement details how the Proposed Development, will meet the high sustainability aspirations of the Local Planning Authority – London Borough of Camden and addresses the sustainability and energy requirements set out in the National, Regional and Local planning policies in relation to sustainable design and construction.

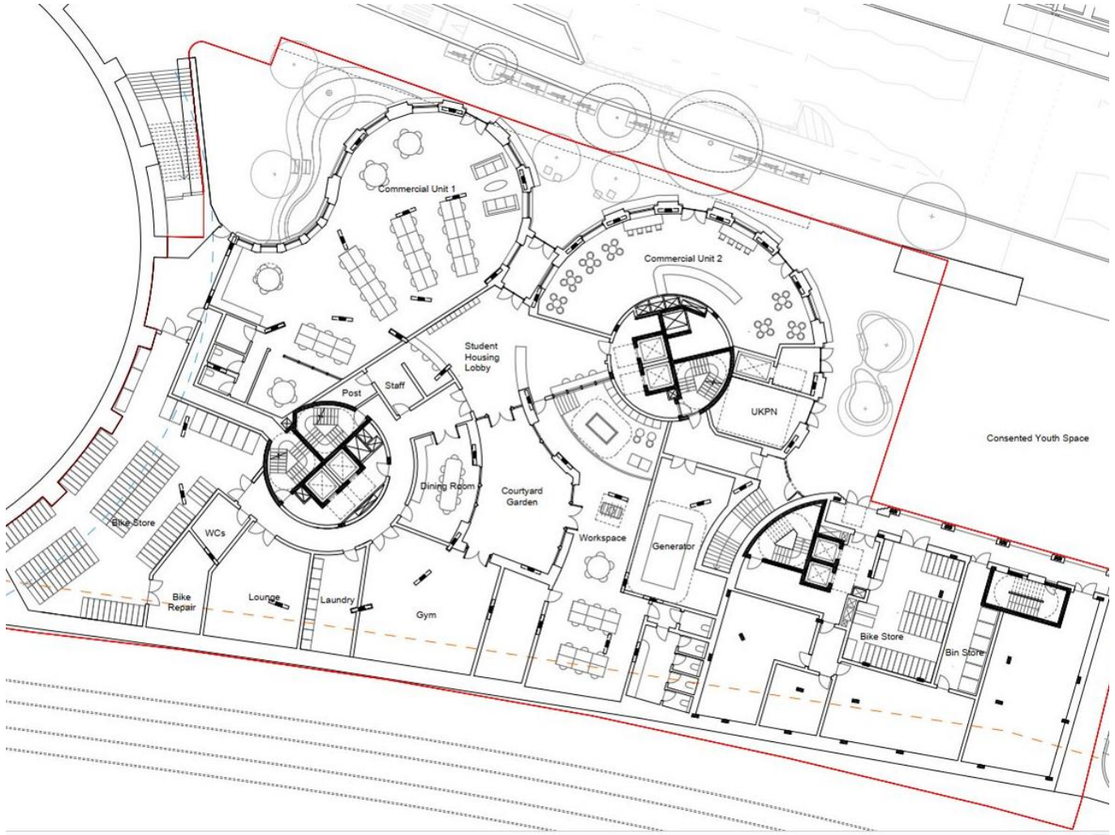


Figure 1.1 Proposed Site Plan

2. Planning Policy and Targets

The energy and sustainability policies relevant to the Proposed Development are highlighted below.

2.1 National Building Regulations

The proposed development will be constructed to be compliant with Part L 2021 of the Building Regulations. The proposed development consists of 91 dwellings which, as domestic buildings, will be assessed under Part L1A 2021. The non-domestic areas of the development will be assessed under Part L2A. They mandate that the design of the building demonstrably causes lower carbon dioxide (CO_2) emissions than a notional equivalent of given specifications.

2.2 National Planning Policy Framework

National planning policy on sustainability is set out in the National Planning Policy Framework (NPPF). The NPPF was updated in December 2023 and re-emphasises the Government's commitment to sustainable development. It encourages planning authorities to take an approach based on integrating the three objectives of sustainable development:

- An economic objective – to help build a strong, responsive, and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation, and improved productivity; and by identifying and coordinating the provision of infrastructure
- A social objective – to support strong, vibrant, and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed, beautiful, and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and
- An environmental objective – to protect and enhance our natural, built, and historic environment, including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

2.3 Regional Planning Policies

As the application site lies in the London Borough of Camden, the applicable Regional Policy is the London Plan 2021. The London Plan sets out the Mayor's spatial vision and strategy, which provides a policy framework for London's development.

The London Plan draws energy into its major policies. In its strategic priorities, the London Plan addresses issues of the environment quality raised by the urban heat island effect and realises the unique potential for district energy networks. The London Plan requires all London boroughs to follow the London Plan's energy efficiency guides.

Tackling climate change will also require a move towards more sustainable energy sources and the London Plan seeks to support the development of decentralised energy systems, including the use of low carbon and renewable technologies and the greater utilisation of energy generated from waste.

Overall, the most substantial emission savings London can make will come from initiatives to decarbonise its energy supply and to reduce the emissions from the existing building stock. In addition, the London Mayor expects that all new developments will fully contribute towards the reduction in CO2 emissions, and this will be principally achieved through the application of Policy 5.2 and the London Mayor's energy hierarchy:

- Be Lean – minimise energy use by implementing passive design measures, e.g. improve fabric U-values and minimise air permeability.
- Be Clean – all systems which use fossil fuels, i.e. gas, oil, coal, or electricity, must utilise these fuels at optimum efficiency.
- Be Green – any remaining energy demand should be produced with as much renewable technology as practically/financially possible.
- Be Seen – monitor, verify and report on energy performance.

Policy SI 2 requires all major development proposals to meet a target for CO2 emission reduction in buildings.

The regulated carbon dioxide emissions reduction target for major developments is zero carbon with a minimum onsite reduction of 35 per cent beyond Building Regulations. Residential developments should achieve 10%, and non-residential developments should achieve 15% through energy efficient measures. The accompanying energy report has been prepared in line with the London Plan issued March 2021 and uses the SAP10 carbon emission rates.

The main policies from the London Plan to be addressed by the Proposed Development, relating to sustainable design and construction are as follows:

- Policy GG6 – Increasing efficiency and resilience
- Policy D14 - Noise
- Policy G1 – Green infrastructure
- Policy G5 – Urban Greening
- Policy G7 – Trees and woodlands
- Policy G8 – Food growing
- Policy SI 1 – Improving air quality
- Policy SI 2– Minimising greenhouse gas emissions
- Policy SI 3 – Energy infrastructure
- Policy SI 4 – Managing heat risk
- Policy SI 5 – Water infrastructure
- Policy SI 7 – Reducing waste and circular economy
- Policy SI 8 – Waste capacity
- Policy SI 10 – Aggregates
- Policy SI12 – Flood risk management
- Policy SI 13 – Sustainable drainage
- Policy T4 – Assessing and mitigating transport impact

2.4 Local Planning Policies

Camden Local Plan 2017 sets out long term energy and sustainability related standards for the Borough. The planning policies of relevance to energy and sustainability in the Local Plan are as follows:

- Policy A3 Protection, Enhancement and Management of Biodiversity
- Policy A4 Noise and Vibration
- Policy CC1 Climate Change Mitigation
- Policy CC2 Adapting to Climate Change
- Policy CC3 Water and Flooding
- Policy CC4 Air Quality
- Policy CC5 Waste
- Policy T1 Prioritising Walking, Cycling and Public Transport
- Policy T2 Parking and Car-Free Development

Camden Council has recently commenced consultation on a new Local Plan (Reg 18) and Chapter 8 sets out the Council's policies in terms of responding to climate change.

The policy sets out the Council's overarching approach to responding to the climate emergency and detailed guidance is provided to applicants on:

- The re-purposing, refurbishment and re-use of existing buildings;
- Minimising waste and increasing the re-use of resources;
- Energy reduction in new and existing buildings;
- Design for a changing climate; and
- Managing flood risk.

3. Energy and CO_2 Emissions

This section will cover the following policies:

- London Plan Policies GG6, SI 2 and SI 3
- Camden Local Plan 2017 Policies CC1 and CC2
- BREEAM New Construction 2018 V6 - Energy

Policy GG6 encourages all new developments to seek to improve energy efficiency and move towards a carbon circular economy which supports the target for London to become zero carbon by 2050. Buildings and infrastructure should be designed to adapt to a changing climate, making efficient use of water and reducing impacts from natural hazards like flooding and heatwaves, while mitigating and avoiding contributing to the urban heat island effect.

Policy SI 2 of the London Plan requires all major developments to be net zero-carbon. This means reducing greenhouse gas emissions in operation and minimising both annual and peak energy demand in accordance with the energy hierarchy Be Lean, Be Clean, Be Green. A minimum on-site reduction of at least 35 per cent beyond Building Regulations is required for major development with residential development achieving 10 per cent, and non-residential development achieving 15 per cent reduction through energy efficiency measures.

Policy SI 3 requires large scale developments to produce Energy Masterplans which consider the most efficient energy supply options for the site.

Camden Local Plan policy CC1 requires all new developments to minimise the effects of climate change and to meet the highest feasible environmental standards that are financially viable during construction and occupation. This includes following the London plan targets for carbon reduction.

Policy CC2 sets out the Camden's expectation for non-domestic developments of 500 sqm of floorspace or above to achieve "Excellent" in BREEAM assessments and encourages zero carbon in new development from 2019. A pre-assessment identifying how the development is expected to meet the BREEAM requirement is included in Appendix A.

3.1 Proposed Energy Strategy

An *Energy Strategy* has been prepared by Whitecode Consulting to accompany the planning application. The residential elements have been assessed against Part L1A 2021 of the Building Regulations using the Standard Assessment Procedure (SAP) 10.2 methodology. The non-residential elements have been assessed under Part L2A 2021 of the Building Regulations using National Calculation Methodology (NCM) and implemented through Simplified Building Energy Model (SBEM) v6.1.b. The strategy outlines the proposed energy strategy for the site following the energy hierarchy Be Lean – Be Clean – Be Green.

Be Lean

Energy efficiency is the first stage of the energy hierarchy. Energy demand should be reduced as far as possible before the heating strategy and installation of low carbon and renewable technologies is considered. This is important in protecting consumers from high prices.

The building will be constructed to achieve an improved thermal performance compared with Building Regulations minimum standards. The table below shows the proposed u-values for this development:

Element:	Part L 2021 Limiting Values:	Domestic design	Non-domestic design
Floors	0.18 W/m²K	0.12 W/m²K	0.10 W/m²K
External Walls	0.26 W/m²K	0.15 W/m²K	0.15 W/m²K
Common Area Walls (unheated space)	0.30 W/m²K	0.18W/m²K	N/A
Party Walls (between dwellings)	0.20 W/m²K	0.00 W/m²K	0.00 W/m²K
Roofs	0.20 W/m²K	0.12 W/m²K	0.11 W/m²K
Front Doors	1.60 W/m²K	1.0 W/m²K	1.60 W/m²K
Windows	1.60 W/m²K	1.20 W/m²K	0.80 W/m²K
Window g-value	N/A	0.40	PBSE - 0.40 Commercial – 0.30
Air Permeability Rate	8m³/hm² (@50Pa)	3m³/hm² (@50Pa)	2m³/hm² (@50Pa)

In addition to improving the building fabric, pipework insulation will be based on BS5422 standards for both hot and cold pipework and duct insulation, with high thermal properties, will be specified to reduce heat loss. Energy efficient buildings services, lighting and controls strategy will also be implemented throughout the scheme to reduce fuel consumption.

With this specification, the development can expect to achieve a 12% reduction in carbon emission for the domestic elements and 12% reduction for the non-domestic elements. Results are presented in the table below.

Regulated carbon dioxide emissions (tonnes of CO_2 per annum)	Domestic tonnes CO_2 per annum	Non-domestic tonnes CO_2 per annum
Baseline: Part L 2021 of the Building Regulations compliant development	21.9	44.8
After energy demand reduction (be lean)	19.2	39.6
Carbon savings over baseline	2.7	5.2
Carbon reduction over baseline	12%	12%

Be Clean

The next stage of the energy hierarchy is 'Be Clean'. The site is located in a heat network priority area (HNPA) and opportunities to connect to a district heat network were investigated. The nearest existing heat network was identified as the Royal Free Energy Centre, approximately 760m away, and therefore not considered a feasible option at this time. Provision will be made in the plant room for possible future connection with pipework to each of the cores heating risers installed and capped off.

Be Green

The final stage of the energy hierarchy is 'Be Green' and air source heat pumps have been identified as the most appropriate technology for the site, to provide the heating and hot water for the residential units. Heating will be delivered via heat pumps located on the roofs to serve both student and residential accommodation.

In addition to this, there is sufficient space on the roof to provide an array of PV panels. A total of 30.4 kWp PV panels is proposed, which will produce around 24,101 kWh per year.

Results for the Be Green section indicate that with ASHP's and PV the proposed development can expect to achieve a 79% reduction in carbon for the residential elements and 17% reduction of the non-residential elements. The results are presented in the table below.

	Carbon dioxide emissions (tonnes CO_2 per annum)	
	Domestic	Non-domestic
Baseline: Part L 2021 of the Building Regulations compliant development	21.9	44.8
After energy demand reduction (be lean)	19.2	39.6
After heat network/CHP (be clean)	19.2	39.6
After renewable energy (be green)	4.7	37.4
% carbon reduction	79%	17%
% carbon reduction site-wide	37%	

When considering for all stages of the energy hierarchy cumulatively, the *Energy Strategy* concludes that the development can expect to achieve a sitewide CO2 emission reduction of 37% when compared against Part L 2021 baseline.

	Total regulated emissions (tonnes CO_2/year)	CO_2/year (tonnes CO_2/year)	Percentage saving (%)
Part L 2021 baseline	66.7		
Be lean	58.8	7.8	12%
Be clean	58.8	0	0%
Be green	42.1	16.8	25%
Total savings		24.6	37%
		CO_2savings offset (tonnes CO_2)	
Off-set		**1,261.9**	

4. Management

This section will cover the following policies:

- Camden Local Plan policy CC2
- BREEAM New Construction 2018 V6 – Management

Policy CC2 sets out the Camden's expectation for non-domestic developments of 500 sqm of floorspace or above to achieve "Excellent" in BREEAM assessments.

The Management section of BREEAM rewards developments that adopt sustainable management practices in connection with design, construction, commissioning, handover and aftercare. This ensures that robust sustainability objectives are set and followed through into the operation of the building.

Credits have been maximised by the project team who have engaged with BREEAM from the outset of the Chalk Farm project and will continue to consider sustainability through each key stages of design, procurement, construction and initial occupation.

Key commitments made by the Applicant towards project management include:

- Early stakeholder engagement to ensure that key project team members are identified and engaged to minimise risks of design conflicts appearing later on in the project.
- Following the principles of responsible construction site management to ensure that the construction site is managed in an environmentally and socially considerate, responsible and accountable manner.
- To properly plan the handover through provision of Building User Guides and training to future occupiers. This will allow facilities managers and building owners to better understand the functionality of the building and how to ensure it continues to perform at optimum levels.
- Provide aftercare to the building owner and occupants during the first year of occupation to ensure the building operates in accordance with the design intent and operational demands.

A pre-assessment identifying how the development is expected to meet the BREEAM requirement is included in Appendix A.

5. Health and Wellbeing

This section will cover the following policies:

- London Plan Policy SI 4
- Camden Local Plan 2017 Policy CC2
- BREEAM New Construction 2018 V6 – Health and Wellbeing

An unintended consequence of improved building fabric and air tightness of newly built dwellings may be an increased risk of overheating. Newly constructed highly insulated dwellings were found to have the potential to be at higher risk of overheating than older, less insulated dwellings.

The London Plan Policy SI 4 requires developments to minimise adverse impacts on the urban heat island through design, layout, orientation, materials and the incorporation of green infrastructure. Developments should demonstrate how they will reduce the potential for internal overheating and reliance on air conditioning systems in accordance with the following cooling hierarchy:

- Reduce the amount of heat entering a building through orientation, shading, high albedo materials, fenestration, insulation and the provision of green infrastructure
- Minimise internal heat generation through energy efficient design
- Manage the heat within the building through exposed internal thermal mass and high ceilings
- Provide passive ventilation
- Provide mechanical ventilation
- Provide active cooling systems.

Camden's Local Plan policy demands that all developments adopt appropriate climate change adaptation measures such as measures to reduce the impact of urban and dwelling overheating, including application of the cooling hierarchy.

5.1 Dynamic Thermal Comfort Analysis

A *Summer Overheating Assessment* has been carried out by Whitecode Consulting Ltd using dynamic simulations software, Integrated Environmental Solutions Virtual Environmental (IES VE) software, version 2022.2.0.0. The report ascertains whether the dwellings will overheat. A sample floor of each block in the development was assessed against the following criteria set out in CIBSE Technical Memorandum 59 – Design methodology for the assessment of overheating risk in homes (TM59:2017):

- Criterion 1 – For living rooms, kitchens and bedrooms: A limit is set for the number of hours that the operative temperature can exceed the maximum adaptive temperature. A temperature difference greater than or equal to 1K shall not exceed 3% of the occupied hours of a typical summer (1st May to 30th September).

- Criterion 2 – For bedrooms only: To guarantee comfort during the sleeping hours the operative temperature in the bedroom from 10pm to 7am shall not exceed 26oC for more than 1% of annual hours (1% of the annual hours between 10pm to 7am for bedrooms is 32 hours).

The *Sample Summer Overheating Report* produced by Whitecode Consulting Ltd in January 2024 based on the following assumptions:

- Glazing with a g-value of 0.50 applied
- Windows can be open 20 degrees; doors opened 90 degrees
- Night-Time Cooling (No NTC) assumed to living room doors and living room glazing on the ground floor.
- No NTC is assumed to bedrooms on the ground floor due to security issues
- MVHR with tempered air has been assumed in all residential areas

The report concludes that with the above specification, all the rooms are compliant with the CIBSE TM59 Criteria and Part O.

The acoustic report advised that there were some units affected by acoustic constraints, these dwellings, along with ground floor units, will require MVHR with tempered air.

5.2 BREEAM

BREEAM encourages the increased health, wellbeing and safety of building users. Issues within the Health and Well-being category reward that consider building design and specification that create a healthy, safe and comfortable internal and external environment.

The Applicant has already consulted with the Metropolitan Police on security considerations for the development and will be implementing their recommendations. This will ensure a safer and more secure environment that supports the physical and mental wellbeing of building users, and the protection of property and business.

As well as ensuring the thermal comfort and security of building occupants, the Applicant aims to ensure the following areas are also addressed within the proposed development with regards to health and well-being:

- Indoor Air Quality – addressed in the Pollution section of this report.
- Acoustic Performance - addressed in the Pollution section of this report.
- Safe and healthy surroundings - addressed in the Transport section of this report.

6. Transport

This section will cover the following policies:

- London Plan Policies T4
- Camden Local Plan 2017 Policies CC2, T1 and T2
- BREEAM New Construction 2018 V6 - Transport

The regional and local policies call for a reduction in the use of cars and increase in the use of suitable transport means such as public transport, cycling and walking.

London Plan Policy T4 calls for Transport Assessments to be developed to ensure that the impacts on the capacity of the transport network (including impacts on pedestrians and the cycle network), at the local, network-wide and strategic level, are fully assessed and where appropriate, to provide mitigation through direct provision of public transport, walking and cycling facilities and highway improvements or by way of a financial contribution, to address identified adverse transport impacts.

Camden's Local Plan policies T1 and T2 encourages new developments to consider improvements to the pedestrian and cycling environment and promote the use of more sustainable modes of transport. Developments should seek to reduce dependence on car journeys through initiatives such as restricting parking, providing sufficient secure cycle parking spaces and enhancing the local environment to encourage walking and use of public transport.

Policy CC2 requires developments to meet BREEAM 'Excellent'. The Transport section of the BREEAM Assessment will be followed and credits maximised where possible to encourage a modal shift away from private cars towards healthy and sustainable transport initiatives. The BREEAM Pre-assessment can be found in Appendix A.

A *Transport Assessment* was prepared by Iceni Projects Limited to support the outline planning application. It reviews the existing transport and movement conditions and site access arrangements. The assessment also reviews the anticipated transport impacts of the development.

6.1 Public Transport

The Site is located in an area with a PTAL rating of 6a which indicates an excellent level of public transport accessibility.

The nearest London Underground stations are Chalk Farm, located 100m to the west of the Site, and Camden Town, 800m south-west of the site, both of which provide access to the Northern Line.

Kentish Town station is located 700m north of the Site and is served by the London Overground Line.

There are several bus stops along Chalk Farm Road with the closest located adjacent to the Site. The bus stops are served by 5 bus routes which provide a total of 39 services an hour to destinations such as The Royal Free Hospital, White City, Hammersmith Station, Paddington Station and St Bartholomew's Hospital.

6.2 Local Amenities

The Proposed Development is ideally located within close proximity to a wide range of amenities. Restaurants, food stores, gyms, parks and doctors surgeries can all be accessed via safe pedestrian routes within 500m from the Site.

In addition to existing amenities, 824m^2 of Class E commercial floorspace will be delivered as part of the development, offering building users a further choice of amenities.

6.3 Cycling

A dedicated bike store providing 60 cycle spaces - 46 Two-Tier, 10 Sheffield and 4 Accessible, will be provided at the ground floor level of the affordable housing block. A further cycle store providing 208 spaces - 158 Two-Tier, 40 Sheffield and 10 Accessible, will be located at the ground floor level of the student accommodation block. Both stores will have separate, dedicated entrance points.

Visitor cycle parking will be provided within the public realm. 15 stands are proposed in total, with 12 located within the public footway and 3 inside the site ownership boundary.

6.4 Car Parking

The proposed development is being delivered as a car-free scheme with no associated vehicular parking spaces provided and vehicular access to the Site limited to emergency vehicles only. Future occupants of the Proposed Development will be restricted from applying for a parking permit within local controlled parking zones (CPZ). This will be secured via the Section 106 Agreement.

6.5 Pedestrian Access

Pedestrian access to the development is provided direct from Chalk Farm Road which will benefit from a widened footpath. As there is no vehicle access on site, pedestrian's routes are considered safe as they do not cross any vehicle access routes. Dedicated public realm / landscaped areas are also proposed along the site frontage.

6.6 Servicing

Servicing arrangements have been considered as part of the Transport Assessment and, in total, it is expected that the Proposed Development will generate 13 delivery and servicing trips daily, spread across the day. The report concludes that the Proposed Development would only result in the increase of 5 delivery / servicing vehicular trips across the daily period.

A Delivery and Servicing Plan has been developed providing a strategy to be employed to mitigate impact, for example by encouraging the use of cargo bikes which will take away some of the vehicular trips.

6.7 Travel Plan

A Framework Travel Plan has been prepared by Iceni for the development to encourage building users to consider a more sustainable way of travelling. Measures to be implemented into the development include:

- Provision of facilities to work/ study from home,
- Provision of adequate cycle parking,
- Provision of information on local pedestrian network and nearby amenities,
- Provision of up-to-date public transport information, including bus / train timetables and company contact information,
- Promotion of TfL's 30% discount on travelcards and bus / tram passes initiative,
- Promotion of a Car Club facilities.

7. Materials

This section will cover the following policies:

- London Plan Policy SI 2
- Camden 2017 Policies CC1 and CC2
- BREEAM New Construction 2018 V6 - Materials

The London Plan policies encourage resource conservation, waste reduction, increases in material reuse and recycling, and reductions in waste going for disposal. Policy SI 2 requires referrable developments to calculate their whole lifecycle carbon emissions through a Whole Life-Cycle Carbon Assessment and demonstrate actions taken to reduce life-cycle carbon emissions.

Camden Local Plan Policy CC1 expects all developments to optimise resource efficiency by minimising materials required and using materials with low embodied carbon content.

Policy CC1 requires developments to comply with BREEAM criteria. Mat 01 of the BREEAM 2018 V6 assessment requires a Life Cycle Analysis (LCA) to be conducted to identify opportunities for the development to increase material efficiency. The LCA seeks to encourage the re-use of existing materials instead of new materials and the retrofit or refurbishment of existing structures over new construction.

7.1 Life Cycle Analysis

Whitecode Consulting Ltd have produced a *Whole Life Cycle Carbon Assessment* which investigates the cumulative environmental impacts associated with all lifecycle stages of the Proposed Development from resource extraction through to end of life disassembly. This helps design teams make informed decisions not only in identifying measures to reduce carbon but also in other environmental areas such as materials, water and energy use throughout the whole lifecycle of the building.

GLA suggests a baseline WLC benchmark of < 850 kgCO2e/m²GIA with the aspirational range at < 500 kgCO2e/m² GIA for modules A1-A5, while for modules B-C, excluding B6 and B7, the baseline suggested values are < 350 kgCO2e/m²GIA and aspirational targets are in the range of < 300 kgCO2e/m²GIA.

Stages	WLC Benchmark	Aspirational Benchmark	Chalk Farm WLC
	kgCO_2e/m^2 GIA		
Stages A1-A5	<850	<500	**647**
Stages B-C (excl. B6 & B7)	<350	<300	**353**
Stages A-C (excl. B6 & B7)	<1200	<800	**993**

The assessment summarises the development's carbon emissions over its 60-year lifetime, accounting for its embodied and operational carbon emissions and end of life and concludes the development is within the GLA benchmark for Stages A1-A5 and for Stages B-C. Overall, the development is sitting comfortably within the WLC benchmark for Stages A-C.

This has been achieved through design decisions made to reduce the amount of materials used in construction. Examples of these decisions are provided in the table below:

Decision	Saving $kgCO_2e/m^2$ GIA
30% GGBS in superstructure concrete	9.39
Specification of products with EPD's	13.6
Use of R290 Refrigerant	2.1
Reuse of existing terrazzo tiling	0.09

7.2 Responsible Sourcing

Materials for key building elements are encouraged to be responsibly sourced with 100% of timber and timber based products to be legally harvested and traded timber. This is a minimum requirement under BREEAM. The BREEAM definition of legally sourced timber follows that of the UK Government's. Relevant documentation demonstrating compliance must be provided or made available on request.

7.3 Designing for Durability and Resilience

The design of the building will incorporate suitable durability and protection measures to prevent damage to vulnerable parts of the internal and external building and landscaping elements. Measures such as bollards in delivery/ drop off areas, specification of hard-wearing wall and floor finishes in communal areas and kick plates on doors will be considered to minimise the frequency of replacement and maximising materials optimisation.

8. Waste

This section will cover the following policies:

- London Plan Policies SI 7, SI 8 and SI 10
- Camden Local Plan 2017 Policies CC1, CC2 and CC5

The London Plan Policy SI 7 requires a Circular Economy Statement to be developed which will investigate how materials can be retained in use at their highest value for as long as possible and be re-used or recycled, leaving a minimum of residual waste.

Policy SI 8 requires the Circular Economy Statement to identify how waste can be reduced and ensure that waste management facilities have sufficient capacity to manage waste arising from the new development.

Policy SI 10 encourages re-use and recycling of construction and demolition and excavation waste. This is also a requirement of Camden Local Plan policy CC5 which seeks to secure the reuse of construction waste on development sites to reduce resource use and the need to transport materials.

Camden's Local Plan policy CC1 requires developments to optimise resource efficiency by reducing waste in operation. This is echoed in policy CC5 where Camden seek to increase recycling/composting in the borough to meet the London Plan target of 50% of household waste recycled by 2020 and 60% by 2031. New developments must ensure that building users can properly store and sort their waste and recycling by providing adequate facilities. Provision of facilities for home composting is also encouraged and is a mandatory requirement for BREEAM.

The Waste section of the BREEAM Assessment will be followed in line with policy CC2 requirements, and credits maximised where possible to reduce and manage both construction and operational waste. The BREEAM Pre-assessment can be found in Appendix A.

8.1 Circular Economy Plan

Whitecode Consulting have prepared a *Circular Economy Statement* setting out a strategy for the new development in line with the 3 core principals of Circular Economy:

- Conserving resources, increasing resource efficiency and sourcing sustainably
- Designing to eliminate waste
- Managing waste sustainably and at highest value

The *Circular Economy Statement* sets out measures aimed at reducing waste and carbon emissions, through early consideration of design and construction methods, that will result in reduced material demands and waste and, enable building materials, components, and products to be disassembled and re-used at the end of their useful life. These measures include:

- Provision of recycling bins to encourage students and residents to separate recycling from general waste
- Commitment to use responsibly sourced construction materials
- Use of prefabricated components such as utility cupboards

- Setting targets for reuse/recycling/recovery of construction and demolition waste

8.2 Adaptability

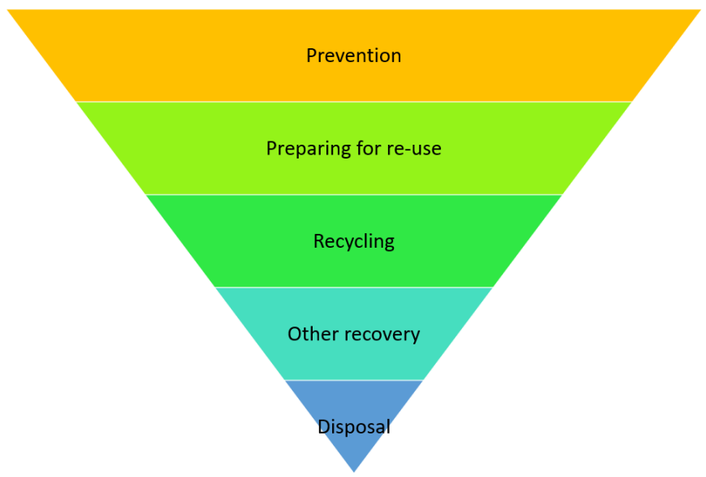
The *Circular Economy Statement* also addresses the need for an adaptable design. The following features have been considered for the Proposed Development:

- Basement lends resilience to future scenarios, as allows area for more plant if required
- Commercial spaces designed as flexible
- Ceiling heights to enable adaptability of uses, core layouts to allow flexibility
- External façade can be removed and replaced if required
- Access hatches to all shower room risers provided where possible in communal corridors for ease of access, maintenance and repair
- Rooftop plant designed to be modular for access within building lifts.
- Core layouts considered to allow flexibility
- Exercise has been undertaken in PBSA buildings to demonstrate that these could be converted to traditional residential use if student use is no longer needed.
- Non-adhesive floor coverings could be used to allow easy adaptability
- Non-structural partitions allow for future adaptability of layouts

8.3 Construction Site Waste Management

A *Pre-demolition Audit* has been carried out by Pell Frischmann, to maximise the recovery of material for subsequent high grade or value applications. Following this, a Site Waste Management Plan (SWMP) will be implemented to include details on waste minimisation strategies that will be incorporated into the design and procurement stages. It will also detail how waste will be managed during construction with predictions made for various waste streams.

The waste hierarch strategy will be employed on site to minimise the volume of waste produced and divert 95% waste from landfill.



Waste segregation strategies will be developed and implemented, with general, COSHH, gypsum/plasterboard and liquid waste to be segregated as a minimum.

Waste generation will be reduced to 7.5m^3/100m^2 in line with BREEAM Wst 01 requirements. Additionally, at least 95% of construction waste will be diverted from landfill in line with the Circular Economy Statement.

8.3 Reuse and Recycling

Prefabrication and off-site cutting of materials will be utilised wherever possible to avoid waste being produced on site. Contractors will be required to arrange take back agreements for packaging and encouraged to implement on site initiatives to reuse materials such as timber. Suitable demolition waste will be crushed on site and used for the piling mat. Suitable excavation waste will also be reused for back fill.

8.4 Student and Residential Operational Waste

The development will incorporate good practice, planning policy and BREEAM Wst 03 – Operational Waste criteria into the design. These dictate that adequate, suitable and dedicated waste storage space are included within the building which are accessible to all tenants. This must include space for both recyclable and non-recyclable waste.

Waste storage facilities will be provided in accordance with Camden standards for general waste and recyclables, with recyclable material storage clearly labelled. The current waste strategy proposals include refuse storage rooms at ground level within the residential blocks and in the basement of the student blocks, within close proximity to lobbies. The bin stores are provided in line with LBC's requirements for storage space.

Internal recycling facilities will be provided in the kitchens of private residences and in communal kitchens within the student accommodation.

8.5 Commercial Operational Waste

The tenant of the commercial unit is currently unknown however it is envisaged that the space will be operated as a small workshop. It is proposed that a refuse storage area will be located within the commercial unit and will provide sufficient space and flexibility for segregation of different waste streams as required.

BREEAM Wst 03 – Operational Waste has the following criteria which will be met:

- Clearly labelled, to assist with segregation, storage and collection of the recyclable
- Accessible to building occupants or facilities operators for the deposit of materials and collections by waste management contractors
- Of a capacity to the building type, size, number of units and predicted volumes of waste

Where the occupier is not known, BREEAM sets a minimum storage space of 2m2 per 1,000m2 of net floor area.

9. Water

This section will cover the following policies:

- London Plan Policies SI 5, SI 12 and SI 13
- Camden Local Plan 2017 Policies CC2 and CC3
- BREEAM New Construction 2018 V6 - Water

Policy SI 5 of the London Plan aims to minimise the use of mains water, water supplies and resources, by ensuring that mains water consumption for residential developments are reduced to 105 litres or less per head per day. Camden Local Plan policy CC3 goes further and requires major developments with high or intense water use, such as student housing, should include a grey water and rainwater harvesting system.

The London Plan policy SI 12 requires current and expected flood risk from all sources to be assessed and mitigation measures put in place where necessary. Where the development is identified being at risk of flooding, Camden Local Plan policy CC3 requires developments to ensure that finished floor levels are set no lower than 300mm above the predicted maximum water level.

Both the London Plan Policy SI 13 and Camden's Local Plan policies CC2 and CC3 require developments to 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 following drainage hierarchy:

- Rainwater use as a resource e.g rainwater harvesting
- Rainwater infiltration to ground at or close to source
- Rainwater attenuation in green infrastructure features for gradual release e.g green roofs
- Rainwater discharge direct to a watercourse
- Controlled rainwater discharge to a surface water sewer or drain
- Controlled rainwater discharge to a combined sewer.

7.1 Flood Risk Management

A *Flood Risk Assessment* has been prepared for the planning application by Pells Frischmann and confirms that the development is wholly located in Flood Zone 1, which is defined as land having a less than 0.1% annual probability of river or sea flooding. The report also confirms that there is a low risk of flooding to the development from surface water, sewers, groundwater and reservoirs.

7.2 Surface Water Run off

A *Drainage Strategy*, also by Pells Frischmann confirms that drainage systems will be designed to accommodate runoff volume from a 1 in 100-year storm plus 40% climate change rainfall event, to minimise overland flow routes and reduce the amount of runoff from the site.

To achieve this, cellular storage tanks are proposed below-ground to attenuate approximately 80% of the surface water runoff from the proposed development.

Additionally, approximately 376m² of permeable paving is proposed to limit the impermeable area of the site which is currently 100%.

A blue roof is proposed and will be situated below the permeable paving. This will treat run-off water by removing contaminants.

The report has identified other SUDs suitable for the development which will be incorporated into the landscape design including:

- Tree pits,
- Rain gardens
- Green roofs

The report concludes that with the combination of cellular storage tanks, permeable paving and blue roofs across the development, the surface water drainage strategy, based on sustainable drainage principles, has been developed in accordance with relevant local and national policy and standards.

7.3 Water Consumption

The water calculation in the table below shows how < 105 litres per head per day can be achieved. Residents in the affordable housing block will be metered on their water usage. This can change the behaviour of how occupants use their water, as they try to make savings.

Fitting:	Flow Rate/Capacity:	Water Use (L/person/day):
WC	6/3 litres dual flush	8.88
Wash Hand Basin	5 litres/min	9.48
Bath	170 litres to overflow	18.70
Shower	8 litres/min	34.96
Kitchen Tap	5 litres/min	12.56
Washing Machine	8.17 litres/kg	17.16
Dishwasher	1.25 litres/place setting	4.50
	Calculated Use	115
	Normalisation Factor	0.91
	Total Consumption	104.6

Proposed residential water flow rates/capacities

10. Pollution

This section will cover the following policies:

- London Plan Policies 5 SI 1 and D14
- Camden Local Plan 2017 Policies CC2, CC4, A4
- BREEAM New Construction 2019 V6 - Pollution

London Plan Policy SI 1 requires new developments to tackle poor air quality by seeking opportunities to identify and deliver improvements through development of site-specific Air Quality Plans. All major developments must be at least 'Air Quality Neutral'. Policy D14 of the London Plan seeks to reduce, manage and mitigate noise which may have significant adverse impacts on health and quality of life.

Camden's Local Plan Policy CC4 seeks to minimise the exposure of occupants to air pollution and any negative effect the development might have on local air quality. Air Quality Assessments (AQAs) are therefore required, and measures adopted to mitigate any impact identified. AQAs should also assess the risk of dust and emissions caused by demolition, construction or earthworks. Appropriate mitigation measures will be secured in a Construction Management Plan.

Policy A4 seeks to ensure that noise and vibration is appropriately considered at the design stage to protect existing and new residents from unacceptable levels of noise caused during the construction stage and when the new development is in operation. Noise and air pollution will also be addressed within the BREEAM assessment (Policy CC2).

8.1 Noise and Vibration

The London Plan seeks to reduce overall exposure to noise within London as well as protect tenants from noise within their homes. A *Noise and Vibration Planning Report* has been prepared by Sandy Brown to establish background sound levels around the site and determine the required acoustic performances for the facades.

Background noise levels were recorded at three locations around the existing site. Road traffic noise and pedestrian noise was identified as the most dominant noise source affecting the site, whilst occasional passing freight trains were noted but considered less significant. The report provides recommendations for façade sound insulation to ensure that compliant indoor ambient noise levels are achieved.

The potential for noise egress from proposed plant has also been addressed in the *Noise and Vibration Planning Report*. Specific plant is not yet known however cumulative noise levels have been measured at 1m from the worst affected windows of the nearby noise sensitive premises, and noise limits set to ensure that Camden's requirements are met.

The report also includes a vibration assessment and identifies key sources of vibration to be the Transport for London Northern Line running directly beneath the site (tunnels at Chalk Farm Station are 13 m below ground level), the existing mainline railway approaching London Euston station (approximately 100 m south of the site), and the Transport for London Overground line running between Kentish Town West station and Camden Road station (approximately 5 m south of site boundary). The report concludes that vibration is not expected to be an issue at this site.

8.2 Air Quality

Pollution During Operation

An *Air Quality Assessment* has been prepared by Air Quality Consultants. In compliance with London Plan policy SI 1, the report confirms that due to the development being 'car-free', and energy demand for the site will being provided by ASHPs and PV which do not generate emissions, the Proposed Development will have no significant effects on local air quality.

Pollution During Construction

In line with BREEAM Man 03 – Responsible Construction Practices criteria, the site will be registered with the Considerate Constructors Scheme with the aim of achieving at least 39 points across the 3 sections. The appointed Principal Contractor will also be required to implement best practice pollution prevention policies and procedures on site in accordance with Working at construction and demolition sites: PPG6, Pollution Prevention Guidelines.

The *Air Quality Assessment* identified that there is a medium risk of dust associated with construction related activities and a medium risk of dust associated with earthworks, demolition and trackout. A Dust Management Plan (DMP) will be prepared and integrated into the Site's Construction and Environmental Management Plan (CEMP) which is being produced by the Regal. The DMP will include a package of measures and procedures to be employed during construction to ensure that dust arising from site activities is managed in accordance with GLA Best Practice Guidance, and in conjunction with local neighbours. With the implementation of the mitigation measure, the *Air Quality Assessment* concludes that the overall effect on local air quality will be 'not significant.'

Air Quality Neutral

The *Air Quality Assessment* confirms that as the proposed development is car free and the only source of on-site combustion will be an emergency generator, it therefore complies with the requirement that all new developments in London should be at least air quality neutral.

Indoor Air Quality

In line with BREEAM requirements, an Indoor Air Quality Plan (IAQP) will be produced to reduce the potential for indoor air pollution and to support the physical health of building occupants by reducing the risk of health concerns associated with it.

The IAQP will be implemented into the design, specification and installation processes and cover the following:

- Removal of contaminant sources
- Dilution and control of contaminant sources
- Procedures for pre-occupancy flush out and purge ventilation
- Third party testing and analysis
- Maintaining good indoor air quality in-use

11. Conservation, Ecology and Biodiversity

This section will cover the following policies:

- London Plan Policies G1, G5 and G7
- Camden Local Plan 2017 Policy A3
- BREEAM New Construction 2018 V6 – Land Use and Ecology

The London Plan policy G1 requires green infrastructure to be planned and designed into new developments and managed in an integrated way to achieve multiple benefits. Policy G5 encourages a contribution to the greening of London by including urban greening as a fundamental element of site and building design. Measures such as high-quality landscaping (including trees), green roofs, green walls and nature-based sustainable drainage should be included in design proposals. Existing trees of value should be retained where possible in accordance with Policy G7 requirements.

Camden's Local Plan Policy A3 also requires inclusion of green infrastructure but also requires long term maintenance to be considered. New green infrastructure and landscaping should be adaptable to climate change and support native and priority species. The policy aims to maximise opportunities for biodiversity in and around developments in order to deliver a net gain in biodiversity and a range of wider environmental benefits.

Existing significant trees should be retained and protected where possible, and new trees planted as part of the landscaping scheme. Tree planting should be adaptable to climate change whilst supporting native species.

9.1 Pre-development Ecological Value

A *Biodiversity Impact Assessment* has been prepared by Ecology by Design to accompany the Planning Application and identified that habitats present on the existing site consists of buildings, hard landscaping, introduced shrub and broadleaved woodland. The buildings and hardstanding are considered to offer negligible value in terms of habitat value whilst the introduced shrub and woodland offer limited value due to their small scale and urban nature.

9.2 Ecological Enhancement

The development presents an opportunity to enhance the biodiversity within the new development with appropriate native and diverse planting.

New enhancement recommendations shall include:

- Soft landscaping composed of introduced shrub
- Biodiverse green roof
- Ground based green wall
- New tree planting
- Bird boxes, bat boxes and insect boxes

A *Habitat Management Plan* has also been prepared by Ecology by Design covering the first 5 years after project completion. This will ensure that the biodiversity net gains are reached.

As a result, the Proposed development is expected to enhance the biodiversity value of the site by 237.12%.

12. Summary

Below is a short summary for each section discussed in this report, showing how the application site meets the requirements set out in the National and Regional Planning Policies with regards to sustainability design and construction.

Energy

The Energy Strategy Overview indicates that the development can achieve a 37% improvement over Part L 2021 of the Building Regulations through implementation of passive measures, ASHP's and PV.

Transport

The Site benefits from excellent public transport connections and will provide secure cycle parking for building occupants and visitors.

The new development is also ideally located within close proximity to a wide range of local amenities reducing the need for car journeys.

Implementation of a Travel Plan for the development will encourage occupants to use these alternative more sustainable forms of transport, which are healthier alternatives and better for the local environment.

Materials

Materials for key building elements are encouraged to be responsibly sourced with 100% of timber and timber based products to be legally harvested and traded timber.

The design of the building will incorporate suitable durability and protection measures to prevent damage to vulnerable parts of the internal and external building and landscaping elements. This will minimise the frequency of replacement and maximising materials optimisation.

Waste

A SWMP will be produced prior to commencement of any work on site. The SWMP will detail how waste minimisation strategies will be incorporated into the design. The waste hierarchy is employed on site to minimise the volume of waste produced.

Additionally, sufficient storage space will be provided to enable segregation of recyclable materials as well as general waste in line with the Stevenage Borough Council guidelines.

Water, Flood Risk and Drainage

The *Flood Risk Assessment* confirms that the site is wholly located in Flood Zone 1 and has a low risk of flooding from all sources.

Surface water run-off will be attenuated on-site in attenuation tanks to regulate the discharge of high volumes of rainwater. The proposed surface water drainage strategy will be designed for a 1 in 100-year event plus an allowance for 40% Climate Change.

Blue roofs and permeable paving are proposed to remove pollutants from run off water. Green roofs, tree pits and raingardens are also proposed.

Residential water consumption will be restricted to < 105 litres per head per day in line with London Plan policies and residents of the affordable housing block will be metered on their water usage to encourage a change the behaviour of how occupants use their water.

Fitting:	Flow Rate/Capacity:	Water Use (L/person/day):
WC	6/3 litres dual flush	8.88
Wash Hand Basin	5 litres/min	9.48
Bath	170 litres to overflow	18.70
Shower	8 litres/min	34.96
Kitchen Tap	5 litres/min	12.56
Washing Machine	8.17 litres/kg	17.16
Dishwasher	1.25 litres/place setting	4.50
	Calculated Use	115
	Normalisation Factor	0.91
	Total Consumption	104.6

Pollution

The development seeks to reduce the demand for car journey's by promoting the use of public transport links and providing ample secure cycle parking to encourage a move away from car travel.

The reduction in operational CO_2 emissions and promotion of more sustainable means of transport will contribute positively to the local air quality.

The *Air Quality Assessment* confirms that as the proposed development is car free and the only source of on-site combustion will be an emergency generator, it therefore complies with the requirement that all new developments in London should be at least air quality neutral.

The new development has been assessed against noise to establish the prevailing environmental sound climate around the site.

Suitable mitigation measures and glazing specifications will be established to ensure that development will achieve acceptable noise levels for internal noise and noise egress from surrounding roads is minimised.

Conservation, Ecology and Biodiversity

The *Preliminary Ecological Appraisal* has identified the existing site as being of very low ecological value. Proposed enhancements such as green roofs, green wall and tree planting will result in a significant improvement in terms of biodiversity value.

13. Conclusion

This Sustainability Report has been developed in support of an application for full planning permission for the redevelopment of 100 Chalk Farm Road within London Borough of Camden

The development is aiming to achieve 37% improvement over Part L 2021 Building Regulations and BREEAM Excellent. Through this objective, the Applicant is ensuring that they maximise the opportunities to enhance the environmental performance of the development and ultimately exceed Building Regulations, London Plan and London Borough of Camden Local Plan requirements.

Appendix A – BREEAM Pre-Assessment

100 Chalk Farm

BREEAM Pre-Assessments

BREEAM NC 2018 V6

Prepared for Regal Chalk Farm Limited

January 2024

11494_WCL_ZZ_ZZ_RP_Y_0_006

WHITECODE
CONSULTING

Whitecode Consulting Ltd registered in England & Wales with company number 03004480
Registered Office – 26-27 The Hill, Northfleet, Kent, DA11 9EU

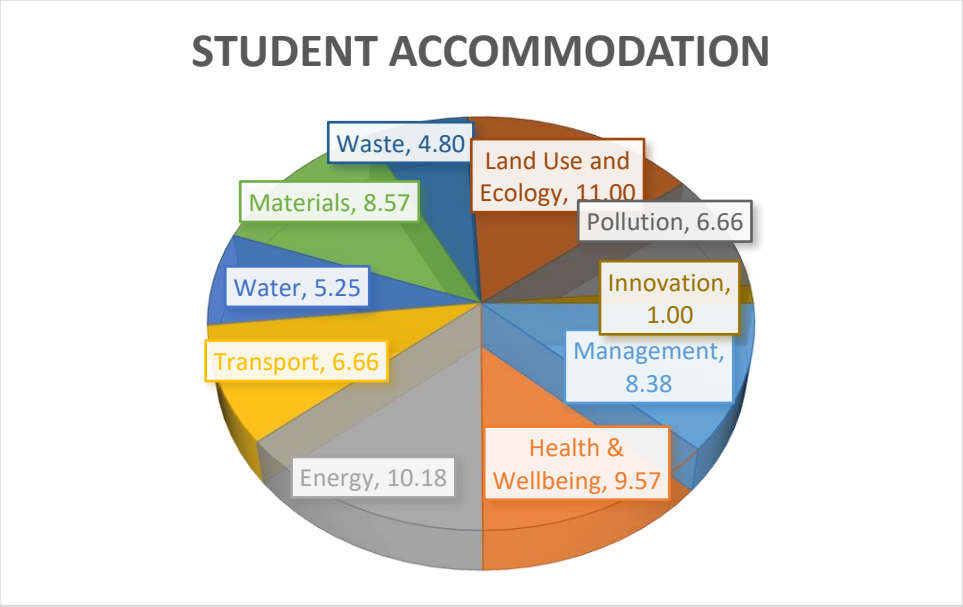
Executive Summary

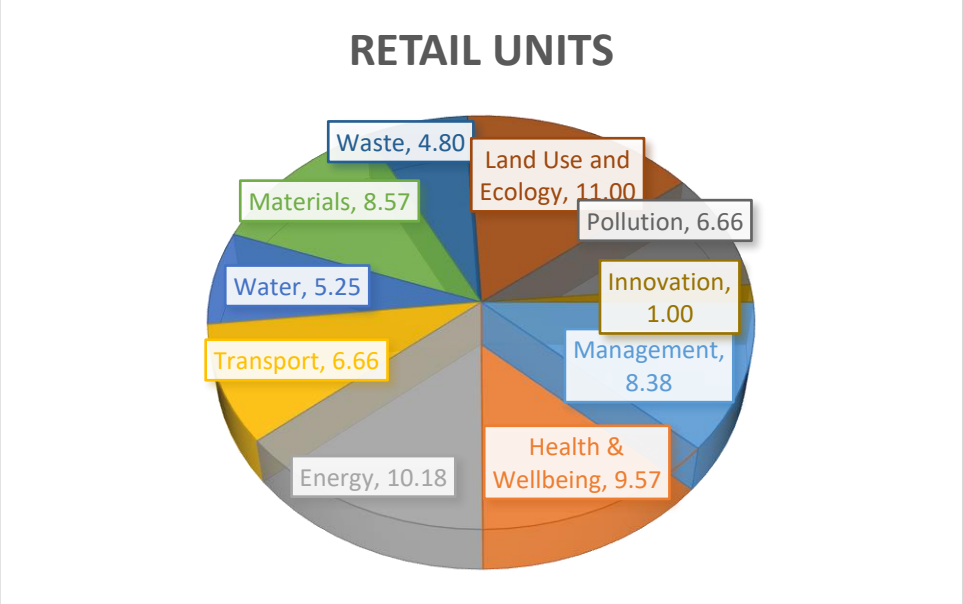
This BREEAM New Construction 2018 V6 has been produced at the request of Regal Chalk Farm Limited by Whitecode Consulting Ltd who is licensed by BRE to carry out BREEAM New construction (NC) assessments.

Two pre-assessments have been prepared for the proposed development to covering the student accommodation and commercial units.

Early engagement with the whole project team and a strong desire for implementing good sustainability practices has ensured that credit opportunities have been maximised, and this has resulted in a BREEAM "Excellent" rating being achieved for the development. Other notable contributing factors include:

- Collaboration with the design team towards Mat 01 Options Appraisal.
- Centrally located site therefore benefitting from good public transport links.
- Site located on previously developed land with potential for improvements to the ecological value of the site.
  The predicted scores for each category are shown in the charts below:





The individual scores in each of the 9 categories contribute to an overall predicted score for the fully fitted student accommodation of 72.07% and for the shell and core retail units of 70.30% which equates to a BREEAM 'Excellent' rating.

Contents

1.0 Introduction

Whitecode Consulting Ltd has been appointed to undertake a BREEAM pre-assessments and set the BREEAM target and strategy for the proposed new build of 100 Chalk Farm, which is situated in the London Borough of Camden.

The purpose of this report is to demonstrate that non-residential elements of the development will achieve a BREEAM Excellent rating as required by Policy CC" of the Camden Plan 2017:

Non-domestic developments of 500 sqm of floorspace or above to achieve "excellent" in BREEAM assessments.

This pre-assessment will provide the Design Team with information relating to the key actions that should be carried out to ensure successful certification. The team should take note of the information and guidance provided within this report and associated guidance notes, to ensure that the design accounts for the full BREEAM NC requirements.

1.1 Description of Development

Full planning permission is sought for the following description of development (herein referred to 'the Proposed Development'):

"Demolition of existing buildings and redevelopment of the site to provide two buildings containing purpose-built student accommodation with associated amenity and ancillary space (Sui Generis), affordable residential homes (Class C3), ground floor commercial space (Class E) together with public realm, access, servicing, and other associated works."

The development will provide 264 student accommodation units, together with 1000 sqm (GIA) of commercial space, 30 affordable residential units, with public realm improvements, new areas of landscaping, amenity and play space, and improved accessibility to the site.

The new student accommodation and retail units will be registered against the BREEAM New Construction 2018 V6 assessment scheme For this development, it is a requirement that a BREEAM 'Excellent' rating achieved. This requires a score of at least 70%.

1.2 What is BREEAM?

BREEAM (Building Research Establishment Environmental Assessment Method) is the world's largest method of assessment, rating and certifying the sustainability of buildings. Its main purpose is to raise awareness amongst owners, occupiers, designers and operators of the benefits of taking a sustainable approach.

BREEAM is a performance based assessment method and certification scheme for new and refurbished buildings with a primary aim of mitigating the life cycle impacts of new buildings on the environment. The performance of a building is quantified by a number of individual measures and associated criteria stretching across a range of environmental issues. The individual measures are grouped into categories of sustainable design. These categories are as follows:

- Management
- Health & Wellbeing
- Energy
- Transport
- Water
- Materials
- Waste
- Land Use & Ecology
- Pollution
- Innovation

Once the pre-assessment is completed, the BREEAM assessment is undertaken in two stages; design stage which provides an interim BREEAM certificate rating and post construction stage which provides a final BREEAM certified rating.

Interim BREEAM Certification represents the performance of the building at the design stage of the assessment, typically prior to the beginning of operations on site. Certification at this stage does not, therefore, represent the buildings final BREEAM performance.

The post construction stage assessment and subsequent BREEAM Certification represents the as built performance and BREEAM rating. A final post construction stage assessment is submitted after practical completion of the building works and certification typically received within 6 months.

1.3 Calculating the BREEAM Rating

The overall score is made up of individual credits. To be awarded a credit, the relevant criteria for each assessment issue must be met. The percentage of credits is then calculated for each section. This is then multiplied by the corresponding section weighting which gives the overall environmental section score which are added together to give the overall BREEAM score.

1.4 Early Engagement with BREEAM

Almost half of the available credits in the assessment require action at RIBA Stages 1 and 2 and can be integrated into the project early. Desk studies, structured design team consultations and appointments of specialists such as ecologists and security consultants are some examples of relatively straightforward actions that can contribute to achieving credits, if carried out at the appropriate stage. As the design process progresses through each RIBA Stage fewer credits remain achievable leading to more challenging credits having to be targeted.

1.5 Evidence Principles

Evidence clearly demonstrating compliance with all the relevant criteria for all credits sought is required. This evidence must be unambiguous and must demonstrate to a 3rd party reviewer that the criteria have been met. The evidence must be robust in terms of its source and traceability and relevant to the stage of the assessment. As a minimum, the evidence provided to demonstrate compliance should always contain key information such a project name, author, date and revision numbers. The use of existing project information to demonstrate compliance will reduce time and cost of compliance but is not necessary.

1.6 Methodology

This BREEAM Pre-Assessments have been conducted based on proposal drawings and reports provided.

Section 2 of this pre-assessment examines each category in detail to identify which individual credits are possible. It includes a description of the credit requirements and notes where credits could be potentially achieved or where credits have not been targeted.

The design team should refer to the BREEAM NC 2018 and BREEAM RFO 2014 manuals for further details of the requirements for each credit. This can be found using the following link:

https://www.breeam.com/NC2018/

https://www.breeam.com/ndrefurb2014manual/

2.0 Detailed Review

100 Chalk Farm Road

BREEAM NC 2018 V6 Pre-Assessment

Student Accommodation

Prepared for Regal Chalk Farm Ltd

11494-S-BNC-DS-0001

Revision 1

09 January 2024

WHITECODE
CONSULTING

Whitecode Consulting Ltd registered in England & Wales with company number 03004480

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Category 1 : Management

Code:	Category:	Credit Overview:	Notes:	Available Credits:	Credits Targeted:
Man 01	Project Brief and Design	• Documentation confirming project team meetings took place covering roles, responsibilities and contributions to each key phase of the project delivery • Evidence demonstrating how the meetings influenced or changed the Initial Project Brief		1	1
		• Third party consultation documentation demonstrating that the following matters have been discussed: - Functionality, build quality and impact (including aesthetics). - Provision of appropriate internal and external facilities (for future building occupants and visitors or users). - Management and operational implications. - Maintenance resources implications. - Impacts on the local community, e.g. local traffic or transportation impact. - Opportunities for shared use of facilities and infrastructure with the community or appropriate stakeholders. - Compliance with statutory (national or local) consultation requirements. - Energy use and sustainability measures. - Implementing principles and processes that deliver an inclusive and accessible design. • Evidence demonstrating how the consultation influenced or changed the Initial Project Brief		1	1
		• Appointment of a BREEAM AP throughout Stages 2 and 4		2	2
Man 02	Life Cycle and Service Life Planning	• Elemental Lifecycle Cost Analysis is carried out at Stage 2	Credit not targeted	2	0
		• Component Level Lifecycle Cost Analysis is carried out at Stage 4	Credit not targeted	1	0
		• Provide the predicted capital cost of the project (£k/m2) including contingencies, and commitment to provide actual information for the final stage assessment.		1	1
Man 03	Responsible Construction Practices	• Pre-requisite - All timber used on site is responsibly sourced		0	0
		• Contractor operates an EMS certified to ISO14001	Credit not targeted	1	0
		• Appointment of a BREEAM AP for the Construction Phase		1	1
		• Confirmation of compliance with all sections of the Responsible Construction Checklist.		2	2
		• Monitor and record water and energy consumption throughout construction and to report the total net water consumption and total carbon dioxide emissions (kgCO2/project value) at post construction stage		1	1
		• Monitor and record transport movements arising from deliveries to and waste from the site and a commitment to report separately for waste and deliveries, the total fuel consumption (litres) and total carbon dioxide emissions (kgCO2), plus total distance travelled (kn) at post construction.		1	1

Man 04	Commissioning and Handover	• A schedule of commissioning and testing that identifies appropriate commissioning required for the scope of works, including a suitable timescale for commissioning and re-commissioning of all relevant works carried out is required.		1	1
		• During the design stage, the client or the principal contractor appoints an appropriate project team member to: a: Undertake design reviews and giving advice on suitability for ease of commissioning. b: Provide commissioning management input to construction programming and during installation stages. c: Manage the commissioning, performance testing and handover or post-handover stages.		1	1
		• Prior to handover, develop two building user guides - a non-technical user guide for distribution to the building occupiers and a technical user guide for the premises facilities managers. • Prepare two training schedules timed appropriately around handover and proposed occupation plans		1	1
		• Complete post-construction testing and inspection to quality-assure the integrity of the building fabric, including continuity of insulation, avoidance of thermal bridging and air leakage paths (this is through airtightness testing and a thermographic survey).		1	1
Man 05	Aftercare	• Provide aftercare support to the building occupiers through having in place operational infrastructure and resources		1	1
		• Seasonal commissioning will be undertaken over 12 month after substationally occupied		1	1
		• Post-occupancy evaluation exercise one year after initial building occupation	Credit not targeted	1	0
				21	16
				11.00%	8.38%

Category 2 : Health and Wellbeing

Code:	Category:	Credit Overview:	Notes:	Available Credits:	Credits Targeted:
Hea 01	Visual Comfort	• External lighting has been designed in accordance with BS 5489-1:2013 Lighting of roads and public amenity areas and BS EN 12464-2:2014 Light and lighting - Lighting of work places - Part 2: Outdoor work places. • Internal lighting provides illuminance levels in accordance with SLL Code for Lighting 2012 and CIBSE Lighting Guide 7. All compact fluorescent lamps are fitted with high frequency ballasts. • Internal lighting is zoned to allow for occupant control in relevant areas of the building.		1	1
		• Daylighting calculations demonstrating that 80% of allkitchens, living rooms, dining rooms, studies and relevant common areas achieve at least 2% average daylight factor and either a or b & c below: a. A uniformity ratio of at least 0.3. Or, a minimum point daylight factor of at least 0.3 times the relevant average daylight factor b. At least 80% of the room has a view of sky from desk height c. The room depth criterion d/w +d/HW < 2/(1-RB) is satisfied OR • 80% of occupied spaces achieve average daylight illuminance of at least 300 lux for 2000 hours per year or more and • A minimum daylight illuminance at the worst lit point of at least 90 lux for 2000 hours per year or more	Credit not targeted	2	0
		• Calculations demonstrating that 95% of the floor area in 95% of spaces for each relevant building area provides an adequate view out		1	1

		• A glare control strategy in designed to eliminate potential glare in relevant areas of the building.	Credit not targeted	1	0
Hea 02	Indoor Air Quality	• Pre-requisite An indoor air quality plan is produced to minimise air pollution		0	0
		• The building has been designed to minimise the indoor concentration and recirculation of pollutants in the building	Credit not targeted	1	0
		• Decorative and finishing product specified meet the VOC testing and emission levels set out in the BREEAM manual		2	2
		• Formaldehyde and TVOC level measurements taken post construction		1	1
Hea 04	Thermal Comfort	• Thermal modelling of the building is carried out in accordance with CIBSE AM11 Building Energy and Environmental Modelling, to ensure thermal comfort levels are achieved		1	1
		• Thermal modelling includes a projected climate change scenario, in accordance with CIBSE Guide A.		1	1
		• The temperature control strategy for the building and its users is based on the results of the thermal modelling		1	1
Hea 05	Acoustic Performance	• Achieve indoor ambient noise levels that comply with the design ranges given in Section 7 of BS 8233:2014.		1	1
		• Airborne sound insulation values are at least 5 dB higher and impact sound insulation values are at least 5 dB lower than the performance standards in the relevant building regulations or standards.	Credts not targeted	2	0
		• Achieve the requirements relating to sound absorption within residential spaces and within the common spaces of the building described in the relevant building regulations or building standards national guidance		1	1
Hea 06	Security	• A Suitably Qualified Security Specialist (SQSS) conducts an evidence based Security Needs Assessment (SNA) during or prior to Concept Design Stage • Recommendations are implemented		1	1
Hea 07	Safe & Healthy Surroundings	Where external site areas form part of the assessed development the following apply: • Dedicated and safe cycle paths are provided from the site entrance to any cycle storage, and connect to off-site cycle paths where applicable. • Dedicated and safe footpaths are provided on and around the site providing suitable links for the following: a: The site entrance to the building entrance b: Car parks (where present) to the building entrance c: The building to outdoor space d: Connecting to off-site paths where applicable. • Pedestrian drop-off areas are designed off, or adjoining to, the access road and should provide direct access to other footpaths. • Delivery areas are not accessed through general parking areas and do not cross or share the following: a: pedestrian and cyclist paths b: outside amenity areas accessible to building users and general public. • There is a dedicated parking or waiting area for goods vehicles with appropriate separation from the manoeuvring area and staff and visitor car parking. • Parking and turning areas are designed for simple manoeuvring according to the type of delivery vehicle likely to access the site, thus avoiding the need for repeated shunting.		1	1

		• There is an outside space providing building users with an external amenity area.		1	1
				19	13
				14.00%	9.57%

Code:	Category:	Credit Overview:	Notes:	Available Credits:	Credits Targeted:
Ene 01	Reduction of Energy Use and Carbon Emissions	• Calculate an Energy Performance Ratio for New Construction (EPR NC). Compare the EPR NC achieved with the BREEAM benchmarks.	• Further credits possible once energy modelling has been carried out.	9	4
		• Additional energy modelling is undertaken during the design and post-construction stage to generate predicted operational energy consumption figures. Carry out a risk assessment to highlight any significant design, technical, and process risks that should be monitored and managed throughout the construction and commissioning process.		4	4
Ene 02	Energy Monitoring	• Energy meters are installed to monitor at least 90% of annual energy consumption from heating, hot water, humification, cooling, ventilation, pumps, lighting, small power, renewables, controls, lifts. • Sub-metering of different function areas or departments		1	1
Ene 03	External Lighting	• Drawing or specification confirming the average initial luminous efficacy of the external light fittings within the construction zone is not less than 70 luminaire lumens per circuit Watt. • Drawings or specification confirming all external light fittings are automatically controlled for prevention of operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.		1	1
Ene 04	Low Carbon Design	• Analyse the proposed building design and development during Concept Design to identify opportunities for the implementation of passive design measures. • The building uses passive design measures to reduce the total heating, cooling, mechanical ventilation and lighting loads and energy consumption in line with the findings of the passive design analysis • Quantify the reduced total energy demand and carbon dioxide (CO_2-eq) emissions resulting from the passive design measures.		1	1
		• The passive design analysis also includes an analysis of free cooling and identifies opportunities for the implementation of free cooling solutions.	Credit not targeted	1	0
		• A feasibility study has been carried out by the completion of the Concept Design stage to establish the most appropriate low and zero carbon (LZC) energy source(s) for the building/development • A local LZC technology is specified for the building in line with the recommendations • Quantify the reduced regulated carbon dioxide (CO_2-eq) emissions resulting from the feasibility study.		1	1
Ene 06	Energy Efficient	• A transportation system analysis carried out to determine and specify the optimum number, size and type of lifts that is most energy efficient		1	1

	Transportation Systems	• For each newly specified lift, the following three energy efficient features are specified and for existing lifts within the project scope of influence, at least two of the following energy efficient features are specified: a. The lifts operate in a standby condition during off-peak periods. For example the power side of the lift controller and other operating equipment such as lift car lighting, user displays and ventilation fans switch off when the lift has been idle for a prescribed length of time. b. The lift car lighting and display lighting provides an average lamp efficacy, (across all fittings in the car) of > 55 lamp lumens/circuit Watt. c. The lift uses a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor. Where the use of regenerative drives is demonstrated to save energy, they are specified.		1	1
Ene 8	Energy Efficient Equipment	• Identify the building's unregulated energy consuming loads and estimate their contribution to the total annual unregulated energy consumption of the building, assuming a typical/standard specification. • Identify the systems and/or processes that use a significant proportion of the total annual unregulated energy consumption of the development and its operation. • Demonstrate a meaningful reduction in the total annual unregulated energy consumption of the building	Credits not targeted	2	0
				22	14
				16.0%	10.18%

Code:	Category:	Credit Overview:	Notes:	Available Credits:	Credits Targeted:
Tra 1	Transport Assessment & Travel Plan	The site-specific travel assessment (or statement) shall cover as a minimum: a: If relevant, travel patterns and attitudes of existing building or site users towards cycling, walking and public transport, to identify relevant constraints and opportunities. b: Predicted travel patterns and transport impact of future building or site users. c: Current local environment for pedestrians and cyclists, accounting for any age-related requirements of occupants and visitors. d: Reporting of the number and type of existing accessible amenities, within 500m of the site. e: Disabled access accounting for varying levels and types of disability, including visual impairment. f: Calculation of the existing public transport Accessibility Index (AI) g: Current facilities for cyclists. • Develop a site-specific travel plan that provides a long term management strategy which encourages more sustainable travel. The travel plan must include measures to increase or improve more sustainable modes of transport and movement of people and goods during the building's operation.		2	2

Tra 2	Sustainable Transport Measures	• The development has an AI >8 (1) (TfL Website states 29) • Install compliant cycle storage spaces to meet 1 per 10 staff and 1 per 2 residents (1) • Provide at least two compliant cyclists' facilities for the building users - Showers, Changing facilities, Lockers. Drying spaces (1) • The development is within 500m of 3 amenities (cash machine, post box, gym, food outlet, park) (1)	Credits not targeted: • Demonstrate an increase over the existing AI through: - negotiation with local bus, train or tram companies to increase the frequency of the local service provision for the development (2) OR - through provision of a diverted bus route, a new or enhanced bus stop, or other similar solutions (3) • The existing AI calculated in Tra 01 achieves >8 (1) • Provide a public transport information system in a publicly accessible area, to allow building users access to up-to-date information on the available public transport and transport infrastructure (1) • Provide electric recharging stations of a minimum of 3kW for at least 10% of the total car parking capacity for the development (1) • Set up and communicate a car sharing group with priority spaces for at least 5% of the total car parking capacity for the development and spaces located nearest the development entrance (1) • At least three existing accessible amenities are present within 500m of the building (1) • Ensure more than one new accessible amenity (3)	10	6
				12	8
				10.00%	6.66%

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Code:	Category:	Credit Overview:	Notes:	Available Credits:	Credits Targeted:
Wat 1	Water Consumption	• Specification demonstrating that the proposed water consuming components installed achieve a 40% reduction in water consumption when compared to the BREEAM baseline. The following specification achieves this: WC to have effective flush volume of 3.75 litres; wash hand basin taps to be 5 litres/min; showers to be 6 litres/min; baths 140 litres; kitchen tap to be 6 litres/min; commercial sized dishwasher 5 litres/rack; commercial washing machines 7.5 litres/kg.		5	3
Wat 2	Water Monitoring	• Drawings or specification demonstrating provision of a compliant water meter, with a pulsed output, on the main water supply to the building.		1	1
Wat 3	Major Leak Detection and Prevention	• A compliant leak detection system is installed on the mains water supply within the building and between the building and the utilities water meter.		1	1
		• Flow control devices that regulate the supply of water to each WC area/facility are installed		1	1
				8	6
				7.00%	5.25%

Category 6

Code:	Category:	Credit Overview:	Notes:	Available Credits:	Credits Targeted:
Mat 1	Life Cycle Impacts	• Carry out building LCA options appraisal of 2 to 4 significantly different superstructure design options. • At Technical Design carry out building LCA options appraisal of 2 to 3 significantly different superstructure design options	Further credits possible following calculations	7	4
Mat 2	Environmental Impacts from Construction Products	• Specify construction products with EPD that achieve a total EPD points score of at least 20	Credit not targeted	1	0
Mat 3	Responsible Sourcing	• Pre-requisite - All timber is legally harvested and traded timber		0	0
		• The design team have produced a Sustainable Procurement Plan to help guide the procurement of materials for the project.		1	1
		• Confirmation of the level of responsible sourcing for each new construction material i.e BES6001, ISO14001, FSC	• Additional credit possible dependent on level of responsible sourcing	3	1
Mat 5	Design for Durability and Resilience	• Vulnerable parts of the internal/external building and landscape areas are identified and suitable durability/protection measures specified and installed to protect these areas from impacts of high pedestrian traffic, vehicular and trolley movements. • Key exposed building elements have been designed and specified to limit long and short term degradation due to environmental factors.		1	1
Mat 6	Material Efficiency	• Opportunities for material optimisation have been investigated and implemented throughout RIBA Stages 1-5		1	1
				14	8
				15.00%	8.57%

Category 7

Code:	Category:	Credit Overview:	Notes:	Available Credits:	Credits Targeted:
Wst 01	Construction Waste Management	• Pre-demolition audit		1	1
		• A compliant Resource Management Plan is developed which includes benchmarks, commitments and procedures to produce ≤7.5m3 / 100m2 of non hazardous construction waste.		3	2
		• Divert 85% by volume (90% by tonnage) of construction waste from landfill		1	1
Wst 2	Recycled Aggregates	• All aggregate types and uses are identified, the quantity in tonnes, the region and distance from the site is identified and entered into the BREEAM Wst 02 calculator to calculate the Project Sustainable Aggregate points	Credit not targeted	1	0
Wst 3	Operational Waste	• Drawings demonstrating provision of sufficient space for operational recyclable waste volumes to be segregated and stored • Confirmation of labelling • Food waste collection is provided		1	1

Wst 5	Adaption to Climate Change	• Conduct a climate change adaptation strategy appraisal at Concept Design using a systematic risk assessment to identify the impact of expected extreme weather conditions arising from climate change on the building over its projected life cycle. The assessment should cover the installation of building services and renewable systems, as well as structural and fabric resilience aspects		1	1
Wst 6	Functional Adaptability	• Conduct a study to explore the ease of disassembly and the functional adaptation potential of different design scenarios by the end of Concept Design. Develop recommendations or solutions based on the study • Provide an update, during Technical Design, on how the recommendations or solutions have been implemented where practical and cost effective (omissions must be justified0, changes to the recommendations and solutions during the development of the Technical Design. • Produce a building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants.		2	2
				10	8
				6.00%	4.80%

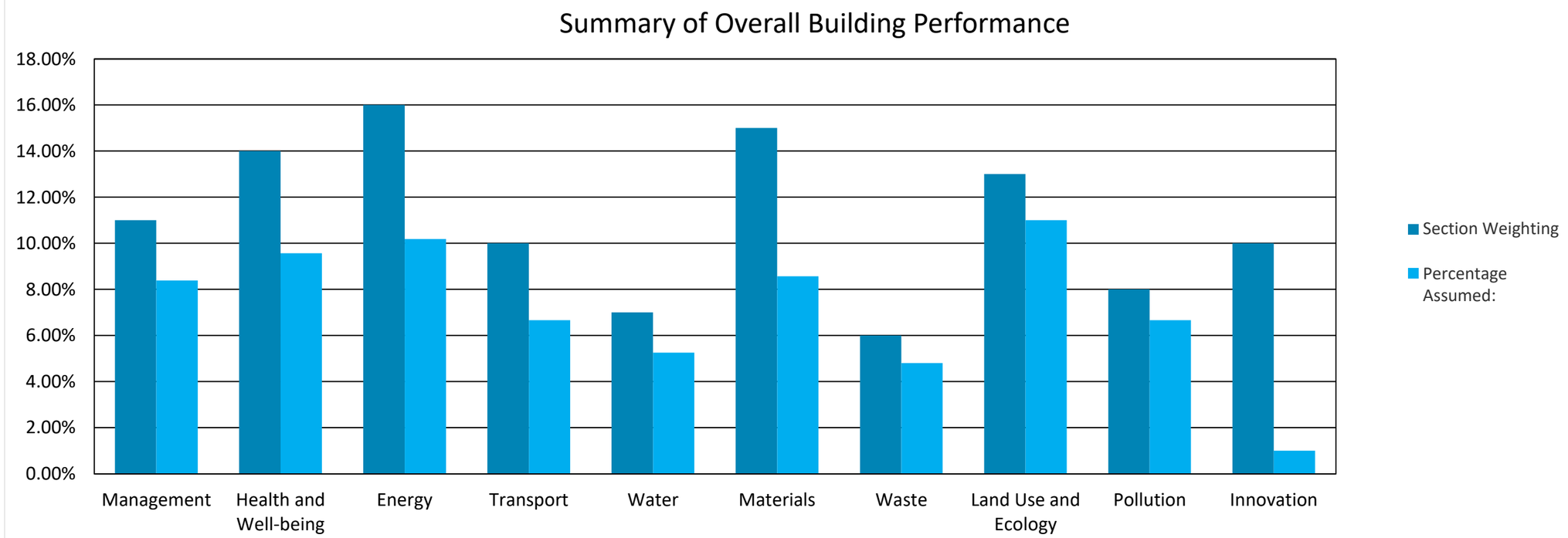
Code:	Category:	Credit Overview:	Notes:	Available Credits:	Credits Targeted:
Le 1	Site Selection	• At least 75% of the proposed development is on previously occupied land		1	1
		• A contaminated land professional undertakes a site investigation, risk assessment and appraisal, which deems that land within the development footprint to be affected by contamination. A remediation strategy will be implemented, in line with the report	Credit not trageted	1	0
Le 2	Ecological Value of the site and protection of ecological features	• A Suitably Qualified Ecologist (SQE) carries out a survey and evaluation for the site early enough to influence site preparation works, layout and, where necessary, strategic planning decisions • The SQE's survey and evaluation determines the site's ecological baseline • Recommendations and data collected from the survey and evaluation are shared with appropriate project team members to influence decisions made for activities during site preparation, design and construction works, which can support ecological features • Identify the optimal ecological outcomes for the site. • Identify, appraise and select measures to meet the optimal ecological outcomes for the site in line with the mitigation hierarchy of action		2	2
Le 3	Mitigating Ecological Impact	• On-site measures for managing negative ecological impacts during site preparation and construction are implemented in-practice.(1)		3	3
Le 4	Ecological Change and Enhancement	• Measures have been implemented that enhance ecological value, which are based on input from the project team and SQE in collaboration with representative stakeholders and data collated as part of the 'Determining ecological outcomes' in LE 02	Credits not targeted: • Up to three credits are awarded based on the change in ecological value occurring as a result of the project. (3)	4	3

Le 5	Long Term Impact on Biodiversity	• Measures have been implemented to manage and maintain ecology throughout the project (1) • A Landscape and Ecology Management Plan, is developed in accordance with BS 42020:2013 Section 11.1 covering at least the first five years after project completion (1)		2	2
				13	11
				13.00%	11.00%

Code:	Category:	Outstanding Evidence:	Notes:	Available Credits:	Credits Targeted:
Pol 1	Impact of Refrigerants	Pre-requisite - All systems (with electric compressors) must comply with the requirements of EN 378:2016 and EN 378-2:2016 and where refrigeration systems containing ammonia are installed, the Institute of Refrigeration Ammonia Refrigeration Systems Code of Practice		0	0
		• 1 credit where the systems using refrigerants have Direct Effect Life Cycle CO2 equivalent emissions (DELC CO2e) of ≤ 1000 kgCO2e/kW cooling/heating capacity.	• Additional credit where the systems using refrigerants have Direct Effect Life Cycle CO2 equivalent emissions (DELC CO2e) of ≤ 100 kgCO2e/kW cooling/heating capacity. OR Where air-conditioning or refrigeration systems are installed the refrigerants used have a Global Warming Potential (GWP) ≤ 10.	2	1
		• Where systems using refrigerants have a permanent automated refrigerant leak detection system installed; OR where an inbuilt automated diagnostic procedure for detecting leakage is installed. In all instances a robust and tested refrigerant leak detection system must be installed and must be capable of continuously monitoring for leaks. The system must be capable of automatically isolating and containing the remaining refrigerant(s) charge in response to a leak detection incident		1	1
Pol 2	NOx Emissions	• All heating and hot water is supplied by non-combustion systems		2	2
Pol 3	Surface Water Run Off	• A site-specific flood risk assessment (FRA) confirms the development is in a flood zone that is defined as having a low annual probability of flooding. The FRA takes all current and future sources of flooding into consideration		2	2
		• For Greenfield sites, drainage measures are specified so that the peak rate of run-off from the site to the watercourses (natural or municipal) is no greater for the developed site than it was for the pre-development site. This should comply at the 1-year and 100-year return period events.		1	1
		• Flooding of property will not occur in the event of local drainage system failure (caused either by extreme rainfall or a lack of maintenance); AND • Drainage design measures are specified so that the post-development run-off volume, over the development lifetime, is no greater than it would have been prior to the assessed site's development. This must be for the 100-year 6-hour event, including an allowance for climate change • Any additional predicted volume of run-off for this event is prevented from leaving the site by using infiltration or other SuDS techniques.		1	1

		• There is no discharge from the developed site for rainfall up to 5 mm and • Areas with a low risk source of watercourse pollution, an appropriate level of pollution prevention treatment is provided, using appropriate SuDS techniques.	Credit not targeted	1	0
Pol 4	Reduction of Night Time Light Pollution	• All external lighting (except safety and security) can be automatically switched off between 23:00 and 07:00; that any safety or security lighting complies with the lower levels of lighting recommended during these hours in accordance with Table 2 of ILP guidance notes, and; any illuminated advertisements are designed in compliance with ILP PLG05 The Brightness of Illuminated Advertisements.		1	1
Pol 5	Noise Attenuation	• Where there are noise-sensitive areas within the assessed building or noise-sensitive areas within 800 m radius of the assessed site, a noise impact assessment compliant with BS 4142:2014 is commissioned.		1	1
				12	10
				8.00%	6.66%

Code:	Category:	Outstanding Evidence:	Evidence received to date:	Available Credits:	Credits Assumed:
Inn 2 - Man 3	Responsible Construction Practices	• Compliance with all sections of the Responsible Construction Checklist		1	1
				10	1
				10%	1%



Category	Available Credits:	Credits Assumed:	Credits Achieved:	Section Weighting	Percentage Assumed:
Management	21	16	0	11.00%	8.38%
Health and Well-being	19	13	0	14.00%	9.57%
Energy	22	14	0	16.00%	10.18%
Transport	12	8	0	10.00%	6.66%
Water	8	6	0	7.00%	5.25%
Materials	14	8	0	15.00%	8.57%
Waste	10	8	0	6.00%	4.80%
Land Use and Ecology	13	11	0	13.00%	11.00%
Pollution	12	10	0	8.00%	6.66%
Innovation	10	1	0	10.00%	1.00%
Total:	141	95	0	110.00%	72.07%
				BREEAM Rating	Excellent

100 Chalk Farm Road

BREEAM NC 2018 V6 Pre-Assessment

Retail

Prepared for Regal Chalk Farm Ltd

11494-S-BNC-DS-0001

Revision 1

09 January 2024

WHITECODE
CONSULTING

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Category 1 : Management									
Code:	**Category:**	**Credit Overview:**	**RIBA Stage**	**Responsible Party:**	**Notes:**	**Open/ Closed:**	**Available Credits:**	**Credits Targeted:**	**Credits Achieved:**
Man 01	**Project Brief and Design**	• Documentation confirming project team meetings took place covering roles, responsibilities and contributions to each key phase of the project delivery • Evidence demonstrating how the meetings influenced or changed the Initial Project Brief	2	• Design Team		Open	1	1	
		• Third party consultation documentation demonstrating that the following matters have been discussed: - Functionality, build quality and impact (including aesthetics). - Provision of appropriate internal and external facilities (for future building occupants and visitors or users). - Management and operational implications. - Maintenance resources implications. - Impacts on the local community, e.g. local traffic or transportation impact. - Opportunities for shared use of facilities and infrastructure with the community or appropriate stakeholders. - Compliance with statutory (national or local) consultation requirements. - Energy use and sustainability measures. - Implementing principles and processes that deliver an inclusive and accessible design. • Evidence demonstrating how the consultation influenced or changed the Initial Project Brief	2	• Design Team		Open	1	1	
		• Appointment of a BREEAM AP throughout Stages 2 and 4	4	• Design Team		Open	2	2	
Man 02	Life Cycle and Service Life Planning	• Provide the predicted capital cost of the project (£k/m2) including contingencies, and commitment to provide actual information for the final stage assessment.		• Client		Open	1	1	
Man 03	Responsible Construction Practices	• Pre-requisite - All timber used on site is responsibly sourced		• Contractor		Open	0	0	
		• Appointment of a BREEAM AP for the Construction Phase		• Contractor		Open	1	1	
		• Compliance with all sections of the Man 03 Construction Checklist are followed		• Contractor		Open	2	2	
		• Monitor and record water and energy consumption throughout construction and to report the total net water consumption and total carbon dioxide emissions (kgCO2/project value) at post construction stage		• Contractor		Open	1	1	
		• Monitor and record transport movements arising from deliveries to and waste from the site and a commitment to report separately for waste and deliveries, the total fuel consumption (litres) and total carbon dioxide emissions (kgCO2), plus total distance travelled (km) at post construction.		• Contractor		Open	1	1	

Man 04	Commissioning and Handover	• A schedule of commissioning and testing that identifies appropriate commissioning required for the scope of works, including a suitable timescale for commissioning and re-commissioning of all relevant works carried out is required.		• Contractor		Open	1	1	
		• During the design stage, the client or the principal contractor appoints an appropriate project team member to: a: Undertake design reviews and giving advice on suitability for ease of commissioning. b: Provide commissioning management input to construction programming and during installation stages. c: Manage the commissioning, performance testing and handover or post-handover stages.		• Contractor		Open	1	1	
		• Prior to handover, develop two building user guides - a non-technical user guide for distribution to the building occupiers and a technical user guide for the premises facilities managers. • Prepare two training schedules timed appropriately around handover and proposed occupation plans		• Contractor		Open	1	1	
		• Complete post-construction testing and inspection to quality-assure the integrity of the building fabric, including continuity of insulation, avoidance of thermal bridging and air leakage paths (this is through airtightness testing and a thermographic survey).		• Contractor		Open	1	1	
						Total:	18	14	0
						Total %:	11.00%	8.55%	0%

Category 2 : Health and Wellbeing									
Code:	**Category:**	**Credit Overview:**	**RIBA Stage**	**Responsible Party:**	**Notes:**	**Open/ Closed:**	**Available Credits:**	**Credits Targeted:**	**Credits Achieved:**
Hea 01	Visual Comfort	• External lighting has been designed in accordance with BS 5489-1:2013 Lighting of roads and public amenity areas and BS EN 12464-2:2014 Light and lighting - Lighting of work places - Part 2: Outdoor work places. • Internal lighting provides illuminance levels in accordance with SLL Code for Lighting 2012 and CIBSE Lighting Guide 7. All compact fluorescent lamps are fitted with high frequency ballasts. • Internal lighting is zoned to allow for occupant control in relevant areas of the building.		• M&E		Open	1	1	
		• Daylighting calculations demonstrating that 35% of sales areas achieve at least 2% point daylight factor and all other areas meet either a or b & c below: a. A uniformity ratio of at least 0.3. Or, a minimum point daylight factor of at least 0.3 times the relevant average daylight factor b. At least 80% of the room has a view of sky from desk height c. The room depth criterion d/w +d/HW < 2/(1-RB) is satisfied OR • 80% of occupied spaces achieve average daylight illuminance of at least 300 lux for 2000 hours per year or more and • A minimum daylight illuminance at the worst lit point of at least 90 lux for 2000 hours per year or more		• Daylight Consultant		Open	2	2	
		• Calculations demonstrating that 95% of the floor area in 95% of spaces for each relevant building area provides an adequate view out		• Architect		Open	1	1	
Hea 04	Thermal Comfort	• Thermal modelling of the building is carried out in accordance with CIBSE AM11 Building Energy and Environmental Modelling, to ensure thermal comfort levels are achieved		• Contractor		Open	1	1	
		• Thermal modelling includes a projected climate change scenario, in accordance with CIBSE Guide A.		• Contractor		Open	1	1	

Hea 05	Acoustic Performance	• Achieve indoor ambient noise levels that comply with the design ranges given in Section 7 of BS 8233:2014.		• Contractor		Open	1	1	
Hea 06	Security	• A Suitably Qualified Security Specialist (SQSS) conducts an evidence based Security Needs Assessment (SNA) during or prior to Concept Design Stage • Recommendations are implemented	2	• Design Team		Open	1	1	
Hea 07	Safe & Healthy Surroundings	Where external site areas form part of the assessed development the following apply: • Dedicated and safe cycle paths are provided from the site entrance to any cycle storage, and connect to off-site cycle paths where applicable. • Dedicated and safe footpaths are provided on and around the site providing suitable links for the following: a: The site entrance to the building entrance b: Car parks (where present) to the building entrance c: The building to outdoor space d: Connecting to off-site paths where applicable. • Pedestrian drop-off areas are designed off, or adjoining to, the access road and should provide direct access to other footpaths. • Delivery areas are not accessed through general parking areas and do not cross or share the following: a: pedestrian and cyclist paths b: outside amenity areas accessible to building users and general public. • There is a dedicated parking or waiting area for goods vehicles with appropriate separation from the manoeuvring area and staff and visitor car parking. • Parking and turning areas are designed for simple manoeuvring according to the type of delivery vehicle likely to access the site, thus avoiding the need for repeated shunting.		• Design Team		Open	1	1	
		• There is an outside space providing building users with an external amenity area.		• Design Team		Open	1	1	
						Total:	11	10	0
						Total %:	8.00%	7.27%	0%

Category 3 : Energy									
Code:	**Category:**	**Credit Overview:**	**RIBA Stage**	**Responsible Party:**	**Notes:**	**Open/ Closed:**	**Available Credits:**	**Credits Targeted:**	**Credits Achieved:**
Ene 01	Reduction of Energy Use and Carbon Emissions	• Calculate an Energy Performance Ratio for New Construction (EPR NC). Compare the EPR NC achieved with the BREEAM benchmarks.		• Energy Consultant	• Further credits possible once energy modelling has been carried out.	Open	9	4	
		• Additional energy modelling is undertaken during the design and post-construction stage to generate predicted operational energy consumption figures. Carry out a risk assessment to highlight any significant design, technical, and process risks that should be monitored and managed throughout the construction and commissioning process.		• Energy Consultant		Open	4	4	
Ene 02	Energy Monitoring	• Energy meters are installed to monitor at least 90% of annual energy consumption from heating, hot water, humification, cooling, ventilation, pumps, lighting, small power, renewables, controls, lifts. • Sub-metering of different function areas or departments		• M&E		Open	2	2	
Ene 03	External Lighting	• Drawing or specification confirming the average initial luminous efficacy of the external light fittings within the construction zone is not less than 70 luminaire lumens per circuit Watt. • Drawings or specification confirming all external light fittings are automatically controlled for prevention of operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.		• M&E		Open	1	1	

Ene 04	Low Carbon Design	• Analyse the proposed building design and development during Concept Design to identify opportunities for the implementation of passive design measures. • The building uses passive design measures to reduce the total heating, cooling, mechanical ventilation and lighting loads and energy consumption in line with the findings of the passive design analysis • Quantify the reduced total energy demand and carbon dioxide (CO_2-eq) emissions resulting from the passive design measures.	2	• Energy Consultant		Open	1	1	
		• A feasibility study has been carried out by the completion of the Concept Design stage to establish the most appropriate low and zero carbon (LZC) energy source(s) for the building/development • A local LZC technology is specified for the building in line with the recommendations • Quantify the reduced regulated carbon dioxide (CO_2-eq) emissions resulting from the feasibility study.	2	• Energy Consultant		Open	1	1	
						Total:	19	13	0
						Total %:	14.0%	9.57%	0%

Category 4: Transport

Code:	Category:	Credit Overview:	RIBA Stage	Responsible Party:	Notes:	Open/ Closed:	Available Credits:	Credits Targeted:	Credits Achieved:
Tra 1	Transport Assessment & Travel Plan	The site-specific travel assessment (or statement) shall cover as a minimum: a: If relevant, travel patterns and attitudes of existing building or site users towards cycling, walking and public transport, to identify relevant constraints and opportunities. b: Predicted travel patterns and transport impact of future building or site users. c: Current local environment for pedestrians and cyclists, accounting for any age-related requirements of occupants and visitors. d: Reporting of the number and type of existing accessible amenities, within 500m of the site. e: Disabled access accounting for varying levels and types of disability, including visual impairment. f: Calculation of the existing public transport Accessibility Index (AI) g: Current facilities for cyclists. • Develop a site-specific travel plan that provides a long term management strategy which encourages more sustainable travel. The travel plan must include measures to increase or improve more sustainable modes of transport and movement of people and goods during the building's operation.	2	• Transport Consultant		Open	2	2	

Tra 2	Sustainable Transport Measures	• The development has an AI >8 (1) (TfL Website states 29) • Install 5 compliant cycle storage spaces (1) • Provide at least two compliant cyclists' facilities for the building users - Showers, Changing facilities, Lockers. Drying spaces (1) • The development is within 500m of 3 amenities (cash machine, post box, gym, food outlet, park) (1)	2	• Transport Consultant/ Design Team	Credits not targeted: • Demonstrate an increase over the existing AI through: - negotiation with local bus, train or tram companies to increase the frequency of the local service provision for the development (2) OR - through provision of a diverted bus route, a new or enhanced bus stop, or other similar solutions (3) • The existing AI calculated in Tra 01 achieves >8 (1) • Provide a public transport information system in a publicly accessible area, to allow building users access to up-to-date information on the available public transport and transport infrastructure (1) • Provide electric recharging stations of a minimum of 3kW for at least 10% of the total car parking capacity for the development (1) • Set up and communicate a car sharing group with priority spaces for at least 5% of the total car parking capacity for the development and spaces located nearest the development entrance (1) • At least three existing accessible amenities are present within 500m of the building (1) • Ensure more than one new accessible amenity (3)	Open	10	4	
						Total:	12	6	0
						Total %:	11.50%	5.75%	0%

Category 5 : Water

Code:	Category:	Credit Overview:	RIBA Stage	Responsible Party:	Notes:	Open/ Closed:	Available Credits:	Credits Targeted:	Credits Achieved:
Wat 2	Water Monitoring	• Drawings or specification demonstrating provision of a compliant water meter, with a pulsed output, on the main water supply to the building.		• Contractor		Open	1	1	
Wat 3	Major Leak Detection and Prevention	• A compliant leak detection system is installed on the mains water supply within the building and between the building and the utilities water meter.		• Contractor		Open	1	1	
		• Flow control devices that regulate the supply of water to each WC area/facility are installed		• Contractor		Open	1	1	
						Total:	8	3	0
						Total %:	7.00%	2.62%	0%

Category 6 : Materials

Code:	Category:	Credit Overview:	RIBA Stage	Responsible Party:	Notes:	Open/ Closed:	Available Credits:	Credits Targeted:	Credits Achieved:
Mat 1	Life Cycle Impacts	• Carry out building LCA options appraisal of 2 to 4 significantly different superstructure design options. • At Technical Design carry out building LCA options appraisal of 2 to 3 significantly different superstructure design options	Pre-planning submission	• LCA Consultant	Further credits possible following calculations	Open	7	4	
Mat 3	Responsible Sourcing	• Pre-requisite - All timber is legally harvested and traded timber		• Contractor		Open	0	0	
		• The design team have produced a Sustainable Procurement Plan to help guide the procurement of materials for the project.	2	• Contractor		Open	1	1	
		• Confirmation of the level of responsible sourcing for each new construction material i.e BES6001, ISO14001, FSC		• Contractor	• Additional credit possible dependent on level of responsible sourcing	Open	3	2	
Mat 5	Design for Durability and Resilience	• Vulnerable parts of the internal/external building and landscape areas are identified and suitable durability/protection measures specified and installed to protect these areas from impacts of high pedestrian traffic, vehicular and trolley movements. • Key exposed building elements have been designed and specified to limit long and short term degradation due to environmental factors.		• Architect		Open	1	1	
Mat 6	Material Efficiency	• Opportunities for material optimisation have been investigated and implemented throughout RIBA Stages 1-5	All	• Design Team		Open	1	1	
						Total:	14	9	0
						Total %:	17.50%	11.25%	0%

Category 7 : Waste

Code:	Category:	Credit Overview:		Responsible Party:	Notes:	Open/ Closed:	Available Credits:	Credits Targeted:	Credits Achieved:
		Complete	2		• Pre-demolition audit	Closed	1	1	1
Wst 01	Construction Waste Management	• A compliant Resource Management Plan is developed which includes benchmarks, commitments and procedures to produce ≤7.5m3 / 100m2 of non hazardous construction waste.		• Contractor		Open	3	2	
		• Divert 85% by volume (90% by tonnage) of construction waste from landfill		• Contractor		Open	1	1	
Wst 3	Operational Waste	• Drawings demonstrating provision of sufficient space for operational recyclable waste volumes to be segregated and stored • Confirmation of labelling		• Contractor		Open	1	1	
Wst 5	Adaption to Climate Change	• Conduct a climate change adaptation strategy appraisal at Concept Design using a systematic risk assessment to identify the impact of expected extreme weather conditions arising from climate change on the building over its projected life cycle. The assessment should cover the installation of building services and renewable systems, as well as structural and fabric resilience aspects	2	• Design Team		Open	1	1	

Wst 6	Functional Adaptability	• Conduct a study to explore the ease of disassembly and the functional adaptation potential of different design scenarios by the end of Concept Design. Develop recommendations or solutions based on the study • Provide an update, during Technical Design, on how the recommendations or solutions have been implemented where practical and cost effective (omissions must be justified0, changes to the recommendations and solutions during the development of the Technical Design. • Produce a building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants.	2	• Design Team		Open	2	2	
						Total:	10	8	0
						Total %:	7.00%	5.60%	0%

Category 8 : Land Use and Ecology

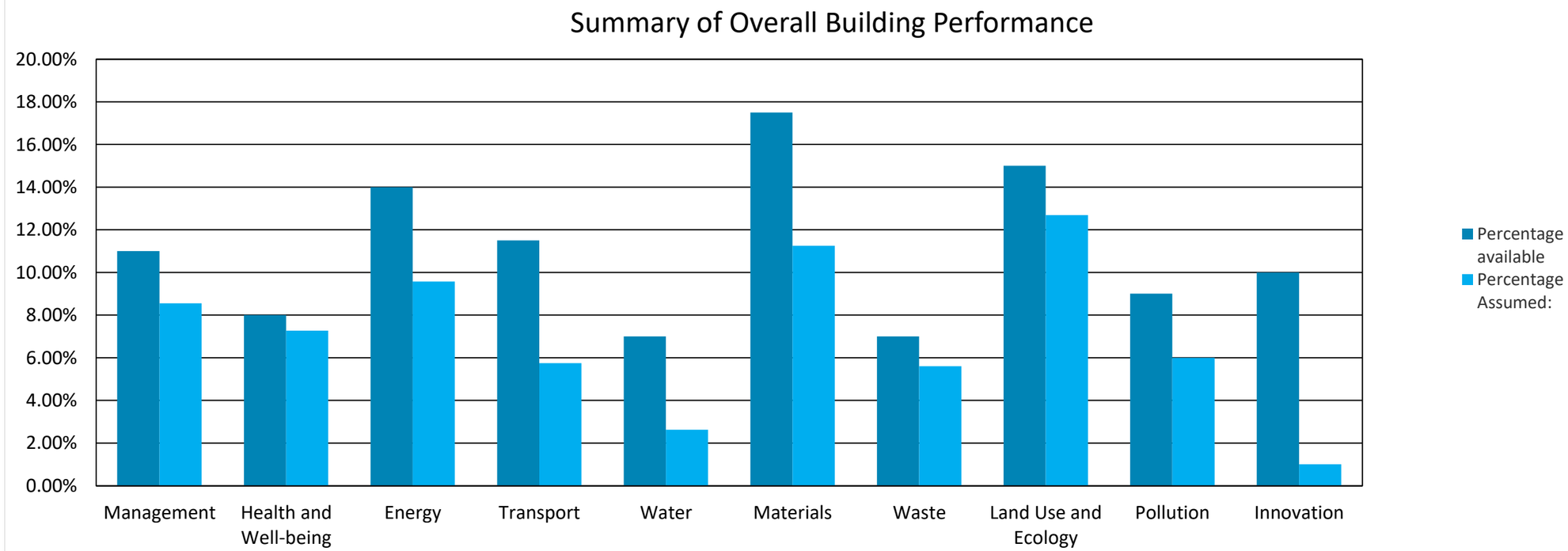
Code:	Category:	Credit Overview:		Responsible Party:	Notes:	Open/ Closed:	Available Credits:	Credits Targeted:	Credits Achieved:
Le 1	Site Selection	• At least 75% of the proposed development is on previously occupied land		• Contractor		Open	1	1	
Le 2	Ecological Value of the site and protection of ecological features	• A Suitably Qualified Ecologist (SQE) carries out a survey and evaluation for the site early enough to influence site preparation works, layout and, where necessary, strategic planning decisions • The SQE's survey and evaluation determines the site's ecological baseline • Recommendations and data collected from the survey and evaluation are shared with appropriate project team members to influence decisions made for activities during site preparation, design and construction works, which can support ecological features • Identify the optimal ecological outcomes for the site. • Identify, appraise and select measures to meet the optimal ecological outcomes for the site in line with the mitigation hierarchy of action	2	• Ecologist		Open	2	2	
Le 3	Mitigating Ecological Impact	• On-site measures for managing negative ecological impacts during site preparation and construction are implemented in-practice.(1)	2	• Ecologist		Open	3	3	
Le 4	Ecological Change and Enhancement	• Measures have been implemented that enhance ecological value, which are based on input from the project team and SQE in collaboration with representative stakeholders and data collated as part of the 'Determining ecological outcomes' in LE 02	2	• Ecologist	Credits not targeted: • Up to three credits are awarded based on the change in ecological value occurring as a result of the project. (3)	Open	4	3	
Le 5	Long Term Impact on Biodiversity	• Measures have been implemented to manage and maintain ecology throughout the project (1) • A Landscape and Ecology Management Plan, is developed in accordance with BS 42020:2013 Section 11.1 covering at least the first five years after project completion (1)		• Ecologist		Open	2	2	
						Total:	13	11	0
						Total %:	15.00%	12.69%	0%

Category 9 : Pollution

Code:	Category:	Outstanding Evidence:		Responsible Party:	Notes:	Open/ Closed:	Available Credits:	Credits Targeted:	Credits Achieved:
Pol 2	NOx Emissions	• All heating and hot water is supplied by non-combustion systems		• Contractor		Open	2	2	
		• A site-specific flood risk assessment (FRA) confirms the development is in a flood zone that is defined as having a low annual probability of flooding. The FRA takes all current and future sources of flooding into consideration		• Drainage Consultant		Open	2	2	

Pol 3	Surface Water Run Off	• For Greenfield sites, drainage measures are specified so that the peak rate of run-off from the site to the watercourses (natural or municipal) is no greater for the developed site than it was for the pre-development site. This should comply at the 1-year and 100-year return period events.		• Drainage Consultant		Open	1	1	
		• Flooding of property will not occur in the event of local drainage system failure (caused either by extreme rainfall or a lack of maintenance); AND • Drainage design measures are specified so that the post-development run-off volume, over the development lifetime, is no greater than it would have been prior to the assessed site's development. This must be for the 100-year 6-hour event, including an allowance for climate change • Any additional predicted volume of run-off for this event is prevented from leaving the site by using infiltration or other SuDS techniques.		• Drainage Consultant		Open	1	1	
Pol 4	Reduction of Night Time Light Pollution	• All external lighting (except safety and security) can be automatically switched off between 23:00 and 07:00; that any safety or security lighting complies with the lower levels of lighting recommended during these hours in accordance with Table 2 of ILP guidance notes, and; any illuminated advertisements are designed in compliance with ILP PLG05 The Brightness of Illuminated Advertisements.		• Contractor		Open	1	1	
Pol 5	Noise Attenuation	• Where there are noise-sensitive areas within the assessed building or noise-sensitive areas within 800 m radius of the assessed site, a noise impact assessment compliant with BS 4142:2014 is commissioned.		• Contractor		Open	1	1	
						Total:	12	8	0
						Total %:	9.00%	6.00%	0%

Category 10 : Innovation									
Code:	**Category:**	**Outstanding Evidence:**		**Action Required By:**	**Evidence received to date:**	**Open/ Closed:**	**Available Credits:**	**Credits Assumed:**	**Credits Achieved:**
Inn 2 - Man 3	Responsible Construction Practices	• All sections of the construction checklist are followed		• Contractor		Open	1	1	
						Total:	10	1	0
						Total %:	10%	1%	0%



Category	Available Credits:	Credits Assumed:	Credits Achieved:	Percentage available	Percentage Assumed:
Management	18	14	0	11.00%	8.55%
Health and Well-being	11	10	0	8.00%	7.27%
Energy	19	13	0	14.00%	9.57%
Transport	12	6	0	11.50%	5.75%
Water	8	3	0	7.00%	2.62%
Materials	14	9	0	17.50%	11.25%
Waste	10	8	0	7.00%	5.60%
Land Use and Ecology	13	11	0	15.00%	12.69%
Pollution	12	8	0	9.00%	6.00%
Innovation	10	1	0	10.00%	1.00%
Total:	127	83	0	110.00%	70.30%
				BREEAM Rating	Excellent

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