100 Avenue Road

Sustainability Statement

February 2025

REGAL

WHITECODE
CONSULTING

SUSTAINABILITY STATEMENT

100 Avenue Road

Prepared for Regal Avenue Road Limited

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Contents

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P01	December 2024	Preliminary for Comment	KV/AW	EH
P02	January 2025	Updated to comments	KV	EH
P03	February 2025	Updated Water section	KV	EH
P04	February 2025	Updated site plan	KV	EH

1. Introduction

This Sustainability Statement has been prepared by Whitecode Consulting Ltd on behalf of Regal Avenue Road Limited ('the Applicant') in support of s.73 Amendment Application for the redevelopment of 100 Avenue Road ('the Site') within London Borough of Camden ('LBC').

The Implemented Permission (ref. 2014/2617/P) was granted via Appeal (ref. APP/X5210/W/14/3001616) on 18 February 2016.

It has been subject to further scheme amendments facilitated under Section 96a of the Town & Country Planning Act (1990) (As Amended) and has been lawfully implemented, which was confirmed with a certificate of lawfulness issued on 8 February 2018 (ref: 2017/6884/P).

Whilst demolition works and basement construction works have undertaken by the previous owner (Essential Living), above ground construction works in respect of the Implemented Permission have stalled.

Regal Avenue Road Limited acquired the Site in 2024 and intend to bring forward the scheme as soon as practicable, subject to securing some amendments to the Implemented Permission to ensure its deliverability and compliance with the latest standards / Building Regulations

The description of s.73 Amendment Application development is as follows:

"Demolition of the existing building and redevelopment comprising residential units (Class C3) and flexible commercial, business and service use (Class E) and community use (Class F2(b)) with associated works including enlargement of the existing basement level to contain disabled car parking spaces and cycle parking, landscaping and access improvements."

This Sustainability Statement details how the Proposed Development, will meet the high sustainability aspirations of the London Plan and 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.

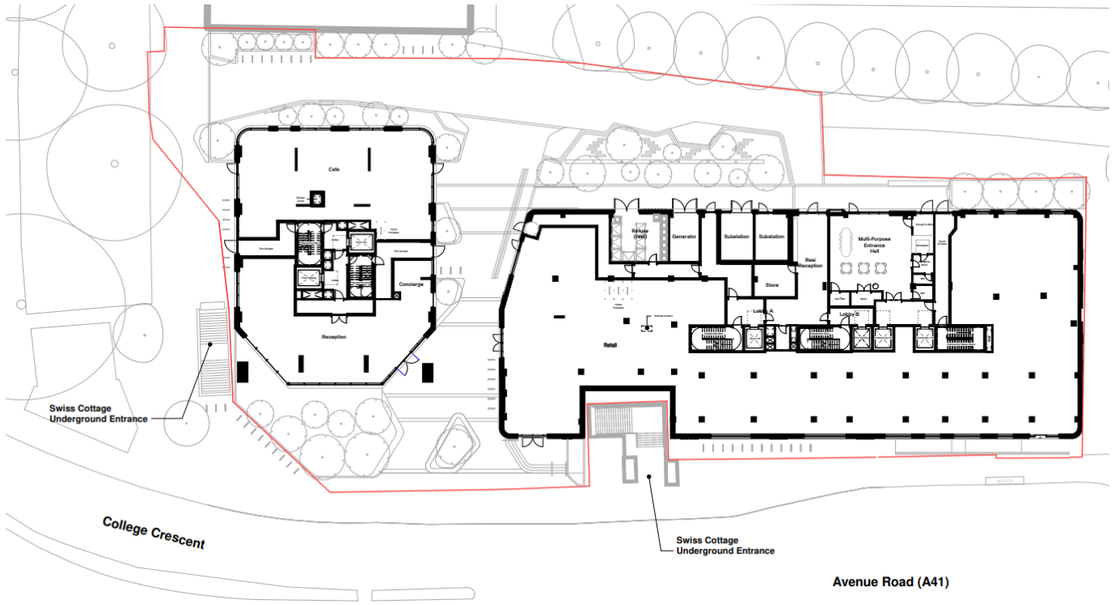


Figure 1.1 Proposed Site Plan

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 237 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 2024 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.

London Borough of Camden also provide a suite of additional Planning Guidance Documents. The documents relevant to sustainability are as follows:

- Air Quality
- Energy Efficiency and Adaptation
- Transport
- Trees

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 Statement* 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). 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	0.30
Air Permeability Rate	8m³/hm² (@50Pa)	3m³/hm² (@50Pa)	3m³/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 10% reduction in carbon emission for the domestic elements and 3% 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	216.7	11.8
After energy demand reduction (be lean)	194.3	11.5
Carbon savings over baseline	22.4	0.3
Carbon reduction over baseline	10%	3%

This meets the minimum carbon reduction required by the London Plan at the Be Lean stage for residential. As expected, it has not been possible to achieve the 15% requirement for the non-domestic buildings, however, it can be seen that a fabric-first approach has been adopted with low U-values, g-values and an air permeability target of $3m^3/hm^2$ (@50Pa).

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 communal ambient loop air source heat pumps have been identified as the most appropriate technology for the site, to provide the heating, cooling and hot water for the residential units and the proposed community space. Heating will be delivered via heat pumps located on the roofs to serve both residential accommodation and community space. The ASHP will provide heating flow and return temperatures of 35ºC.The VRF plant for the retail units has been split to enable separate management and ownership.

In addition to this, there is sufficient space on the roof to provide an array of PV panels. A total of 88.97 kWp PV panels is proposed, which will produce around 88,000 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 22% 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	216.7	11.8
After energy demand reduction (be lean)	194.3	11.5
After heat network/CHP (be clean)	194.3	11.5
After renewable energy (be green)	44.5	9.1
% carbon reduction	79%	22%
% carbon reduction site-wide	77%	

When considering for all stages of the energy hierarchy cumulatively, the *Energy Statement* concludes that the development can expect to achieve a sitewide CO2 emission reduction of 77% 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	228.5		
Be lean	205.7	22.8	10%
Be clean	205.7	0	0%
Be green	53.6	152.1	67%
Total savings		174.9	77%
		CO_2savings offset (tonnes CO_2)	
Off-set		1,608.4	

4. Management

This section will cover the following policies:

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

The proposed development includes 1187.7m2 of commercial floor space (Class E) and therefore must meet BREEAM Excellent in accordance with Local Plan Policy CC2.

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 100 Avenue Road 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

An *Overheating Assessment* has been carried out by Whitecode Consulting Ltd using dynamic simulations software, Integrated Environmental Solutions Virtual Environmental (IES VE) software, version 2024.0.1.0. 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 26°C 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 December 2024 based on the following assumptions:

- Glazing with a g-value of 0.40 applied to residential areas, and 0.30 to commercial areas.
- Windows and doors can be open 90 degrees.
- No NTC to all bedroom windows due to acoustic constraints.
- Use of ambient loop cooling in tower block and MVHR with tempered air in lower block to mitigate overheating when windows are shut overnight due to acoustic constraints.

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 commercial units, will require ambient loop cooling.

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 Caneparo Associates Limited to support the s.73 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 to the Proposed Development are Swiss Cottage, Finchley Road and West Hampstead which provide access to the Jubilee Line to destinations such as Willesden Green, Stanmore, Wembley Park and Stratford, via Central London. There are approximately 16 services per hour.

Alternatively, Finchley Road also offers Metropolitan Line services to Chesham, Watford, Uxbridge, Baker Street and Aldgate running approximately 24 times each hour.

West Hampstead Thameslink station is located 700m north of the Site and is served by the London Overground Line.

There are several bus stops along Avenue Road (A41) with the closest located adjacent to the Site (Swiss Cottage Station Stops). The bus stops are served by 7 bus routes which provide a total of 42 services an hour to destinations such as Camden Town, Archway, Central London, Marble Arch, Victoria and Paddington.

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, 1187.7m^2 of Class E commercial floorspace and 1372.1m2 of community floorspace will be delivered as part of the development, offering building users a further choice of amenities.

6.3 Cycling

The dedicated cycle parking provision for the proposed development has improved overall from the implemented permission.

A dedicated bike store providing 341 cycle spaces for long-stay cycle parking, and 98 cycle spaces for short-stay cycle parking. The long-stay cycle parking will be provided within basement level cycle stores for each block, which will be secured and lit, and accessible via lifts and stairs.

The design follows the LCDS principles, meets London Plan requirements for accessible cycles, provides a proportion of standard Sheffield stand spaces and provides two cargo cycle spaces at basement level external to the secure stores, for use by delivery cycles.

6.4 Car Parking

The proposed development will include the provision of 8 disabled parking spaces comprises 5 spaces for the Tower and 3 spaces for the Lower Block, which represents a minimum 3% parking to residential unit ratio, as prescribed within London Plan guidance. This approach has been discussed and agreed in principle with both LBC and TfL during pre-application discussions.

6.5 Pedestrian Access

The Site's landscaping will provide multiple pedestrian routes and accesses to the Site. The primary pedestrian access will be made via the Site's frontage to the west onto Avenue Road, where a centralised entrance space will be created between the two blocks of the Site, providing access both into the Site itself and creating a through-route from natural desire lines to the Swiss Cottage Open Space from the west and Underground station.

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 38 delivery and servicing trips daily, spread across the day. The vehicles which will make use of the ground floor public realm are anticipated to be low, with circa 5 HGV deliveries anticipated per day. Of these HGV movements, two will be attributed to the commercial space which can therefore be managed to take place outside of market operational hours.

A Delivery, Servicing and Waste Management Plan has been developed providing a strategy to be employed to mitigate impact.

6.7 Travel Plan

A Framework Travel Plan has also been prepared by Caneparo 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 adequate, safe and secure 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,
- Cycle training courses

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	100 Avenue Road WLC
	$kgCO_2e/m^2$ GIA		
Stages A1-A5	<850	<500	**497**
Stages B-C (excl. B6 & B7)	<350	<300	**236**
Stages A-C (excl. B6 & B7)	<1200	<800	**717**

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 Aspirational 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
Reuse of existing substructure	100.3
PT concrete slabs instead of RC slabs reducing concrete volume by 20%	13.62

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 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

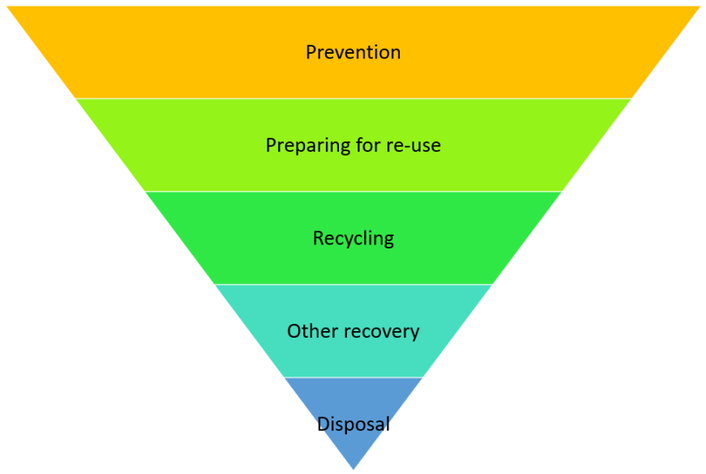
The *Circular Economy Statement* also addresses the need for an adaptable design. The following features have been considered for the Proposed Development:

- 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.
- 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

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 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 basemen level within the residential blocks, within close proximity to lobbies. The bin stores are provided in line with LBC's requirements for storage space.

8.5 Commercial Operational Waste

The tenant of the commercial unit is currently unknown however it is envisaged that the space will be likely be operated by retail/supermarket and cafe . It is proposed that a refuse storage area will be located within each 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.

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 Robert Bird Group 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, groundwater and reservoirs. The development is also not located in an area where historical flooding from sewers has occurred.

7.2 Surface Water Run off

A *Drainage Strategy*, also by Robert Bird Group 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, a proprietary geo-cellular system storage tank is proposed below-ground to attenuate 103m^3 of surface water runoff from the proposed development.

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

- Green roof systems,
- Soft landscaping,
- Internal attenuation tank

The report concludes that with the combination of attenuation tanks, green roofs and soft landscaping 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

Policy CC3 requires residential developments to achieve water consumption of <110 litres per person per day, including 5 litres for external water use. The water calculation in the table below shows how < 105 litres per head per day can be achieved. Residents 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
	External Use	5
	Total Consumption	109.6

Proposed residential water flow rates/capacities

Non-residential units will meet the minimum requirement for an Excellent rating by restricting internal water consumption to 25% below the BREEAM baseline. The table below shows how this can be achieved.

Fitting (where specified)	BREEAM Baseline	Commercial Unit	Unit
WC	6	4.5	Effective flush volume (litres)
WHB	10	8	Litres/min
Shower	12	10	Litres/min
Urinals (more than 1)	7.5	6	Litres/bowl/hour
Urinal (1 only)	10	8	Llitres/bowl/hour
Kitchen tap	10	8	Litres/min
Restaurant tap	10.3	9	Litres/min
Dishwasher (Commercial)	8	7	Litres/rack
Waste disposal	17	17	Litres/min
Washing machine (Commercial)	14	12	Litres/kg

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. An *Acoustic Report* has been prepared by RBA Acoustics to establish background sound levels around the site and determine the required acoustic performances for the facades.

Background noise levels were recorded at four locations around the existing site. 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 Acoustic Report, and considerations have been outlined to ensure that Camden's requirements are met.

The report also includes a vibration assessment and identifies the key sources of vibration to be the Transport for London Underground Jubilee Line and Metropolitan Line which is in close proximity to the site. The report concludes that tactile vibration is considered suitable in all areas. Re-radiated noise levels will be up to 40dBA L_{max} in worst affected areas, and therefore additional vibration measures are recommended to achieve the 35dBA L_{max} being adopted. These measures are discussed within the report.

8.2 Air Quality

Pollution During Operation

An *Air Quality Assessment* has been prepared by Logika Group. 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 and should be at least air quality neutral.

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 track out. A Dust Management Plan (DMP) will be prepared and integrated into the Site's Construction Management Plan (CMP) which is being produced by 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 *Preliminary Ecological Appraisal (PEA)* has been prepared by Greengage to accompany the s.73 Application and identified a protected plant species, Jersey Cudweed, was present on site. The site has negligible suitability to support other protected and notable species.

Mitigation measures are required to be implemented for the Jersey Cudweed plants.

9.2 Ecological Enhancement

The PEA also provides recommendations for enhancing the development. These recommendations include:

- Proposed groundcover and shrub planting including pollinator friendly species.
- Night scenting planting.
- Planting trees comprising fruiting and flowering species of known value to wildlife
- Biodiverse green roofs where feasible.
- Installation of bat boxes, ensuring a sympathetic lighting design to nocturnal fauna.
- Installation of bird boxes for a variety of bird species.

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 and Local Planning Policies with regards to sustainability design and construction.

Energy

The Energy Strategy Overview indicates that the development can achieve a 77% 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 Camden 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.

Residential water consumption will be restricted to < 105 litres per head per day in line with London Plan policies and all residents 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
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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 s.73 Application for the redevelopment of 100 Avenue Road within London Borough of Camden

The development is aiming to achieve 77% 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

BREEAM PRE-ASSESSMENT TRACKER - DRAFT PRIOR TO WORKSHOP

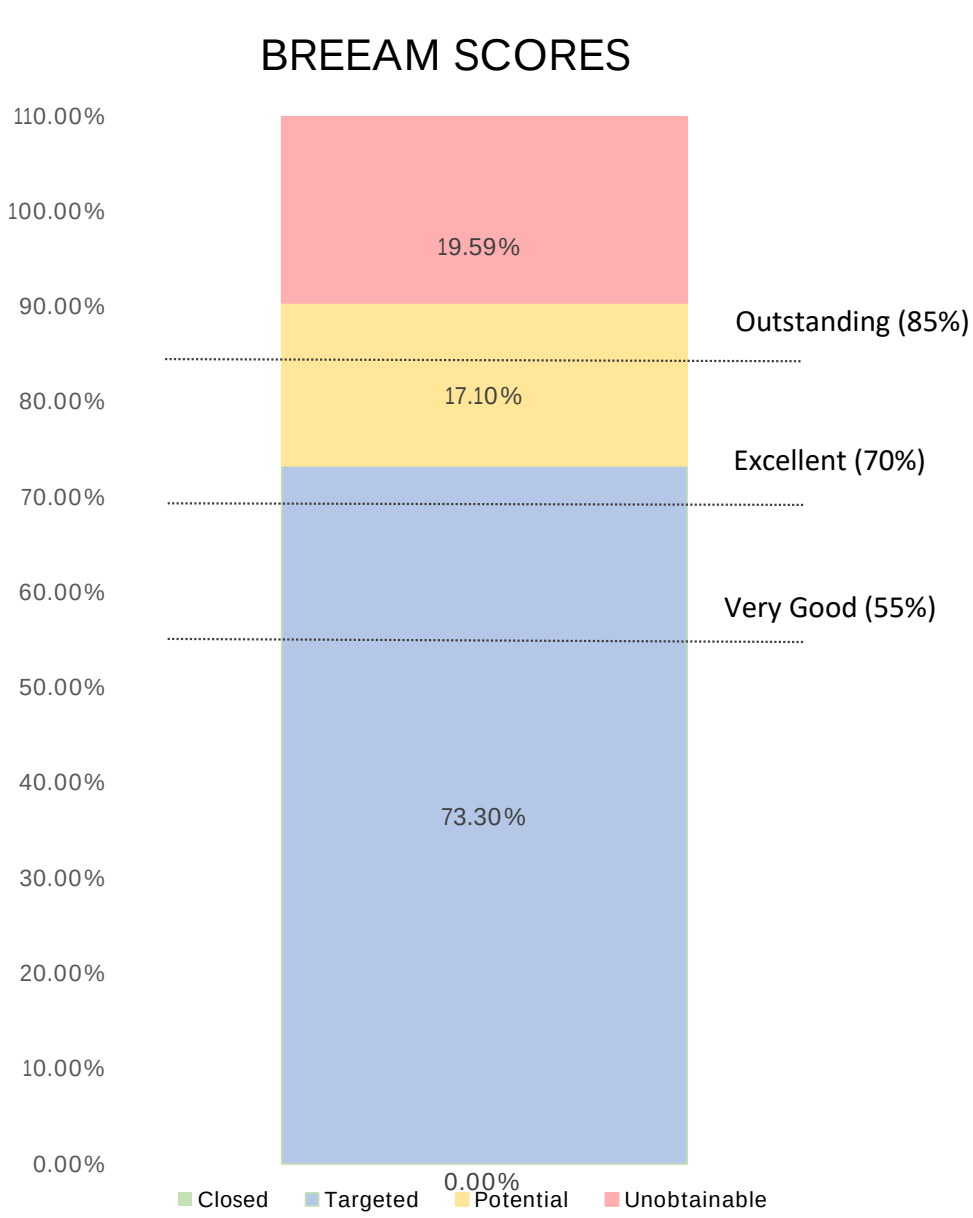
100 Avenue Road

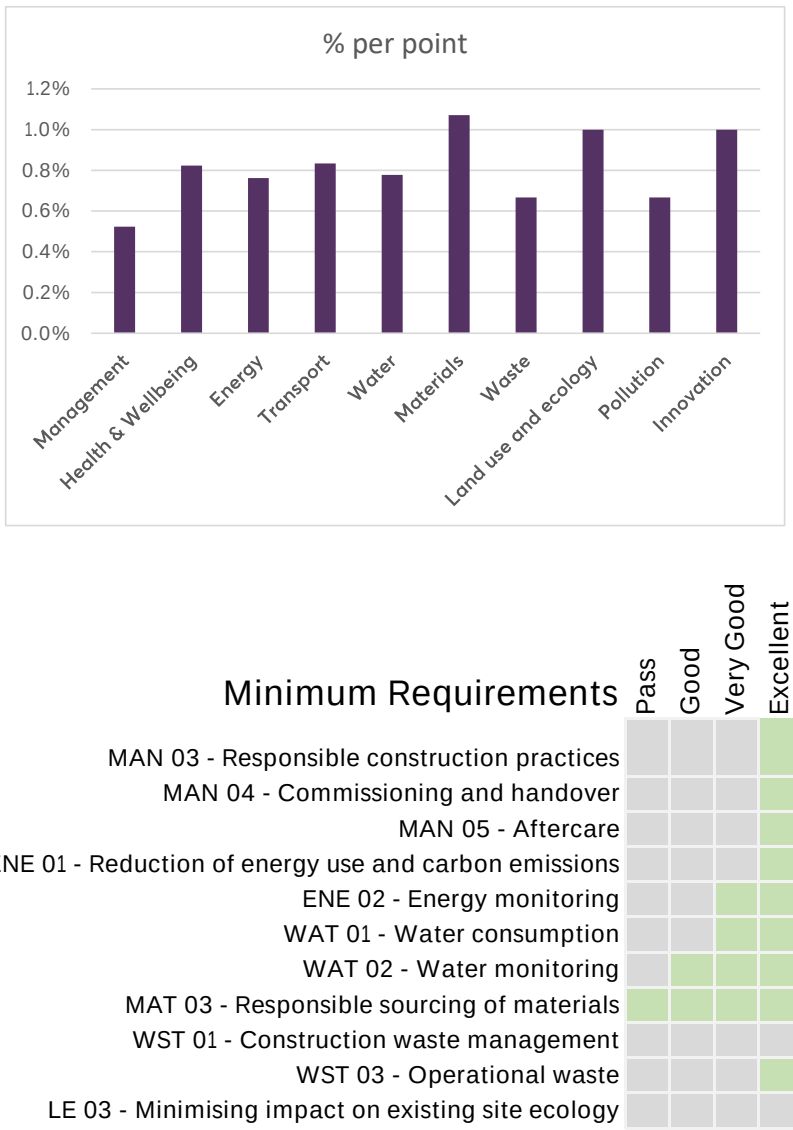
BREEAM UK NC 2018 Community Centre (The Winch)

18/11/2024

REGAL

SUMMARY OF SCORES





Minimum Requirements	Pass	Good	Very Good	Excellent	Outstanding
MAN 03 - Responsible construction practices					
MAN 04 - Commissioning and handover					
MAN 05 - Aftercare					
ENE 01 - Reduction of energy use and carbon emissions					
ENE 02 - Energy monitoring					
WAT 01 - Water consumption					
WAT 02 - Water monitoring					
MAT 03 - Responsible sourcing of materials					
WST 01 - Construction waste management					
WST 03 - Operational waste					
LE 03 - Minimising impact on existing site ecology					

Closed + Target Score: 73.30%

BREEAM PRE-ASSESSMENT TRACKER

100 Avenue Road

BREEAM UK NC 2018v6.1 Community Centre (The Winch)

For full BREEAM requirements and methodology, please refer to BREEAM New Construction 2018 6.1 Manual.

18/11/2024

		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
	MANAGEMENT										
MAN 01 PROJECT BRIEF AND DESIGN	PROJECT DELIVERY PLANNING										
	REQ 1	Prior to completion of the Concept Design, the project delivery stakeholders meet to identify and define Roles, responsibilities and Contributions for each key phase of project delivery.		1		1			ACTION		Stage 2 Project Team
	REQ 2	Consider all the items required by BREEAM (provided upon request) when defining roles, responsibilities and contributions for each key phase of the project.									
	REQ 3	Demonstrate how the Initial Project Brief, the Project Execution Plan, the Communication Strategy and the Concept Design have been influenced.									
	STAKEHOLDER CONSULTATION (INTERESTED PARTIES)										
	REQ 4	Prior to completion of RIBA Stage 2, the design team consult with all interested parties on matters that cover the minimum consultation content .		1			1			Consultation documents with external stakeholders to be provided. Extensive documentation required covering all consultation points.	Stage 2 Project Team
	REQ 5	Demonstrate how consultation has influenced the Initial Project Brief and Concept Design.									
	REQ 6	Provide consultation feedback to all parties by RIBA Stage 4.									
	BREEAM AP (CONCEPT DESIGN)										
	REQ 8	Strategic performance targets are formally agreed early in the design process.		1		1			ACTION	Lucy Cox to fulfill BREEAM AP role.	Regal (LC)
	REQ 9	At Concept Design Stage (RIBA Stage 2), involve a BREEAM AP in the project at an appropriate time and level to work with the project team, including the client, to maximise BREEAM performance, monitor progress, identify risks and opportunities, provide support to the project team and monitor and coordinate the generation of appropriate evidence by the project team.									
	BREEAM AP (DEVELOPED DESIGN)										
	REQ 10	Achieve REQ 8 and 9.		1		1			FUTURE ACTION	Lucy Cox to fulfill BREEAM AP role.	Regal (LC)
	REQ 11	At Developed Design Stage (RIBA Stage 3-4), involve a BREEAM AP in the project at an appropriate time and level to work with the project team, including the client, to maximise BREEAM performance, monitor progress, identify risks and opportunities, provide support to the project team and monitor and coordinate the generation of appropriate evidence by the project team.									
MAN 02 LIFE CYCLE COSTS	ELEMENTAL LCC										
	REQ 1	A competent person carries out an outline, entire asset LCC plan at RIBA Stage 2 together with any design options appraisals in line with 'Standardised method of life cycle costing for construction procurement' PD 156865: 2008.		2		2			ACTION	To be appointed.	TBC
	REQ 2	The elemental LCC plan: a. Includes future replacement costs over a period of analysis as required by the client or a 60 yr default period. b Includes service life, maintenance and operation cost estimates.								**Report is to be reviewed by design team and considered as part of design development.**	
	REQ 3	The design teams provides appropriate examples that demonstrate how the LCC has influence building and systems design and specification to minimise life cycle costs and maximise critical value.									
	COMPONENT LCC										
	REQ 4	A competent person develops a component level LCC options appraisal by the end OF RIBA Stage 4 in line with PD 156865: 2008 which includes (where present): Envelope, Services, Finishes and External spaces		1		1			FUTURE ACTION		TBC
	REQ 5	The design teams provides appropriate examples that demonstrate how the LCC has influence building and systems design and specification to minimise life cycle costs and maximise critical value.									
	CAPITAL COST REPORTING										
	REQ 6	Report the capital cost for the building in pounds per square metre of gross internal floor area (£k/ m²) as part of the submission to BRE.		1		1			FUTURE ACTION		Regal Construction
MAN 03 RESPONSIBLE CONSTRUCTION PRACTICES	PRE-REQUISITE: SITE TIMBER										
	REQ 1	All timber and timber-based products used during the construction process of the project are 'legally harvested and traded timber'		Y		Y			FUTURE ACTION		Regal Construction
	ENVIRONMENTAL MANAGEMENT										
	REQ 3	All parties who at any stage manage the construction site (e.g. the principal contractor, the demolition contractor) operate an EMS covering their main operations.		1		1			FUTURE ACTION		Regal Construction
	REQ 4	All parties who at any point manage the construction site (e.g. the principal contractor, the demolition contractor) implement best practice pollution prevention in accordance with PPG6.									
	BREEAM AP (SITE)										
	REQ 5	PRE-REQUISITE: The client and the contractor formally agree performance targets.		1		1			FUTURE ACTION		Regal (LC)
	REQ 6	Involve a BREEAM AP to support the project (in line with the established in Man 01 credit) throughout the Construction, Handover and Close Out stages.									
	RESPONSIBLE CONSTRUCTION MANAGEMENT										
	REQ 7	TWO CREDITS: Refer to Table 4.1 in the BREEAM guidance (provided on request). Achieve all items required for one credit plus six additional items in Table 4.1.	Excellent: One Credit Outstanding: Two Credits	2		2			FUTURE ACTION		Regal Construction
	REQ 8	Compliance can be demonstrated by achieving a CCS score of 39 with at least 13 in each section, and demonstrating item g. Ensure clear and safe access in and around the buildings at the point of handover.									
	REQ 9	ALTERNATIVELY, FOR ONE CREDIT ONLY: Achieve the items required for one credit in Man 03 Table 4.1 (provided on request).									
	EXEMPLARY LEVEL: RESPONSIBLE CONSTRUCTION MANAGEMENT										
	REQ 23	ONE EXEMPLARY LEVEL CREDIT: Achieve all items included in Man 03 Table 4.1. This can be demonstrated through a CCS score of 39 with at least 13 in each section, plus compliance with the following Table 4.1 items: g. Ensure clear and safe access in and around the buildings at the point of handover. p. The fleet operators, undertakes driver training and awareness to promote safety within the development footprint and off site. q. The fleet operators, captures and investigates any road accidents, incidents and near misses and reports them back to the principal contractor. The principal contractor analyses these items.		1		1			FUTURE ACTION		Regal Construction
	PRE-REQUISITE: MONITORING CONSTRUCTION SITE IMPACTS										
	REQ 10	Assign responsibility to an individual for monitoring, recording and reporting energy use, water consumption and transportation data (where measured) resulting from all on-site construction processes (and dedicated off-site manufacturing) throughout the build programme.		Y		Y			FUTURE ACTION		Regal Construction
	MONITORING CONSTRUCTION SITE IMPACTS: UTILITIES										
	REQ 11	As for REQ 10 for energy consumption monitoring.		1		1			FUTURE ACTION		Regal Construction
	REQ 12	Set targets for the site energy consumption in kWh (and where relevant, litres of fuel used) as a result of the use of construction plant, equipment (mobile and fixed) and site accommodation.									
	REQ 13	Monitor and record data for the energy consumption described in REQ 12.									
	REQ 14	Report the total carbon dioxide emissions (total kgCO_2/project value) from the construction process via BREEAM Projects (for the purposes of potential future BREEAM performance benchmarking).									
	REQ 15	As for REQ 10 for water consumption monitoring.									
	REQ 16	Set targets for the potable water consumption (m³) arising from the use of construction plant, equipment (mobile and fixed) and site accommodation.									
	REQ 17	Monitor and record data for the potable water consumption described in REQ 16.									
	REQ 18	Use the collated data to report the total net water consumption (m³), i.e. consumption minus any recycled water use from the construction process via BREEAM Projects (for the purposes of potential future BREEAM performance benchmarking).									

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		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
		MANAGEMENT									
		PROJECT DELIVERY PLANNING									
		MONITORING CONSTRUCTION SITE IMPACTS: TRANSPORT									
MAN 04 COMMISSIONING AND HANDOVER	REQ 19	As for REQ 10 for transport monitoring.									
	REQ 20	Set targets for transportation movements and impacts resulting from delivery of the majority of construction materials to site and construction waste from site. As a minimum this covers: - Transportation of materials from the point of supply to the building site, including any transport, intermediate storage and point of supply. This includes materials used in major building elements, ground works and landscaping materials. - Transportation of construction waste from the construction gate to waste disposal processing or recovery centre gate. This monitoring must cover the construction waste groups outlined in the project's resource management plan.		1		1			FUTURE ACTION		Regal Construction
	REQ 21	Monitor and record data for the transportation movements as described in REQ 20.									
	REQ 22	Using the collated data, report separately for materials and waste, the total transport-related carbon dioxide emissions ($kgCO_2$-eq), plus total distance travelled (km) via BREEAM Projects (for the purposes of potential future BREEAM performance benchmarking).									
		COMMISSIONING - TESTING SCHEDULE AND RESPONSIBILITIES									
	REQ 1	Prepare a schedule of commissioning and testing which identifies and includes a suitable timescale for commissioning and re-commissioning of all complex and non-complex building services and control systems and for testing and inspecting building fabric.									
	REQ 2	The schedule identifies the appropriate standards for all commissioning activities to be conducted, where applicable, in accordance with: Current Building Regulations, BSRIA, CIBSE and other appropriate standards. NOTE: process or manufacture-related equipment is excluded unless they form an integral part of the building HVAC services, such as some heat recovery systems.									
	REQ 3	Where a building management system (BMS) is specified: a. Carry out commissioning of air and water systems when all control devices are installed, wired and functional b. Include physical measurements of room temperatures, off-coil temperatures and other key parameters, as appropriate, in commissioning results c. The BMS or controls installation should be running in auto with satisfactory internal conditions prior to handover d. All BMS schematics and graphics (if BMS is present) are fully installed and functional to user interface prior to handover e. Fully train the occupier or facilities team in the operation of the system.		1		1			FUTURE ACTION		Regal Construction
	REQ 4	Appoint an appropriate project team member to monitor and programme pre-commissioning, commissioning and testing. Where necessary include re-commissioning activities on behalf of the client.									
	REQ 5	The principal contractor accounts for the commissioning and testing programme, responsibilities and criteria within their budget and the main programme of works. Allow the required time to complete all commissioning and testing activities prior to handover.									
		COMMISSIONING - DESIGN AND PREPARATION									
	REQ 6	Achieve REQ 1 to 5.									
	REQ 7	During the design stage, the client or the principal contractor appoints an appropriate project team member, provided they are not involved in the general installation works for the building services systems, with responsibility for: a Undertaking design reviews and giving advice on suitability for ease of commissioning. b Providing commissioning management input to construction programming and during installation stages. c Management of commissioning, performance testing and handover or post-handover stages. For buildings with complex building services and systems, this role needs to be carried out by a specialist commissioning manager.		1		1					Regal Construction
		TESTING AND INSPECTING BUILDING FABRIC									
	REQ 8	Achieve REQ 1 to 5.									
	REQ 9	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). A suitably qualified professional undertakes the survey and testing in accordance with the appropriate standard.		1		1			FUTURE ACTION		Regal Construction
	REQ 10	Rectify any defects identified prior to building handover and close out. Any remedial work must meet the required performance characteristics for the building or element as defined at the design stage.									
		HANDOVER									
	REQ 11	Prior to handover, develop two building user guides for the following users: - A non-technical user guide for distribution to the building occupiers. - A technical user guide for the premises facilities managers. A draft copy is developed and discussed with users first (where the building occupants are known) to ensure the guide is most appropriate and useful to potential users.		1		1			FUTURE ACTION		Regal Construction
	REQ 12	Prepare two training schedules timed appropriately around handover and proposed occupation plans for the following users: - A non-technical training schedule for the building occupiers. - A technical training schedule for the premises facilities managers.									
MAN 05 AFTERCARE		AFTERCARE SUPPORT									
	REQ 1	Provide aftercare support to the building occupiers as follows: a. A meeting between the aftercare support team or individual, and the building occupier or management team (prior to initial occupation, or as soon as possible thereafter) to: - Introduce the aftercare support available, including the content of the building user guide (where it exists) and training schedule. - Present key information on the building including the design intent and how to use the building to ensure it operates as efficiently and effectively as possible. b. On-site facilities management training including: - a walkabout of the building AND - introduction to and familiarisation with the building systems, their controls and how to operate them in accordance with the design intent and operational demands. c. Weekly attendance on-site, to support building users and management for the first month of occupation. d. A helpline, nominated individual or other appropriate system to support building users and management for the first year of occupation.		1		1			FUTURE ACTION	Commitment letter to be signed.	Regal/ Regal Construction
	REQ 2	Establish operational infrastructure and resources to coordinate the collection and monitoring of energy and water consumption data for a minimum of 12 months, once the building is substantially occupied. This facilitates analysis of discrepancies between actual and predicted performance, with a view to adjusting systems and user behaviours accordingly.									
		COMMISSIONING - IMPLEMENTATION									
	REQ 3	The specialist commissioning manager will complete the following commissioning activities over a minimum 12-month period, once the building becomes substantially occupied: i. Identify changes made by the owner or operator that might have caused impaired or improved performance. ii. Test all building services under full load conditions (winter and summer) and part load conditions (spring and autumn). iii. Where applicable, carry out testing during periods of extreme (high or low) occupancy. iv. Interview building occupants (where they are affected by the complex services) to identify problems or concerns regarding the effectiveness of the systems. v. Produce monthly reports comparing sub-metered energy performance to the predicted one (see Ene 01 Reduction of energy use and carbon emissions on page 121). vi. Identify inefficiencies and areas in need of improvement. vii. Re-commission systems (following any work needed to serve revised loads), and incorporate any revisions in operating procedures into the operations and maintenance (O&M) manuals. NOTE: Other requirements apply for simple buildings.		1		1			FUTURE ACTION	Commissioning commitment letter to be signed.	Regal Construction
		POST-OCCUPANCY EVALUATION									
	REQ 4	The client or building occupier commits to carry out a POE exercise one year after the building is substantially occupied. This gains comprehensive in-use performance feedback and identifies gaps between design intent and in-use performance. The aim is to highlight any improvements or interventions that need to be made and to inform operational processes.									
	REQ 5	An independent party carries out the POE covering: a. A review of the design intent and construction process (review of design, procurement, construction and handover processes). b. Feedback from a wide range of building users including facilities management on the design and environmental conditions of the building covering: i. Internal environmental conditions (light, noise, temperature, air quality) ii. Control, operation and maintenance iii. Facilities and amenities iv. Access and layout v. Energy and water consumption vi. Other relevant issues, where appropriate		1				1		Undertake POE- third party appointment required.	Regal London
	REQ 6	The independent party provides a report with lessons learned to the client and building occupiers.									
	REQ 7	The client or building occupier commits funds to pay for the POE in advance. This requires an independent party to be appointed to carry out the POE as described in REQ 5. Evidence of the appointment of the independent party and schedule of responsibilities which fulfils the BREEAM criteria are acceptable to demonstrate compliance.									
		SECTION SUB-TOTAL		21	0	19	1	1			

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		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
	MANAGEMENT										
	PROJECT DELIVERY PLANNING										
HEALTH AND WELLBEING											
	CONTROL OF GLARE FROM SUNLIGHT										
	REQ 1	Identify areas at risk of glare using a glare control assessment. The glare control assessment also justifies any areas deemed not at risk of glare.		1		1			ACTION	Glare risk is to be reviewed and blinds to be installed where there is a risk of glare.	Cartwright Pickard
	REQ 2	A glare control strategy designs out potential glare in all relevant building areas where risk has been identified. This should be achieved through building form and layout or building design measures.									
	REQ 3	The glare control strategy does not increase energy consumption used for lighting. This is achieved by: - Maximising daylight levels in all weather, cloudy or sunny AND - Ensuring the use or location of shading does not conflict with the operation of lighting control systems.									
	DAYLIGHTING										
	REQ 4	Daylighting criteria have been met using either of the following options: a. The relevant building areas meet good practice daylight factors and other criteria OR; b. The relevant building areas meet good practice average and minimum point daylight illuminance criteria OR; c. The relevant building areas meet the median daylight factors and minimum daylight factors criteria.		1				1		Requires additional appointment	TBC
	EXEMPLARY LEVEL CREDIT - DAYLIGHTING										
	REQ 15	Daylighting criteria have been met using either of the following options: a. The relevant building areas meet exemplary level daylight factors and other criteria OR; b. The relevant building areas meet exemplary level average and minimum point daylight illuminance criteria.		1				1			
	VIEW OUT										
	REQ 5	95% of the floor area in 95% of spaces for each relevant building area is within 8m of an external wall. The external wall has a window or permanent opening that provides an adequate view out. BREEAM defines relevant building areas requiring a view out to include areas of the building where: There are or will be workstations or benches or desks for building users. Close work will be undertaken or visual aids will be used.		1			1		ONGOING	Cartwright Pickard to review and confirm if achievable.	Cartwright Pickard
	REQ 6	The window or opening must be ≥ 20% of the surrounding wall area. Where the room depth is greater than 8m, compliance is only possible where the percentage of window or opening is the same as, or greater than, the values in Table 1.0 of BS 8206: part 2.									
	INTERNAL AND EXTERNAL LIGHTING LEVELS, ZONING AND CONTROL										
	REQ 7	Internal lighting in all relevant areas of the building is designed to provide illuminance (lux) levels and colouring rendering index in accordance with the SLL Code for Lighting 2012 and any other relevant industry standard.									
	REQ 8	For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7, sections 2.4, 2.13 to 2.15, 2.20, and 6.10 to 6.20. This gives recommendations highlighting: a Limits to the luminance of the luminaires to avoid screen reflections. (Manufacturers' data for the luminaires should be sought to confirm this.) b Any area where a surface is used to reflect light in to a space, such as uplighting, the recommendations refer to the luminance of the lit ceiling rather than the luminaire; a design team calculation is usually required to demonstrate this. c Recommendations for direct lighting, ceiling illuminance, and average wall illuminance.										
	REQ 9	All external lighting located within the construction zone is specified in accordance with BS 5489-1:2013 Code for the practice for the design of road lighting. 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.									
	REQ 10	Where no external light fittings are specified (either separate from or mounted on the external building façade or roof), the criteria relating to external lighting do not apply and the credit can be awarded on the basis of compliance all other criteria.		1			1			Lighting zoning aspect can be challenging - Whitecode to review and confirm.	Whitecode
	REQ 11	Internal lighting is zoned to allow for occupant control. Zoning is in accordance with the criteria below for relevant areas present within the building: a. In office areas, zones of no more than four workplaces b. Workstations adjacent to windows or atria and other building areas separately zoned and controlled c. Seminar and lecture rooms: zoned for presentation and audience areas d. Library spaces: separate zoning of stacks, reading and counter areas e. Teaching space or demonstration area f. Whiteboard or display screen g. Auditoria: zoning of seating areas, circulation space and lectern area h. Dining, restaurant, café areas: separate zoning of servery and seating or dining areas i. Retail: separate zoning of display and counter areas j. Bar areas: separate zoning of bar and seating areas k. Wards/ bedded areas: zoned lighting control for individual bed spaces and control for staff over groups of beds. l. Treatment areas, dayrooms, waiting areas: zoning of seating and activity areas and circulation space with controls accessible to staff.									
HEA 02 INDOOR AIR QUALITY	PRE-REQUISITE - INDOOR AIR QUALITY PLAN										
	REQ 1	A site-specific indoor air quality plan has been produced and implemented in accordance with the guidance in Guidance Note GN06. The plan must be produced no later than the end of Concept Design and must consider the following: a. Removal of contaminant sources b. Dilution and control of contaminant sources: b.i. Where present, consideration is given to the air quality requirements of specialist areas such as laboratories c. Procedures for pre-occupancy flush out and purge ventilation d. Third party testing and analysis e. Maintaining good indoor air quality in-use. f. Any relevant local authority plans or policies (e.g. Air Quality Management Areas or Local Air Quality Action Plans).		Y			Y			TBC who could complete - may require additional appointment.	TBC
	VENTILATION										
	REQ 2	The building has been designed to minimise the indoor concentration and recirculation of pollutants in the building as follows: a. Provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation. b. Ventilation pathways are designed to minimise the ingress and build-up of air pollutants inside the building (see Methodology in BREEAM manual). c. Where present, HVAC systems must incorporate suitable filtration to minimise external air pollution, as defined in BS EN 16798-3:2017. The specified filters should achieve a minimum Indoor Air Quality of at least SUP2. d. Occupied spaces have carbon dioxide (CO_2) or air quality sensors specified in accordance with Building Regulations ADF22 and: i In mechanically ventilated buildings or spaces, sensors are linked to the mechanical ventilation system and provide demand-controlled ventilation to the space. ii In naturally ventilated buildings or spaces, sensors either have the ability to alert the building owner or manager when CO_2 levels exceed the recommended set point, or are linked to controls with the ability to adjust the quantity of fresh air, e.g. automatic opening windows or roof vents. iii The total number of sensors, and the net internal area of relevant areas covered by the sensors, is reported via the BREEAM Scoring and Reporting Tool. e. The ventilation strategy provides adequate ventilation rates throughout the year, including sufficient airflow rates in summer to prevent overheating and maintain required thermal comfort conditions, in accordance with: i CIBSE AM10 (for naturally ventilated buildings) ii CIBSE AM13 (for mixed-mode buildings)		1			1			Whitecode to review and confirm.	Whitecode
	EMISSIONS FROM CONSTRUCTION PRODUCTS										
	REQ 3	ONE CREDIT: Three out of the five product types meet the best practice emission limits, testing requirements and any additional requirements. Where wood-based products are not one of three selected product types, all wood-based products used for internal fixtures and fittings must be tested and classified as formaldehyde E1 class as a minimum.		2			2				Cartwright Pickard Regal Interiors
	REQ 4	TWO CREDITS: All product types meet the best practice emission limits, testing and other additional requirements.									

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		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
	MANAGEMENT										
	PROJECT DELIVERY PLANNING										
	POST-CONSTRUCTION INDOOR AIR QUALITY MEASUREMENT										
	REQ 5	The formaldehyde concentration in indoor air is measured post construction (but pre-occupancy) and does not exceed 100 µg/ m^3 averaged over 30 minutes (World Health Organization guidelines for indoor air quality: Selected pollutants, 2010.		1			1				Regal Construction
	REQ 6	The formaldehyde sampling and analysis is performed in accordance with ISO 16000-2 and ISO 16000-3.									
	REQ 7	The total volatile organic compound (TVOC) concentration in indoor air is measured post construction (but pre-occupancy) and does not exceed 300 µg/ m^3over 8 hours.									
	REQ 8	The TVOC sampling and analysis is performed in accordance with ISO 16000-5 and ISO 16000-6 or ISO 16017-1.									
	REQ 9	Where levels are found to exceed these limits, the project team confirms the measures that have, or will be, undertaken in accordance with the IAQ plan, to reduce the TVOC and formaldehyde levels to within the above limits.									
	REQ 10	The measured concentration levels of formaldehyde (µg/ m^3) and TVOC (µg/ m^3) are reported, via the BREEAM Scoring and Reporting Tool.									
HEA 04 THERMAL COMFORT	THERMAL MODELLING										
	REQ 1	Thermal modelling has been carried out using software in accordance with CIBSE AM11 Building Energy and Performance Modelling.		1		1			ONGOING		Whitecode
	REQ 2	The software used to carry out the simulation at the detailed design stage provides full dynamic thermal analysis. For smaller and more basic building designs with less complex heating or cooling systems, an alternative less complex means of analysis may be appropriate (such methodologies must still be in accordance with CIBSE AM11).									
	REQ 3	The modelling demonstrates that: a. For air-conditioned buildings: Summer and winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A, Table 1.5; or other appropriate industry standard. b. For naturally ventilated buildings: Winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A Environmental design, Table 1.5. or other appropriate industry standard AND; The building is designed to limit the risk of overheating, in accordance with the adaptive comfort methodology outlined in either of the following standards as appropriate; CIBSE TM52 or CIBSE TM59: Design methodology for the assessment of overheating risk in homes.									
	REQ 4	For air-conditioned buildings, the PMV (predicted mean vote) and PPD (predicted percentage of dissatisfied) indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool.									
	DESIGN FOR FUTURE THERMAL COMFORT										
	REQ 5	REQ 1 to 4 are achieved.		1		1			ONGOING		Whitecode
	REQ 6	The thermal modelling demonstrates that the relevant requirements set out in criterion 3 above are achieved for a projected climate change environment.									
	REQ 7	Where criterion 6 above is not met, the project team demonstrates how the building has been adapted, or designed to be easily adapted in future using passive design solutions in order to subsequently meet the requirements under criterion 6 above.		1		1			ONGOING		Whitecode
	REQ 8	For air-conditioned buildings, the PMV and PPD indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool.									
	THERMAL ZONING AND CONTROLS										
	REQ 9	REQ 1 to 4 are achieved.		1			1			Control aspect tends to be challenging - Whitecode to provide comments.	Whitecode
	REQ 10	The thermal modelling analysis (criteria1 on the previous page to 4 on the previous page) has informed the temperature control strategy for the building and its users.									
	REQ 11	The strategy for proposed heating or cooling systems demonstrates that it has addressed the following:									
		a. Zones within the building, and how the building services could efficiently and appropriately heat or cool these areas. For example consider the different requirements for the central core of a building compared with the external perimeter adjacent to the windows.									
		b. The degree of occupant control required for these zones. This is based on discussions with the end user (or alternatively building type or use specific design guidance, case studies, feedback) and considers: i. User knowledge of building services ii. Occupancy type, patterns and room functions (and therefore appropriate level of control required) iii. How the user is likely to operate or interact with the systems, e.g. are they likely to open windows, access thermostatic radiator valves (TRV) on radiators, change air-conditioning settings etc. iv. The user expectations (this may differ in the summer and winter) and degree of individual control (i.e. obtaining the balance between occupant preferences, for example some occupants like fresh air and others dislike draughts)									
		c. How the proposed systems will interact with each other (where there is more than one system) and how this may affect the thermal comfort of the building occupants									
		d. The need or otherwise for an accessible building user actuated manual override for any automatic systems.									
HEA 05 ACOUSTICS	ACOUSTIC PERFORMANCE										
	REQ 1	The building meets the appropriate acoustic performance standards and testing requirements in line with the acoustic principles of: a. Sound insulation b. Indoor ambient noise level c. Room acoustics.		3		2	1			RBA to provide comments on what is achievable.	RBA Acoustics
HEA 06 SECURITY	SECURITY OF SITE AND BUILDING										
	REQ 1	A Suitably Qualified Security Specialist (SQSS) conducts an evidence-based Security Needs Assessment (SNA) during or prior to Concept Design (RIBA Stage 2 or equivalent). The purpose of the SNA will be to identify attributes of the proposal, site and surroundings which may influence the approach to security for the development.		1		1			ACTION	To be appointed. The recommendations are to be included in the design.	TBC
	REQ 2	The SQSS develops a set of security controls and recommendations for incorporation into the proposals. Those controls and recommendations shall directly relate to the threats and assets identified in the preceding SNA.									
	REQ 3	The controls and recommendations shall be incorporated into proposals and implemented in the as-built development. Any deviation from those controls and recommendations shall be justified and agreed with the SQSS.									
HEA 07 SAFE AND HEALTHY ENVIRONMENTS	SAFE ACCESS										
	REQ 1	Dedicated and safe cycle paths are provided from the site entrance to any cycle storage, and connect to offsite cycle paths where applicable.		1			1		ONGOING	CP to review and confirm if this is likely achievable. Full guidance on safe access routes can be found in the BREEAM manual.	Cartwright Pickard
	REQ 2	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.									
	REQ 3	Pedestrian drop-off areas are designed off, or adjoining to, the access road and should provide direct access to other footpaths.									
	REQ 4	Where vehicle delivery access and drop-off areas form part of the assessed development, the following apply:									
	REQ 5	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.									
	REQ 6	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.									
	OUTSIDE SPACE										
	REQ 7	There is an outside space providing building users with an external amenity area.		1		1			ONGOING		Turkington Martin
		SECTION SUB-TOTAL		17	0	7	9	1			

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		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
MANAGEMENT											
	PROJECT DELIVERY PLANNING										
ENERGY											
ENE 01 ENERGY USE AND CARBON EMISSIONS	ENERGY PERFORMANCE										
	REQ 1	Calculate an Energy Performance Ratio for New Construction (EPR_{NC}). Credits are awarded based on improvements of the actual building over the notional building's heating and cooling energy demand, primary energy consumption and CO_2 emissions.		9		4	2	3	ONGOING		Whitecode Energy
	PREDICTION OF OPERATIONAL ENERGY CONSUMPTION										
	REQ 2	Achieve criterion 2 in Ene 04 Low Carbon Design (Passive Design).		4		4			FUTURE ACTION		Whitecode Energy
	REQ 3	Estimate the occupancy, energy use for unregulated energy loads and management practices.									
	REQ 4	Undertake detailed energy modelling to predict the building energy consumption.									
	REQ 5	Undertake sensitivity analysis to determine the factors that can significantly impact building energy consumption.									
	REQ 6	Based on the results of the sensitivity analysis, and in discussion with the project team, the client and the prospective occupier devise scenarios to explore how high impact factors might influence the building energy consumption.									
	REQ 7	Undertake scenario modelling and use these findings to inform improvements to design of the building and to operational, maintenance, and handover strategies.									
	REQ 8	Determine an energy target for the building based on the results of the scenario modelling.									
	REQ 9	At the post-construction stage, the scenario modelling should be repeated to reflect the post construction building specification and, if necessary, adjust the energy target.									
ENE 02 ENERGY MONITORING	SUB-METERING OF END USE CATEGORIES										
	REQ 1	Install energy metering systems so that at least 90% of the estimated annual energy consumption of each fuel is assigned to the end-use categories.		1		1			FUTURE ACTION		Whitecode
	REQ 2	Meter the energy consumption in buildings according to their total useful floor area: For buildings ≥1,000m²: by end-use category with an appropriate energy monitoring and management system. For buildings <1,000m²: i. an energy monitoring and management system, OR; ii. separate accessible energy sub-meters with pulsed or other open protocol communication outputs, for future connection to an energy monitoring and management system.									
	REQ 3	Building users can identify the energy consuming end uses, for example through labelling or data outputs.									
	SUB-METERING OF HIGH ENERGY LOAD AND TENANCY AREAS										
	REQ 4	Monitor a significant majority of the energy supply with an accessible energy monitoring and management system OR separate accessible energy sub-meters with pulsed or other open protocol communication outputs for future connection to an energy monitoring and management system for: i. tenanted areas OR; ii. relevant function areas or departments in single occupancy buildings.		1		1			FUTURE ACTION		Whitecode
	REQ 5	Sub-meter per floor plate in large single occupancy or single-tenancy buildings with one homogeneous function (e.g. hotel bedrooms, offices).									
ENE 03 EXTERNAL LIGHTING	EXTERNAL LIGHTING										
	REQ 1	No external lighting (which includes lighting on the building, at entrances and signs) OR;		1		1			FUTURE ACTION		Whitecode
	REQ 2	External light fittings within the construction zone with: a. Average initial luminous efficacy of not less than 70 luminaire lumens per circuit Watt b. Automatic control to prevent operation during daylight hours c. Presence detection in areas of intermittent pedestrian traffic.									
ENE 04 LOW CARBON DESIGN	PASSIVE DESIGN ANALYSIS										
	REQ 1	Achieve the HEA 04 - THERMAL MODELLING credit to demonstrate that the building design delivers appropriate thermal comfort levels in occupied spaces.		1		1			ACTION		Whitecode Energy
	REQ 2	The project team analyses the proposed building design and development during Concept Design to identify opportunities for the implementation of passive design measures.									
	REQ 3	Implement passive design measures to reduce the total heating, cooling, mechanical ventilation, lighting loads and energy consumption in line with the passive design analysis findings.									
	REQ 4	Quantify the reduced total energy demand and carbon dioxide (CO_2) emissions resulting from the passive design measures.									
	LOW AND ZERO CARBON FEASIBILITY STUDY										
	REQ 9	An energy specialist completes An LZC feasibility study by the end of Concept Design.		1		1			ACTION		Whitecode Energy
	REQ 10	Establish the most appropriate recognised local (on-site or near-site) LZC energy sources for the building or development, based on the feasibility study.									
	REQ 11	Specify local LZC technologies for the building or development in line with the feasibility study recommendations.									
	REQ 12	Quantify the reduced regulated carbon dioxide (CO_2) emissions resulting from the feasibility study.									
	ENERGY CONSUMPTION										
	REQ 1	For specified lifts, escalators or moving walks (transportation types): a. Analyse the transportation demand and usage patterns for the building to determine the optimum number and size of lifts, escalators or moving walks b. Calculate the energy consumption in accordance with BS EN ISO 25745 Part 2 or Part 3 for one of the following: i. At least two types of system for each transportation type required OR Ii. An arrangement of systems, for example for lift systems, hydraulic, traction, machine room-less lift (MRL) OR iii A system strategy that is 'fit for purpose' c. Consider the use of regenerative drives, subject to REQ 4. d. Specify the transportation system with the lowest energy consumption.		1		1			ACTION		Whitecode / Lift Manufacturer
	PRE-REQUISITE - ENERGY EFFICIENT FEATURES										
	REQ 2	Achieve REQ 1.		Y		Y					
	ENERGY EFFICIENT FEATURES - LIFTS										
	REQ 3	Specify the following three energy efficient features for each lift: a. A standby condition for off-peak periods b. The lift car lighting and display lighting provides an average luminous efficacy across all fittings in the car of > 70 luminaire lumens per circuit Watt c. Use of a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor.		1		1			ACTION		Lift Consultant
	REQ 4	Specify regenerative drives where their use produces an energy saving greater than the additional standby energy used to support the drives.									
		SECTION SUB TOTAL		21	0	15	2	4			
TRANSPORT											
TRA 01 TRANSPORT ASSESSMENT AND TRAVEL PLAN	TRANSPORT ASSESSMENT AND TRAVEL PLAN										
	REQ 1	During the feasibility and design stages, develop a travel plan based on a site-specific travel assessment or statement.		2		2			ACTION	Planning transport assessment/travel plan to be BREEAM compliant.	Transport Consultant - Caneparo Regal London (commitment letter)
	REQ 2	The site-specific travel assessment or statement covers as a minimum: a. Existing travel patterns and opinions of existing building or site users towards cycling and walking, identifying constraints and opportunities, if relevant. b. Travel patterns and transport impact of future building users. c. Current local environment for walkers and cyclists. d. Reporting of the number and type of existing accessible amenities, within 500m of the site. e. Disabled access (accounting for varying levels of disability and visual impairment). f. Calculation of the existing public transport Accessibility Index (AI). g. Current facilities for cyclists.									
	REQ 3	The travel plan includes proposals to increase or improve sustainable modes of transport and movement of people and goods during the building's operation and use.									
	REQ 4	If the occupier is known, involve them in the development of the travel plan.									
	REQ 5	Demonstrate that the travel plan will be implemented post construction and be supported by the building's management in operation.									

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		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
MANAGEMENT											
	PROJECT DELIVERY PLANNING										
	TRANSPORT OPTIONS IMPLEMENTATION										
TRA 02 SUSTAINABLE TRANSPORT MEASURES	REQ 1	Achieve the TRA 01 - TRAVEL PLAN credit.		10		6	1	6	ONGOING	AI at 100 Ave Rd is 39.55 for part of the site, and 40.51 for the other. Achievable points: - AI >8. - Existing amenities (UPS Access Point/London Mailbox & Shipping, Anytime Fitness, Swiss Cottage Library, Swiss Cottage Leisure centre, Green Light Pharmacy) etc. - Ensure a minimum of one new accessible amenity (2) 4 points = 6 credits.	
	REQ 2	Identify the sustainable transport measures									
	REQ 3	Award credits according to the Accessible Index (AI) of the project, and the total number of points achieved for the options implemented, see Table 7.3 below									
	OPT 1	1. The existing AI calculated in Tra 01 achieves the following: ≥ 4 for prison or MOD sites, rural location sensitive buildings, and other building group 3 ≥ 8 for all other building types		Y		Y					
	OPT 2	2. Demonstrate an increase over the existing Accessibility Index through: Negotiation with local bus, train or tram companies to increase the frequency of the local service provision for the development; or provision of a diverted bus route, a new or enhanced bus stop, or other similar solutions; or a dedicated service, such as a bus route or service.		Y				Y			
	OPT 3	3. 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. This may include signposting to public transport, cycling, walking infrastructure or local amenities.		Y				Y			
	OPT 4	4. Provide electric recharging stations of a minimum of 7kW for at least 10% of the total car parking capacity for the development.		Y				Y			
	OPT 5	5. Set up a car sharing group or facility to facilitate and encourage building users to car share. Raise awareness of the sharing scheme with marketing and communication materials. Provide priority spaces for car sharers for at least 5% of the total car parking capacity for the development. Locate priority parking spaces nearest the development entrance used by the sharing scheme participants.		Y				Y			
	OPT 6	6. During preparation of the brief, the design team consults with the local authority (LA) on the state of the local cycling network and public accessible pedestrian routes, to focus on whichever the LA deems most relevant to the project, and how to improve it. Agree and implement one proposition chosen with the local authority. The proposition supported by the development is additional to existing local plans and has a significant impact on the local cycling network or on pedestrian routes open to the public.		Y				Y			
	OPT 7	7. Install compliant cycle storage spaces to meet the minimum levels set out in BREEAM Table 7.5.		Y			Y				
	OPT 8	8. Provide at least two compliant cyclists' facilities for the building users: Showers / Changing facilities / Lockers / Drying spaces.		Y				Y			
	OPT 9	9. At least three existing accessible amenities are present, see BREEAM Table 7.6, where relevant for a Building Group.		Y		Y					
	OPT 10	10. Ensure a minimum of one new accessible amenity, in accordance with Table 7.6, for the relevant Building Group, is provided; or Ensure more than one new accessible amenity, in accordance with Table 7.6 for the relevant Building Group, is provided.		Y		Y					
	OPT 11	11. Implement one site-specific improvement measure, not covered by the options already listed in this issue, in line with the recommendations of the travel plan. Submit this for review by BRE.		Y				Y			
		SECTION SUB-TOTAL		12	0	8	1	6			
WATER											
WAT 01 WATER CONSUMPTION	WATER CONSUMPTION										
	REQ 1	Use the BREEAM Wat 01 calculator to assess the efficiency of the domestic water-consuming components. The following components are assessed: – WCs – Urinals – Taps (wash-hand basins and, where specified, kitchen taps and waste disposal unit) – Showers – Baths – Dishwashers (domestic and commercial sized) – Washing machines (domestic and commercial or industrial sized).		5		3		2	FUTURE ACTION	**Minimum standard for Excellent.** Low-flow sanitary components.	Cartwright Pickard Whitecode
	REQ 2	Compare the water consumption (litres/person/day) for the assessed building against a baseline performance and credits are awarded based on improvements over the baseline.									
	REQ 3	If a greywater or rainwater system is specified, use its yield in L/person/day to offset potable water demand from components.									
	REQ 4	If a greywater or rainwater system is specified and installed: a. Greywater systems in compliance with BS 8525-1:2010 Greywater systems - Part 1 Code of Practice b. Rainwater systems in compliance with BS 8515:2009+A1:2013 Rainwater harvesting systems - Code of practice.									
	REQ 5	For Healthcare buildings: The flushing control for each WC or urinal must be suitable for operation by patients with frail or infirm hands or activated by electronic sensors.									
	REQ 6	For Prison buildings: Sanitary components specified within a prison cell have a volume controller specified on the individual fittings or water supply to each cell.									
WAT 02 WATER MONITORING	WATER MONITORING										
	REQ 1	Specify a water meter on the mains water supply to each building.		1		1			FUTURE ACTION		Whitecode
	REQ 2	For water-consuming plant/ building areas consuming 10% or more of the total water demand, fit easily accessible sub-meters OR install water monitoring equipment integral to the plant or area.									
	REQ 3	For each meter (main and sub): a. Install a pulsed or other open protocol communication output AND b. Connect it to an appropriate utility monitoring and management system e.g. a BMS.									
	REQ 4	In buildings with swimming pools, or large water tanks and aquariums, fit separate sub-meters on the water supply and any associated changing facilities (toilets, showers etc.).									
	REQ 5	For buildings containing laboratories: fit a separate meter on the water supply to any process or cooling loop for 'plumbed-in' laboratory process equipment.									
	REQ 6	For Post Occupancy Certification: The water monitoring strategy used enables the identification of all water consumption for sanitary uses as assessed under Wat 01 (litres/person/day).									

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		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
MANAGEMENT											
	PROJECT DELIVERY PLANNING										
WAT 03 WATER LEAK DETECTION	LEAK DETECTION SYSTEM										
	REQ 1	Install a leak detection system capable of detecting a major water leak: a. On the utilities water supply within the buildings, to detect any major leaks within the buildings AND b. Between the buildings and the utilities water supply, to detect any major leaks between the utilities supply and the buildings under assessment.		1		1			FUTURE ACTION		Whitecode
	REQ 2	The leak detection system is: a. A permanent automated water leak detection system that alerts the building occupants to the leak OR an inbuilt automated diagnostic procedure for detecting leaks b. Activated when the flow of water passing through the water meter or data logger is at a flow rate above a pre-set maximum for a pre-set period of time. This usually involves installing a system which detects higher than normal flow rates at meters or sub-meters. It does not necessarily require a system that directly detects water leakage along part or the whole length of the water supply system c. Able to identify different flow and therefore leakage rates, e.g. continuous, high or low level, over set time periods. Although high and low level leakage rates are not specified, the leak detection equipment installed must have the flexibility to distinguish between different flow rates to enable it to be programmed to suit the building type and owner's or occupier's usage patterns. d. Programmable to suit the owner's or occupier's water consumption criteria. e. Where applicable, designed to avoid false alarms caused by normal operation of large water consuming plant such as chillers.									
	FLOW CONTROL DEVICES										
	REQ 3	Install flow control devices that regulate the water supply to each WC area or sanitary facility according to demand, in order to minimise undetected wastage and leaks from sanitary fittings and supply pipework.		1		1			FUTURE ACTION		Whitecode
WAT 04 WATER EFFICIENT EQUIPMENT	WATER EFFICIENT EQUIPMENT										
	REQ 1	Identify all water demands from uses other than those listed under WAT 01 - WATER CONSUMPTION that could be realistically mitigated or reduced.		1		1			FUTURE ACTION	TM to ensure any irrigation is compliant.	Turkington Martin
	REQ 2	Identify systems or processes to reduce the relevant water demand, and establish a demonstrable reduction in the total water demand of the building.									
		SECTION SUB-TOTAL		9	0	7	0	2			
MATERIALS											
MAT 01 ENVIRONMENTAL IMPACTS FROM CONSTRUCTION PRODUCTS - LCA	SUPERSTRUCTURE - OPTION APPRAISAL (CONCEPT & TECHNICAL DESIGN)										
	REQ 1	COMPARISON WITH THE BREEAM LCA BENCHMARK (CONCEPT DESIGN) During the Concept Design, demonstrate the environmental performance of the building as follows: 1.a Carry out a building LCA on of the superstructure design using either the BREEAMSimplified Building LCA tool or an IMPACT Compliant LCA tool according to the methodology (see Methodology on page 226). 1.b Submit the Mat 01/02 Results Submission Tool to BREat the end of Concept Design, and before planning permission is applied for (that includes external material or product specifications).		6		5	1		ACTION		Whitecode
	REQ 2	COMPARISON WITH THE BREEAM LCA BENCHMARK (TECHNICAL DESIGN) During Technical Design, demonstrate the environmental performance of the building as follows: 2.a As criterion 1.a 2.b Submit the Mat 01/02 Results Submission Tool to BREat the end of Technical Design.							FUTURE ACTION		
	REQ 3	SUPERSTRUCTURE - OPTION APPRAISAL (CONCEPT DESIGN) For Office, Industrial and Retail buildings, achieve REQ 1.							ACTION		
	REQ 4	During Concept Design, identify opportunities for reducing environmental impacts as follows: a. Carry out building LCA options appraisal of 2-4 different superstructure design options. b. Use a building LCA tool that is recognised by BREEAM. c. For each design option, fulfil the same functional requirements specified by the client and all statutory requirements (to ensure functional equivalency). d. Integrate the LCA options appraisal activity within the wider design decision-making process. Record this in an options appraisal summary document. e. Record the following in the Mat 01/02 Results Submission Tool: - The differences between the design options - The design option selected by the client to be progressed beyond Concept Design - The reasons for selecting it and the reasons for not selecting the other design options. f. Submit the Mat 01/02 Results Submission Tool to BRE at the end of Concept Design, and before planning permission is applied for.									
	REQ 5	SUPERSTRUCTURE - OPTION APPRAISAL (TECHNICAL DESIGN) During Technical Design identify opportunities for reducing environmental impacts as follows: a. Carry out building LCA options appraisal of 2 to 3 significantly different superstructure design options (based on the selected Concept Design option and as applicable to the Technical Design). b. Use a building LCA tool that is recognised by BREEAM. c. As REQ 4.c to 4.e. Where an options appraisal summary document was produced during Concept Design, update it to include the Technical Design options. d. Submit the Mat 01/02 Results Submission Tool to BRE at the end of Technical Design.							FUTURE ACTION		
	SUBSTRUCTURE AND HARD LANDSCAPING - OPTION APPRAISAL (CONCEPT DESIGN)										
	REQ 6	Achieve REQ 3 and 4.									
	REQ 7	During Concept Design identify opportunities for reducing environmental impacts as follows: a. Carry out building LCA options appraisal of a combined total of at least six significantly different substructure or hard landscaping design options (at least two shall be substructure and at least two shall be hard landscaping). b. Using a building LCA tool that is recognised by BREEAM. c. As REQ 4.c to 4.f above.		1		1			ACTION		Whitecode Energy
	EXEMPLARY LEVEL CREDIT - CORE BUILDING SERVICES - OPTION APPRAISAL (CONCEPT DESIGN)										
	REQ 8	Achieve REQ 3 and 4.									
	REQ 9	During Concept Design identify opportunities for reducing environmental impacts as follows: a. Carry out building LCA options appraisal of at least 3 significantly different core building services design options. b. Use a building LCA tool that is recognised by BREEAM. c. As REQ 4.c to 4.f above.		1		Y			ACTION		Whitecode Energy
	EXEMPLARY LEVEL CREDIT - LCA AND LCC ALIGNMENT										
	REQ 10	Achieve REQ 3 to 5.									
	REQ 11	Achieve MAN 02 ELEMENTAL LCC PLAN and COMPONENT LEVEL LCC OPTIONS APPRAISAL credits.									
	REQ 12	Include design options appraised for REQ 3-4 (and REQ 6-9, if pursued) during Concept Design in the 'elemental LCC plan'.									
	REQ 13	Include design options appraised for REQ 5 during Technical Design in the 'component level LCC option appraisal'.		1		Y			ACTION		LCC Consultant
	REQ 14	Integrate the aligned LCA and LCC options appraisal activity within the wider design decision-making process. Record this in an options appraisal summary document including the relevant cost information from the 'elemental LCC plan' and 'Component level LCC option appraisal'.									
URCING OF CONSTRUCTION PRODUCTS	PRE-REQUISITE										
	REQ 1	All timber and timber-based products used on the project are legally harvested and traded timber as per the UK Government's Timber Procurement Policy (TPP). MANDATORY FOR ALL RATINGS.		Y		Y			ONGOING		Architect
	ENABLING SUSTAINABLE PROCUREMENT										
	REQ 2	A sustainable procurement plan must be used by the design team to guide specification towards sustainable construction products. The plan must: a. Be in place before Concept Design. b. Include sustainability aims, objectives and strategic targets to guide procurement activities. c. Include a requirement for assessing the potential to procure construction products locally. There must be a policy to procure construction products locally where possible. d. Include details of procedures in place to check and verify the effective implementation of the sustainable procurement plan. e. If the plan is applied to several sites, or adopted at an organisational level, it must identify the risks and opportunities of procurement against a broad range of social, environmental and economic issues following the process set out in BS ISO 20400:2017.		1		1			ACTION	Regal have a company-wide SPP.	Regal London

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		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
	MANAGEMENT										
	PROJECT DELIVERY PLANNING										
MAT 03 RESPONSIBLE SO	MEASURING RESPONSIBLE SOURCING										
	REQ 3	Use the Mat 03 calculator tool to determine the number of credits achieved for the construction products specified or procured. ONE CREDIT: Where 10% of the available points are achieved when assessing the superstructure. TWO CREDITS: Where 20% of the available points are achieved when assessing the superstructure, internal finishes, substructure and hard landscaping. THREE CREDITS: Where 30% of the available points are achieved when assessing the superstructure, internal finishes, substructure and hard landscaping. ONE EXEMPLARY LEVEL CREDIT: Where 50% of the available points are achieved when assessing the superstructure, internal finishes, substructure, hard landscaping and core building services.		3		1	1	1	ONGOING		Cartwright Pickard /Regal Interiors
MAT 05 DESIGNING FOR DURABILITY AND RESILIENCE	DESIGNING FOR DURABILITY AND RESILIENCE										
	REQ 1	PROTECTING VULNERABLE PARTS OF THE BUILDING FROM DAMAGE Protection measures are incorporated into the building's design and construction to reduce damage to the building's fabric or materials in case of accidental or malicious damage occurring. These measures must provide protection against: a. Negative impacts of high user numbers in relevant areas of the building. b. Damage from any vehicle or trolley movements in storage, delivery, corridor and kitchen areas. c. External building fabric damage by a vehicle. d. Potential malicious damage to building materials and finishes, in public and common areas.		1		1			FUTURE ACTION		Cartwright Pickard Whitecode
	REQ 2	PROTECTING EXPOSED PARTS OF THE BUILDING FROM MATERIAL DEGRADATION Key exposed building elements have been designed and specified to limit long and short term degradation due to environmental factors, through EITHER: a. The element or product achieving an appropriate quality or durability standard or design guide. If none are available, use BS 7543: 2015 as the default appropriate standard OR; b. A detailed assessment of the element's resilience when exposed to the applicable material degradation and environmental factors.									
	REQ 3	Include convenient access to the roof and façade for cost-effective cleaning, replacement and repair in the building's design.									
	REQ 4	Design the roof and façade to prevent water damage, ingress and detrimental ponding.									
MAT 06 MATERIAL EFFICIENCY	REQ 1	At the Preparation and Brief and Concept Design stages, set targets and report on opportunities and methods to optimise the use of materials at each of the following stages: a. Preparation and Brief b. Concept Design c. Developed Design d. Technical Design e. Construction		1		1			ACTION	Techincal note or similar to be provided covering concept design stage.	Cartwright Pickard
	REQ 2	Develop and record the implementation of material efficiency during: a. Developed Design b. Technical Design c. Construction									
	REQ 3	Report the targets and actual material efficiencies achieved.									
		SECTION SUB-TOTAL		14	0	10	2	2			
WASTE											
WST 01 CONSTRUCTION WASTE MANAGEMENT	CONSTRUCTION RESOURCE EFFICIENCY										
	REQ 3	Prepare a compliant Resource Management Plan covering: a. Non-hazardous waste materials (from on-site construction and dedicated off-site manufacture or fabrication), including demolition and excavation waste b. Accurate data records on waste arisings and waste management routes.		3		1	1	1	FUTURE ACTION		Regal Construction
	REQ 4	Meet or improve upon the following benchmarks for generating non-hazardous construction waste (this excludes demolition and excavation waste): - ONE CREDIT: ≤13.3m^3 OR ≤11.1 tonnes of waste per 100m^2 **of GIFA.** - TWO CREDITS: ≤7.5m^3 OR ≤6.5 tonnes of waste per 100m^2 **of GIFA.** - THREE CREDITS: ≤3.4m^3 OR ≤3.2 tonnes of waste per 100m^2 **of GIFA.**									
	DIVERSION OF RESOURCES FROM LANDFILL										
	REQ 5	Achieve the following diversion of resources from landfill targets for non-hazardous construction waste and demolition waste generated: - NON-DEMOLITION WASTE: ≥70% by volume OR ≥80% by tonnage. - DEMOLITION WASTE: ≥80% by volume OR ≥90% by tonnage.		1		1			FUTURE ACTION		Regal Construction
	REQ 6	Sort waste materials into key waste groups, either on-site or via a licensed contractor for recovery.									
WST 03 OPERATIONAL WASTE	OPERATIONAL WASTE										
	REQ 1	Provide a dedicated space for segregating and storing operational recyclable waste. The space is: a. Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams. b. Accessible to building users for depositing and to waste management contractors for collection. c. Of a capacity appropriate to the building type, size and predicted volumes of waste.		1		1			ONGOING	**Minimum requirement for Excellent.** Capacity note: The design team demonstrates that the provision of waste management facilities for the assessed building is adequate given the building type, occupier (if known), operational function and likely waste streams and volumes to be generated. Where it is not possible to determine what provision should be made, use the following guide for minimum storage space provision: At least 2m² per 1000m² of net floor area for buildings < 5000m² A minimum of 10m² for buildings ≥ 5000m² An additional 2m² per 1000m² of net floor area where catering is provided (with an additional minimum of 10m² for buildings ≥ 5000m²). The net floor area should be rounded up to the nearest 1000m²	Cartwright Pickard Whitecode (water point)
	REQ 2	For consistent and large amounts of operational waste generated, provide: a. Static waste compactors/ balers; situated in a service area/dedicated waste management space. b. Vessels for composting suitable organic waste OR adequate spaces for storing segregated food waste and compostable organic material for collection. c. A water outlet for hygiene purposes, where organic waste is stored or composted on site.									
WST 05 ADAPTATION TO CLIMATE CHANGE	RESILIENCE OF STRUCTURE, FABRIC, BUILDING SERVICES AND RENEWABLES INSTALLATION										
	REQ 1	Conduct a systematic risk assessment to identify the impact of expected extreme weather conditions arising from climate change. The assessment covers the installation of building services and renewable systems, as well as structural and fabric resilience aspects and includes: i. Hazard identification ii. Hazard assessment iii. Risk estimation iv. Risk evaluation v. Risk management.		1		1			ACTION	Stage 2 action required.	Stage 2 Team led by Cartwright Pickard.
	REQ 2	Develop recommendations or solutions based on the climate change adaptation strategy appraisal, before or during Concept Design, that aim to mitigate the identified impact									
	REQ 3	During Technical Design demonstrate how the recommendations proposed at Concept Design have been implemented where practical and cost effective.									
	EXEMPLARY LEVEL CREDIT - RESPONDING TO CLIMATE CHANGE										
	REQ 4	Achieve REQ 1 to 3.									
	REQ 5	Achieve the following credits: - HEA 04 - DESIGN FOR FUTURE THERMAL COMFORT. - ENE 01 - REDUCTION OF ENERGY USE AND CARBON EMISSIONS (≥ 6 credits). - ENE 04 - PASSIVE DESIGN ANALYSIS. - WAT 01 - WATER CONSUMPTION (≥ 3 credits). - MAT 05 - DESIGNING FOR DURABILITY AND RESILIENCE. - POL 03 - FLOOD RESILIENCE (≥ 1 credit) & SURFACE WATER RUN-OFF (2 credits).		1				1			

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		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
MANAGEMENT											
WST 06 DESIGN FOR DISASSEMBLY AND ADAPTABILITY	PROJECT DELIVERY PLANNING										
	DESIGN FOR DISASSEMBLY AND ADAPTABILITY - RECOMMENDATIONS										
	REQ 1	Conduct a study to explore the ease of disassembly and the functional adaptation potential of different design scenarios by the end of Concept Design.		1			1			Stage 2 action required.	Stage 2 Design Team led by Cartwright Pickard.
	REQ 2	Develop recommendations or solutions based on the study (REQ 1) during Concept Design, that aim to enable and facilitate disassembly and functional adaptation.									
	DESIGN FOR DISASSEMBLY AND ADAPTABILITY - IMPLEMENTATION										
	REQ 3	Achieve REQ 1 and 2.		1			1				Stage 4 team led by Architect
	REQ 4	Provide an update, during Technical Design, on: a. How the recommendations or solutions proposed by Concept Design have been implemented where practical and cost effective. b. Changes to the recommendations and solutions during the development of the Technical Design.									
	REQ 5	Produce a building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants.									
				9	0	4	3	2			
LAND USE AND ECOLOGY											
LE 01 SITE SELECTION	PREVIOUSLY OCCUPIED LAND										
	REQ 1	At least 75% of the proposed development's footprint is on an area of land which has previously been occupied.		1		1			ONGOING	TBC if the previous office building covered the whole site.	Regal
LE 02 ECOLOGICAL RISKS AND OPPORTUNITIES	PRE-REQUISITE - ASSESSMENT ROUTE SELECTION										
	REQ 1	The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.		Y		Y			ACTION		Greengage - Ecologist
	SURVEY AND EVALUATION										
	REQ 2	ROUTE 1: Completion of the Ecological Risk Evaluation Checklist indicates that assessment ROUTE 1 can be used.		1		1			ACTION		Greengage
	REQ 3	ROUTE 2: A Suitably Qualified Ecologist carries out a survey and evaluation for the site early enough to influence site preparation works, layout and, where necessary, strategic planning decisions (typically Preparation and brief stage)									
	REQ 4	The SQE's survey and evaluation determines the site's ecological baseline, including: a. Current and potential ecological value and condition of the site, and related areas within the zone of influence. b. Direct and indirect risks to current ecological value from the project. c. Capacity and feasibility for enhancement of the ecological value of the site and, where relevant, areas within the zone of influence.									
	REQ 5	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.									
	DETERMINING THE ECOLOGICAL OUTCOMES - ROUTE 1 AND 2										
	REQ 6	Survey and evaluation criteria (REQ 2–5) relevant to the chosen route have been achieved.		1		1			ACTION		Greengage
	REQ 7	The project team liaise and collaborate with representative stakeholders (see Methodology) early enough to influence key planning decisions (typically Concept Design stage), to: a. Identify the optimal ecological outcomes for the site. b. Identify, appraise and select measures to meet the optimal ecological outcomes for the site (criterion 7.a), in line with the mitigation hierarchy of action, according to the route being used (see Definitions):									
LE 03 MANAGING IMPACTS ON ECOLOGY	PRE-REQUISITE - ECOLOGICAL RISKS AND OPPORTUNITIES										
	REQ 1	LE 02's 'Survey and evaluation and Determining ecological outcomes' criteria have been achieved		Y		Y			ACTION		Greengage
	PLANNING AND MEASURES ON SITE										
	REQ 2	Further planning to avoid and manage negative ecological impacts on-site is carried out (see Methodology) early enough to influence the concept design and design brief as well as site preparation planning (typically Concept Design stage).		1		1			ACTION		Greengage
	REQ 3	On-site measures for managing negative ecological impacts during site preparation and construction are implemented in-practice (e.g. mitigation measures to protect existing ecological features) (see Methodology).									
	REQ 4	Criteria 2-3 are based on input from the project team in collaboration with representative stakeholders and data collated as part of the 'Determining ecological outcomes' in LE 02 Ecological risks and opportunities (see Methodology).									
	MANAGING NEGATIVE IMPACTS OF THE PROJECT										
	REQ 5	ROUTE 1: Criteria 2 and 3 have been achieved.		2		2			ACTION		Greengage Regal Construction
	REQ 6	ROUTE 1: Negative impacts from site preparation and construction works are managed according to the mitigation hierarchy and no net impact has resulted.									
	REQ 7	ROUTE 2: Criteria 2-4 have been achieved.									
	REQ 8	ROUTE 2: Negative impacts from site preparation and construction works have been managed according to the hierarchy and either: TWO CREDITS - No overall loss of ecological value has occurred. ONE CREDIT - The loss of ecological value has been limited as far as possible.									
LE 04 ECOLOGICAL CHANGE AND ENHANCEMENT	PRE-REQUISITE - MANAGING NEGATIVE IMPACTS ON ECOLOGY										
	REQ 1	Criterion 6 (for Foundation route) or 8 (for Comprehensive route) in LE 03 has been achieved.		Y		Y			ACTION		Greengage
	REQ 2	The client or contractor confirms compliance is monitored against all relevant UK, EU or international legislation relating to the ecology of the site.									
	ECOLOGICAL ENHANCEMENT										
	REQ 3	ROUTE 1: Locally relevant ecological measures have been implemented that enhance the site's ecological value. The measures adopted are based on (see Methodology). a: Recommendations from recognised 'local' ecological expertise and specialist input and guidance. b: Input from the project team in collaboration with representative stakeholders and data collated as part of 'Determining ecological outcomes' in LE 02.		1		1			ACTION		Greengage
	REQ 4	ROUTE 2: 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 (see Methodology). Measures are implemented in the following order: a: On site, and where this is not feasible, b: Off site within the Zone of Influence.									
	REQ 5	ROUTE 2: Data collated are analysed and where potentially valuable, provided to the local environmental records centres nearest to, or relevant for, the site.									
	CHANGE AND ENHANCEMENT OF ECOLOGY										
	REQ 6	ROUTE 2 ONLY: Up to three credits are awarded based on the change in ecological value occurring as a result of the project. This must be calculated in accordance with the process set out in GN36 - BREEAM, CEEQUAL and HQM Ecology Calculation Methodology – Route 2. Credits are awarded in line with the Reward Scale table in GN36 where there are no residual impacts on protected sites or irreplaceable habitats.		3		2	1		ACTION		Greengage
	EXEMPLARY LEVEL CREDIT - DETERMINING THE ECOLOGICAL OUTCOMES OF THE SITE (1 CREDIT)										
	REQ 7	The change in ecological value calculated under criterion 6 above confirms significant net gain has been achieved as set out in GN36 - BREEAM, CEEQUAL and HQM Ecology Calculation Methodology – Route 2.		1			1		ACTION		Greengage

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		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
		MANAGEMENT									
LE 05 LONG TERM ECOLOGY MANAGEMENT AND MAINTENANCE		PROJECT DELIVERY PLANNING									
		PRE-REQUISITE - STATUTORY OBLIGATIONS, PLANNING AND SITE IMPLEMENTATION									
	REQ 1	The client or contractor has confirmed that compliance is being monitored against all relevant UK, EU and international standards relating to the ecology of the site.		Y		Y			ACTION		Greengage
	REQ 2	The following must be achieved, according to the route being assessed: a: Foundation route (Route 1) - Criterion 6 in LE 03 has been achieved. b: Comprehensive route (Route 2) - Criterion 8 in LE 03 has been achieved, and at least one credit under LE 04 for 'Change and Enhancement of Ecology' has been awarded.									
		MANAGEMENT AND MAINTENANCE THROUGHOUT THE PROJECT (ROUTE 1 AND ROUTE 2)									
	REQ 3	Measures have been implemented to manage and maintain ecology throughout the project. These measures are based on input from the project team in collaboration with representative stakeholders and data collated as part of the 'Determining ecological outcomes' in LE 02 (see Methodology). To ensure the optimal ecological outcomes agreed in LE 02 are met in-practice, these measures must monitor and review the effectiveness of the mitigation and enhancement measures in place for LE 03 & LE 04 to ensure they are implemented.		1		1			FUTURE ACTION		Greengage Regal Construction
	REQ 4	A section on Ecology and Biodiversity has been included as part of the tenant or building owner information supplied, to inform the owner or occupant of local ecological features, value and biodiversity on or near the site (see Methodology). This should include detailed management and maintenance plans as required by landscape and asset managers as well as relevant parts of the handover information for occupiers written in a format that encourages understanding and supportive behaviours.									
		LANDSCAPE ECOLOGY MANAGEMENT PLAN									
	REQ 5	A Landscape and Ecology Management Plan, or equivalent, has been developed in accordance with BS 42020:2013 Section 11.11 covering at least the first five years after project completion as a minimum and including: a: Actions and responsibilities of relevant individuals prior to handover b: The ecological value and condition of the site at handover and how this is expected to develop and change over time c: Identification of opportunities for ongoing alignment with activities beyond the development project, which support the aims of BREEAM's Strategic Ecology Framework d: Identification and guidance to trigger appropriate remedial actions to address previously unforeseen impacts e: Clearly defined and allocated roles and responsibilities for delivering the plan		1		1			FUTURE ACTION		Greengage
	REQ 6	The landscape and management plan or similar will be updated to support maintenance of the ecological value of the site (see sections relating to Maintenance and Monitoring in CIEEM, CIRIA, IEMA, for helpful guidance)									
		SECTION SUB-TOTAL		13	0	11	1	1			
POLLUTION											
POL 01 IMPACT OF REFRIGERANTS		IMPACT OF REFRIGERANTS									
	REQ 1	NO REFRIGERANT USE									
		THREE CREDITS: No refrigerants are used within the installed plant or systems. OR									
	REQ 2	PRE-REQUISITE									
		All systems with electric compressors comply with the requirements of BS EN 378:2016 (parts 2 and 3). Refrigeration systems containing ammonia comply with the Institute of Refrigeration Ammonia Refrigeration Systems code of practice.		3		2			FUTURE ACTION		Whitecode
	REQ 3	IMPACT OF REFRIGERANTS									
	REQ 4	ONE CREDIT: Achieve a direct effect life cycle CO_2 equivalent emissions (DELC) of ≤ 1000 CO_2-eq/kW. OR									
	REQ 5	TWO CREDITS: Achieve a direct effect life cycle CO_2 equivalent emissions (DELC) of ≤ 100 CO_2-eq/Kw, OR; All refrigerants used have a global warming potential (GWP) ≤ 10.									
		LEAK DETECTION									
	REQ 6	LEAK DETECTION									
		All systems are hermetically sealed or only use environmentally benign refrigerants. OR									
	REQ 7	a.i. Systems have a permanent automated refrigerant leak detection system, that is robust and tested, and capable of continuously monitoring for leaks OR; a.ii. An inbuilt automated diagnostic procedure for detecting leakage is enabled. b. In the event of a leak, the system must be capable of automatically responding and managing the remaining refrigerant charge to limit loss of refrigerant.		1			1		FUTURE ACTION		Whitecode
POL 02 LOCAL AIR QUALITY		LOCAL AIR QUALITY									
	REQ 1	All heating and hot water is supplied by non-combustion systems. For example, only powered by electricity OR;									
	REQ 2	Emissions from all installed combustion plant that provide space heating and domestic hot water do not exceed the NO_x, Particulate matter and VOC levels for the corresponding appliance type, fuel and location. Some examples are shown below: GAS ONE CREDIT: GAS BOILER (NO_x ONLY) = 27 mg/kWh; GAS CHP (NO_x ONLY) = 34 mg/kWh. TWO CREDITS: GAS BOILER (NO_x ONLY) = 24 mg/kWh; GAS CHP (NO_x ONLY) = 30 mg/kWh. BIOMASS BOILER ONE CREDIT: NO_x = 130 mg/kWh (low pollution location)/ 56 mg/kWh (high pollution location); PARTICULATE MATTER = 14 mg/m^3 (low pollution location)/ 6 mg/m^3 (high pollution location); VOC = 7 mg/m^3. TWO CREDITS: NO_x = 70 mg/kWh (low pollution location)/ 50 mg/kWh (high pollution location); PARTICULATE MATTER = 11 mg/m^3 (low pollution location)/ 4 mg/m^3 (high pollution location); VOC = 5 mg/m^3.		2		2			FUTURE ACTION		Whitecode
POL 03 FLOOD AND SURFACE WATER MANAGEMENT		PRE-REQUISITE									
	REQ 1	An appropriate consultant is appointed to demonstrate the development's compliance with all criteria.		Y		Y					
		FLOOD RESILIENCE									
	REQ 2	TWO CREDITS: 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.									
	REQ 3 REQ 4	ONE CREDIT: A site-specific FRA confirms the development is in a flood zone that is defined as having a medium or high annual probability of flooding and is not in a functional floodplain. The FRA must take all current and future sources of flooding into consideration AND; One of the following must be achieved: a. The ground level of the building and access to both the building and the site, are designed (or zoned) so they are at least 600 mm above the design flood level of the site's flood zone. b. The final design of the building and the wider site reflects the recommendations made by an appropriate consultant in accordance with the hierarchy approach outlined in section 5 of BS 8533:2017.		2		2			FUTURE ACTION		Drainage Consultant
		SURFACE WATER RUN-OFF - PRE-REQUISITE									
	REQ 5	Surface water run-off design solutions must be bespoke, i.e. they must take account of the specific site requirements and natural or man-made environment of and surrounding the site.		Y		Y			ONGOING		Drainage Consultant
		SURFACE WATER RUN-OFF - RATE									
	REQ 6	Drainage measures are specified so that the peak rate of run-off from the site to the watercourses (natural or municipal) shows a 30% improvement for the developed site compared with the pre-developed site. This should comply at the 1-year and 100-year return period events.									
	REQ 7	Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified Sustainable Drainage Systems (SuDS) are in place.		1		1			ONGOING		Drainage Consultant
	REQ 8	Calculations include an allowance for climate change, In accordance with best practice planning guidance.									
		SURFACE WATER RUN-OFF - VOLUME									
	REQ 9	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									
	REQ 10 REQ 11	EITHER - 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.									
	REQ 12 REQ 13	OR - Justification from the appropriate consultant indicating why REQ 10 and 11 cannot be achieved, i.e. where infiltration or other SuDS techniques are not technically viable options. - Drainage design measures are specified so that the post-development peak rate of run-off is reduced to the limiting discharge. The limiting discharge is defined as the highest flow rate from the following options: a. The pre-development one-year peak flow rate b. The mean annual flow rate (Qbar) c. 2L/s/ha. For the one-year peak flow rate, the one-year return period event criterion applies.		1		1			ONGOING		Drainage Consultant
	REQ 14	Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified Sustainable Drainage Systems (SuDS) are in place.									
	REQ 15	Calculations include an allowance for climate change, In accordance with best practice planning guidance.									

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		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
MANAGEMENT											
	PROJECT DELIVERY PLANNING										
	MINIMISING WATERCOURSE POLLUTION										
	REQ 16	There is no discharge from the developed site for rainfall up to 5 mm (confirmed by the appropriate consultant).		1			1		ACTION	Drainage Consultant to confirm if this can be achieved.	Drainage Consultant
	REQ 17	Areas with a low risk source of watercourse pollution, an appropriate level of pollution prevention treatment is provided, using appropriate SuDS techniques.									
	REQ 18	Areas with a high risk of contamination or spillage of substances, such as petrol and oil, have separators are installed in surface water drainage systems.									
	REQ 19	Chemical or liquid gas storage areas have a means of containment fitted to the site drainage system.									
	REQ 20	All water pollution prevention systems are bespoke and have been designed and installed in accordance with the recommendations of documents such as the SuDS manual and other relevant industry best practice.									
	REQ 21	A comprehensive and up to date drainage plan of the site will be made available for the building occupiers.									
	REQ 22	Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS must be in place.									
	REQ 23	All external storage and delivery areas are designed and detailed in accordance with the current best practice planning guidance.									
POL 04 REDUCTION OF NIGHT TIME LIGHT POLLUTION	REDUCTION OF NIGHT TIME LIGHT POLLUTION										
	REQ 1	External lighting pollution has been eliminated through effective design that removes the need for external lighting. This does not adversely affect the safety and security of the site and its users. OR		1		1			ONGOING		Whitecode
	REQ 2	The external lighting strategy has been designed in compliance with Table 2 (and its accompanying notes) of the Institution of Lighting Professionals (ILP) Guidance notes for the reduction of obtrusive light, 2011.									
	REQ 3	External lighting (except safety and security lighting) is automatically switched off between 23:00 and 07:00.									
	REQ 4	If safety or security lighting is provided and will be used between 23:00 and 07:00, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILP guidance notes.									
	REQ 5	Illuminated advertisements are designed in compliance with ILP PLG05.									
POL 05 REDUCTION OF NOISE POLLUTION	REDUCTION OF NOISE POLLUTION										
	REQ 1	There are no noise-sensitive areas within the assessed building or within 800 m radius of the assessed site. OR		1		1			ONGOING		Whitecode RBA Acoustics
	REQ 2	A noise impact assessment compliant with BS 4142:2014 is commissioned. Noise levels must be measured for: a. Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed assessed site, inclusive of existing plant on a building. b. Noise rating level from the assessed building.									
	REQ 3	The noise impact assessment must be carried out by a suitably qualified acoustic consultant.									
	REQ 4	The noise level from the assessed building, as measured in the locality of the nearest or most exposed noise sensitive development, must be at least 5dB lower than the background noise throughout the day and night.									
	REQ 5	If the noise sources from the assessed building are greater than the levels described in criterion 4, measures have been installed to attenuate the noise at its source to a level where it will comply with the criterion.									
		SECTION SUB TOTAL		12	0	10	1	0			
INNOVATION											
INNOVATION	EXEMPLARY CRITERIA										
	REQ 1	Where the building demonstrates exemplary performance by meeting defined exemplary level performance criteria in one or more of following BREEAM assessment issues: 1.a: Man 01 Project brief and design (Simple buildings only) 1.b: Man 03 Responsible construction practices 1.c: Hea 01 Visual comfort 1.d: Hea 02 Indoor air quality 1.e: Hea 06 Security 1.f: Ene 01 Reduction of energy use and carbon emissions 1.g: Wat 01 Water consumption 1.h: Mat 01 Environmental impacts from construction products - Building life cycle assessment (LCA) 1.i: Mat 03 Responsible sourcing of construction products 1.j: Wst 01 Construction waste management 1.k: Wst 02 Use of recycled and sustainably sourced aggregates 1.l: Wst 05 Adaptation to climate change 1.m: LE 02 Ecological risks and opportunities 1.n: LE 04 Ecological change and enhancement 1.o: Pol 03 Flood and surface water management (Simple buildings only).		10		3	1	6		Responsible Construction Practices, Building Services LCA, LCA/LCC alignment Le 04 exemplary potential	
	REQ 2	One innovation credit can be awarded for each innovation application approved by BRE Global, where the building complies with the criteria defined within an approved innovation application form.									
		SECTION SUB TOTAL		10	0	3	1	6			

BREEAM PRE-ASSESSMENT TRACKER - DRAFT PRIOR TO WORKSHOP

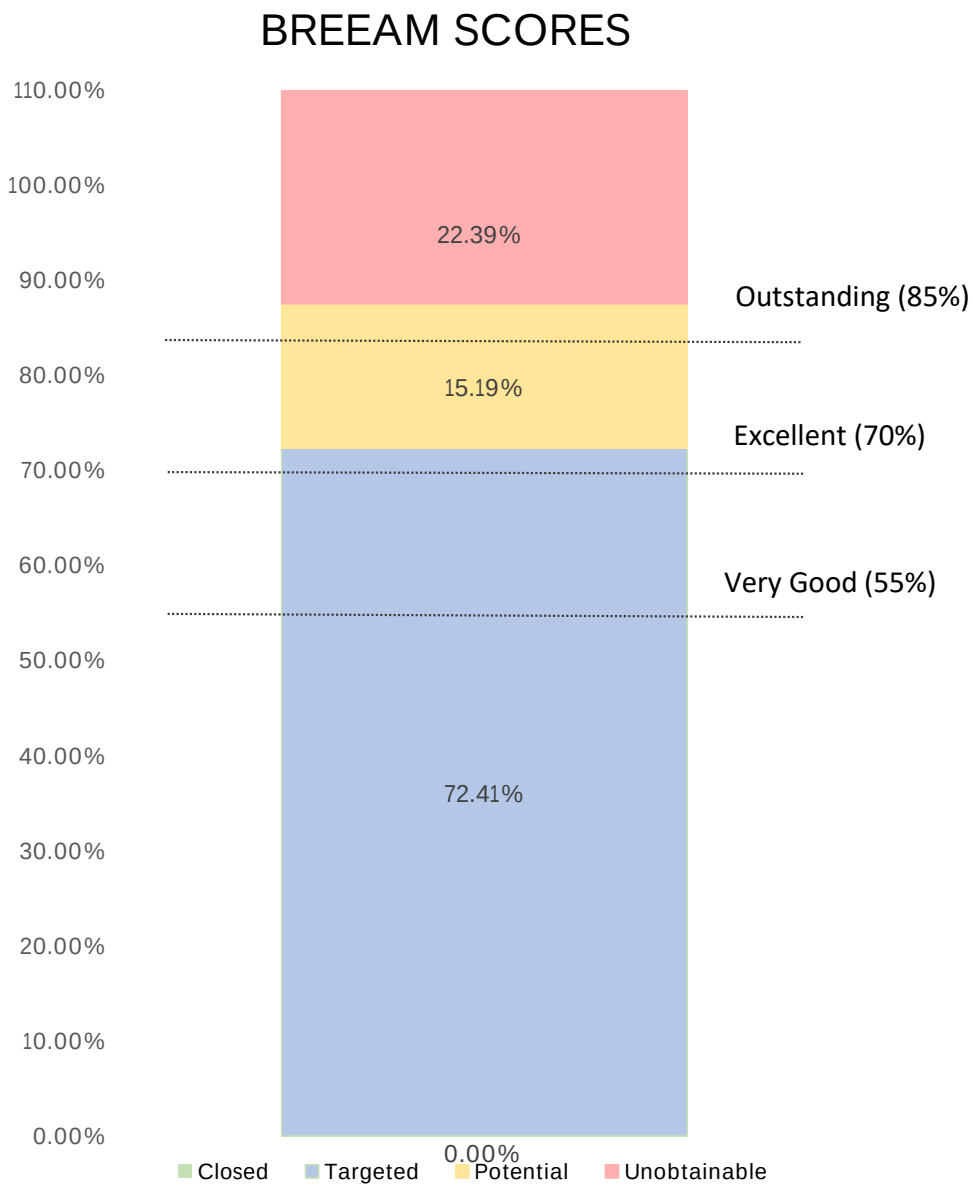
100 Avenue Road

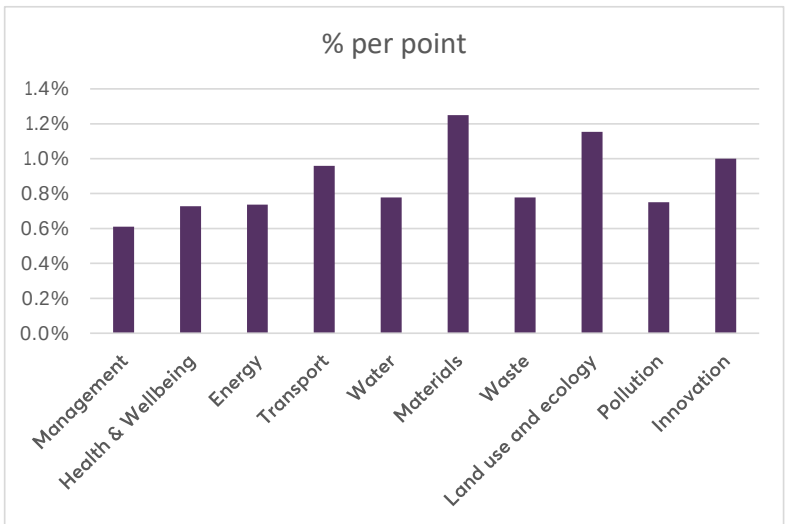
BREEAM UK NC 2018v6.1 Retail in Low-rise building

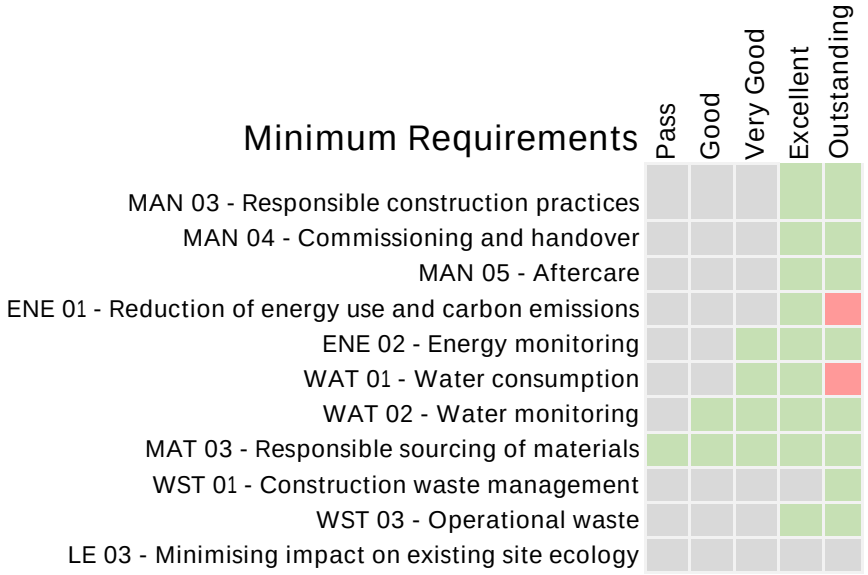
18/11/2024

REGAL

SUMMARY OF SCORES







Closed + Target Score: 72.41%

BREEAM PRE-ASSESSMENT TRACKER

100 Avenue Road

BREEAM UK NC 2018v6.1 Retail

For full BREEAM requirements and methodology, please refer to BREEAM New Construction 2018 6.1 Manual.

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		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
		MANAGEMENT									
MAN 01 PROJECT BRIEF AND DESIGN		PROJECT DELIVERY PLANNING									
	REQ 1	Prior to completion of the Concept Design, the project delivery stakeholders meet to identify and define Roles, responsibilities and Contributions for each key phase of project delivery.									
	REQ 2	Consider all the items required by BREEAM (provided upon request) when defining roles, responsibilities and contributions for each key phase of the project.		1		1			ACTION		Stage 2 Project Team
	REQ 3	Demonstrate how the Initial Project Brief, the Project Execution Plan, the Communication Strategy and the Concept Design have been influenced.									
		STAKEHOLDER CONSULTATION (INTERESTED PARTIES)									
	REQ 4	Prior to completion of RIBA Stage 2, the design team consult with all interested parties on matters that cover the minimum consultation content .									
	REQ 5	Demonstrate how consultation has influenced the Initial Project Brief and Concept Design.		1			1			Consultation documents with external stakeholders to be provided. Extensive documentation required covering all consultation points.	Stage 2 Project Team
	REQ 6	Provide consultation feedback to all parties by RIBA Stage 4.									
		BREEAM AP (CONCEPT DESIGN)									
	REQ 8	Strategic performance targets are formally agreed early in the design process.									
	REQ 9	At Concept Design Stage (RIBA Stage 2), involve a BREEAM AP in the project at an appropriate time and level to work with the project team, including the client, to maximise BREEAM performance, monitor progress, identify risks and opportunities, provide support to the project team and monitor and coordinate the generation of appropriate evidence by the project team.		1		1			ACTION	Lucy Cox to fulfill BREEAM AP role.	Regal (LC)
		BREEAM AP (DEVELOPED DESIGN)									
	REQ 10	Achieve REQ 8 and 9.									
	REQ 11	At Developed Design Stage (RIBA Stage 3-4), involve a BREEAM AP in the project at an appropriate time and level to work with the project team, including the client, to maximise BREEAM performance, monitor progress, identify risks and opportunities, provide support to the project team and monitor and coordinate the generation of appropriate evidence by the project team.		1		1			FUTURE ACTION	Lucy Cox to fulfill BREEAM AP role.	Regal (LC)
MAN 02 LIFE CYCLE COSTS		ELEMENTAL LCC									
	REQ 1	A competent person carries out an outline, entire asset LCC plan at RIBA Stage 2 together with any design options appraisals in line with 'Standardised method of life cycle costing for construction procurement' PD 156865: 2008.								To be appointed.	
	REQ 2	The elemental LCC plan: a. Includes future replacement costs over a period of analysis as required by the client or a 60 yr default period. b Includes service life, maintenance and operation cost estimates.		2		2			ACTION	**Report is to be reviewed by design team and considered as part of design development.**	TBC
	REQ 3	The design teams provides appropriate examples that demonstrate how the LCC has influence building and systems design and specification to minimise life cycle costs and maximise critical value.									
		COMPONENT LCC									
	REQ 4	A competent person develops a component level LCC options appraisal by the end OF RIBA Stage 4 in line with PD 156865: 2008 which includes (where present): Envelope, Services, Finishes and External spaces		1		1			FUTURE ACTION		TBC
	REQ 5	The design teams provides appropriate examples that demonstrate how the LCC has influence building and systems design and specification to minimise life cycle costs and maximise critical value.									
		CAPITAL COST REPORTING									
	REQ 6	Report the capital cost for the building in pounds per square metre of gross internal floor area (£k/ m²) as part of the submission to BRE.		1		1			FUTURE ACTION		Regal
MAN 03 RESPONSIBLE CONSTRUCTION PRACTICES		PRE-REQUISITE: SITE TIMBER									
	REQ 1	All timber and timber-based products used during the construction process of the project are 'legally harvested and traded timber'		Y		Y			FUTURE ACTION		Regal Construction
		ENVIRONMENTAL MANAGEMENT									
	REQ 3	All parties who at any stage manage the construction site (e.g. the principal contractor, the demolition contractor) operate an EMS covering their main operations.		1		1			FUTURE ACTION		Regal Construction
	REQ 4	All parties who at any point manage the construction site (e.g. the principal contractor, the demolition contractor) implement best practice pollution prevention in accordance with PPG6.									
		BREEAM AP (SITE)									
	REQ 5	PRE-REQUISITE: The client and the contractor formally agree performance targets.		1		1			FUTURE ACTION		Regal (LC)
	REQ 6	Involve a BREEAM AP to support the project (in line with the established in Man 01 credit) throughout the Construction, Handover and Close Out stages.									
		RESPONSIBLE CONSTRUCTION MANAGEMENT									
	REQ 7	TWO CREDITS: Refer to Table 4.1 in the BREEAM guidance (provided on request). Achieve all items required for one credit plus six additional items in Table 4.1.	Excellent: One Credit Outstanding: Two Credits	2		2			FUTURE ACTION		Regal Construction
	REQ 8	Compliance can be demonstrated by achieving a CCS score of 39 with at least 13 in each section, and demonstrating item g. Ensure clear and safe access in and around the buildings at the point of handover.									
	REQ 9	ALTERNATIVELY, FOR ONE CREDIT ONLY: Achieve the items required for one credit in Man 03 Table 4.1 (provided on request).									
		EXEMPLARY LEVEL: RESPONSIBLE CONSTRUCTION MANAGEMENT									
	REQ 23	ONE EXEMPLARY LEVEL CREDIT: Achieve all items included in Man 03 Table 4.1. This can be demonstrated through a CCS score of 39 with at least 13 in each section, plus compliance with the following Table 4.1 items: g. Ensure clear and safe access in and around the buildings at the point of handover. p. The fleet operators, undertakes driver training and awareness to promote safety within the development footprint and off site. q. The fleet operators, captures and investigates any road accidents, incidents and near misses and reports them back to the principal contractor. The principal contractor analyses these items.		1		1			FUTURE ACTION		Regal Construction
		PRE-REQUISITE: MONITORING CONSTRUCTION SITE IMPACTS									
	REQ 10	Assign responsibility to an individual for monitoring, recording and reporting energy use, water consumption and transportation data (where measured) resulting from all on-site construction processes (and dedicated off-site manufacturing) throughout the build programme.		Y		Y			FUTURE ACTION		Regal Construction
		MONITORING CONSTRUCTION SITE IMPACTS: UTILITIES									
	REQ 11	As for REQ 10 for energy consumption monitoring.									
	REQ 12	Set targets for the site energy consumption in kWh (and where relevant, litres of fuel used) as a result of the use of construction plant, equipment (mobile and fixed) and site accommodation.									
	REQ 13	Monitor and record data for the energy consumption described in REQ 12.									
	REQ 14	Report the total carbon dioxide emissions (total kgCO_2/project value) from the construction process via BREEAM Projects (for the purposes of potential future BREEAM performance benchmarking).		1		1			FUTURE ACTION		Regal Construction
	REQ 15	As for REQ 10 for water consumption monitoring.									
	REQ 16	Set targets for the potable water consumption (m³) arising from the use of construction plant, equipment (mobile and fixed) and site accommodation.									
	REQ 17	Monitor and record data for the potable water consumption described in REQ 16.									
	REQ 18	Use the collated data to report the total net water consumption (m³), i.e. consumption minus any recycled water use from the construction process via BREEAM Projects (for the purposes of potential future BREEAM performance benchmarking).									

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		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
MANAGEMENT											
	PROJECT DELIVERY PLANNING										
	MONITORING CONSTRUCTION SITE IMPACTS: TRANSPORT										
	REQ 19	As for REQ 10 for transport monitoring.									
	REQ 20	Set targets for transportation movements and impacts resulting from delivery of the majority of construction materials to site and construction waste from site. As a minimum this covers: - Transportation of materials from the point of supply to the building site, including any transport, intermediate storage and point of supply. This includes materials used in major building elements, ground works and landscaping materials. - Transportation of construction waste from the construction gate to waste disposal processing or recovery centre gate. This monitoring must cover the construction waste groups outlined in the project's resource management plan.		1		1			FUTURE ACTION		Regal Construction
	REQ 21	Monitor and record data for the transportation movements as described in REQ 20.									
	REQ 22	Using the collated data, report separately for materials and waste, the total transport-related carbon dioxide emissions ($kgCO_2$-eq), plus total distance travelled (km) via BREEAM Projects (for the purposes of potential future BREEAM performance benchmarking).									
MAN 04 COMMISSIONING AND HANDOVER	COMMISSIONING - TESTING SCHEDULE AND RESPONSIBILITIES										
	REQ 1	Prepare a schedule of commissioning and testing which identifies and includes a suitable timescale for commissioning and re-commissioning of all complex and non-complex building services and control systems and for testing and inspecting building fabric.									
	REQ 2	The schedule identifies the appropriate standards for all commissioning activities to be conducted, where applicable, in accordance with: Current Building Regulations, BSRIA, CIBSE and other appropriate standards. NOTE: process or manufacture-related equipment is excluded unless they form an integral part of the building HVAC services, such as some heat recovery systems.									
	REQ 3	Where a building management system (BMS) is specified: a. Carry out commissioning of air and water systems when all control devices are installed, wired and functional b. Include physical measurements of room temperatures, off-coil temperatures and other key parameters, as appropriate, in commissioning results c. The BMS or controls installation should be running in auto with satisfactory internal conditions prior to handover d. All BMS schematics and graphics (if BMS is present) are fully installed and functional to user interface prior to handover e. Fully train the occupier or facilities team in the operation of the system.		1		1			FUTURE ACTION		Regal Construction
	REQ 4	Appoint an appropriate project team member to monitor and programme pre-commissioning, commissioning and testing. Where necessary include re-commissioning activities on behalf of the client.									
	REQ 5	The principal contractor accounts for the commissioning and testing programme, responsibilities and criteria within their budget and the main programme of works. Allow the required time to complete all commissioning and testing activities prior to handover.									
	COMMISSIONING - DESIGN AND PREPARATION										
	REQ 6	Achieve REQ 1 to 5.									
	REQ 7	During the design stage, the client or the principal contractor appoints an appropriate project team member, provided they are not involved in the general installation works for the building services systems, with responsibility for: a Undertaking design reviews and giving advice on suitability for ease of commissioning. b Providing commissioning management input to construction programming and during installation stages. c Management of commissioning, performance testing and handover or post-handover stages. For buildings with complex building services and systems, this role needs to be carried out by a specialist commissioning manager.		1		1					
	TESTING AND INSPECTING BUILDING FABRIC										
	REQ 8	Achieve REQ 1 to 5.									
	REQ 9	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). A suitably qualified professional undertakes the survey and testing in accordance with the appropriate standard.		1		1			FUTURE ACTION		Regal Construction
	REQ 10	Rectify any defects identified prior to building handover and close out. Any remedial work must meet the required performance characteristics for the building or element as defined at the design stage.									
	HANDOVER										
	REQ 11	Prior to handover, develop two building user guides for the following users: - A non-technical user guide for distribution to the building occupiers. - A technical user guide for the premises facilities managers. A draft copy is developed and discussed with users first (where the building occupants are known) to ensure the guide is most appropriate and useful to potential users.		1		1			FUTURE ACTION		Regal Construction
	REQ 12	Prepare two training schedules timed appropriately around handover and proposed occupation plans for the following users: - A non-technical training schedule for the building occupiers. - A technical training schedule for the premises facilities managers.									
		SECTION SUB-TOTAL		18	0	17	1	0			
HEALTH AND WELLBEING											
	DAYLIGHTING										
	REQ 4	Daylighting criteria have been met using either of the following options: a. The relevant building areas meet good practice daylight factors and other criteria OR; b. The relevant building areas meet good practice average and minimum point daylight illuminance criteria OR; c. The relevant building areas meet the median daylight factors and minimum daylight factors criteria.		2			2		ACTION	TBC who could undertake this - may require additional appointment	TBC
	VIEW OUT										
	REQ 5	95% of the floor area in 95% of spaces for each relevant building area is within 8m of an external wall. The external wall has a window or permanent opening that provides an adequate view out. BREEAM defines relevant building areas requiring a view out to include areas of the building where: There are or will be workstations or benches or desks for building users. Close work will be undertaken or visual aids will be used.		1			1		ONGOING	Cartwright Pickard to review and confirm if achievable.	Cartwright Pickard
	REQ 6	The window or opening must be ≥ 20% of the surrounding wall area. Where the room depth is greater than 8m, compliance is only possible where the percentage of window or opening is the same as, or greater than, the values in Table 1.0 of BS 8206: part 2.									
	INTERNAL AND EXTERNAL LIGHTING LEVELS, ZONING AND CONTROL										
	REQ 9	All external lighting located within the construction zone is specified in accordance with BS 5489-1:2013 Code for the practice for the design of road lighting. 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.		1		1			FUTURE ACTION		Whitecode
	REQ 10	Where no external light fittings are specified (either separate from or mounted on the external building façade or roof), the criteria relating to external lighting do not apply and the credit can be awarded on the basis of compliance all other criteria.									

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		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
MANAGEMENT											
HEA 02 INDOOR AIR QUALITY	PROJECT DELIVERY PLANNING										
	PRE-REQUISITE - INDOOR AIR QUALITY PLAN										
	REQ 1	A site-specific indoor air quality plan has been produced and implemented in accordance with the guidance in Guidance Note GN06. The plan must be produced no later than the end of Concept Design and must consider the following: a. Removal of contaminant sources b. Dilution and control of contaminant sources: b.i. Where present, consideration is given to the air quality requirements of specialist areas such as laboratories c. Procedures for pre-occupancy flush out and purge ventilation d. Third party testing and analysis e. Maintaining good indoor air quality in-use. f. Any relevant local authority plans or policies (e.g. Air Quality Management Areas or Local Air Quality Action Plans).		Y			Y		ACTION	TBC who could complete - may require additional appointment.	TBC
	VENTILATION										
	REQ 2	The building has been designed to minimise the indoor concentration and recirculation of pollutants in the building as follows: a. Provide fresh air into the building in accordance with the criteria of the relevant standard for ventilation		1			1			TBC based on scope of fit-out.	Whitecode
HEA 04 THERMAL COMFORT	THERMAL MODELLING										
	REQ 1	Thermal modelling has been carried out using software in accordance with CIBSE AM11 Building Energy and Performance Modelling.		1		1			ONGOING		Whitecode
	REQ 2	The software used to carry out the simulation at the detailed design stage provides full dynamic thermal analysis. For smaller and more basic building designs with less complex heating or cooling systems, an alternative less complex means of analysis may be appropriate (such methodologies must still be in accordance with CIBSE AM11).									
	REQ 3	The modelling demonstrates that: a. For air-conditioned buildings: Summer and winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A, Table 1.5; or other appropriate industry standard. b. For naturally ventilated buildings: Winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A Environmental design, Table 1.5. or other appropriate industry standard AND; The building is designed to limit the risk of overheating, in accordance with the adaptive comfort methodology outlined in either of the following standards as appropriate; CIBSE TM52 or CIBSE TM59: Design methodology for the assessment of overheating risk in homes.									
	REQ 4	For air-conditioned buildings, the PMV (predicted mean vote) and PPD (predicted percentage of dissatisfied) indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool.									
	DESIGN FOR FUTURE THERMAL COMFORT										
	REQ 5	REQ 1 to 4 are achieved.		1		1			ONGOING		Whitecode
	REQ 6	The thermal modelling demonstrates that the relevant requirements set out in criterion 3 above are achieved for a projected climate change environment.									
	REQ 7	Where criterion 6 above is not met, the project team demonstrates how the building has been adapted, or designed to be easily adapted in future using passive design solutions in order to subsequently meet the requirements under criterion 6 above.		1		1			ONGOING		Whitecode
	REQ 8	For air-conditioned buildings, the PMV and PPD indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool.									
HEA 05 ACOUSTICS	ACOUSTIC PERFORMANCE										
	REQ 1	The building meets the appropriate acoustic performance standards and testing requirements in line with the acoustic principles of: b. Indoor ambient noise level		1		1			ONGOING		RBA Acoustics
	REQ 2	Alternatively, a suitably qualified acoustician (SQA) is appointed to define a bespoke set of performance and testing requirements for all function areas in the building. The bespoke performance requirements use the three acoustic principles defined in REQ 1.									
HEA 06 SECURITY	SECURITY OF SITE AND BUILDING										
	REQ 1	A Suitably Qualified Security Specialist (SQSS) conducts an evidence-based Security Needs Assessment (SNA) during or prior to Concept Design (RIBA Stage 2 or equivalent). The purpose of the SNA will be to identify attributes of the proposal, site and surroundings which may influence the approach to security for the development.		1		1			ACTION	To be appointed. The recommendations are to be included in the design.	TBC
	REQ 2	The SQSS develops a set of security controls and recommendations for incorporation into the proposals. Those controls and recommendations shall directly relate to the threats and assets identified in the preceding SNA.									
	REQ 3	The controls and recommendations shall be incorporated into proposals and implemented in the as-built development. Any deviation from those controls and recommendations shall be justified and agreed with the SQSS.									
HEA 07 SAFE AND HEALTHY ENVIRONMENTS	SAFE ACCESS										
	REQ 1	Dedicated and safe cycle paths are provided from the site entrance to any cycle storage, and connect to offsite cycle paths where applicable.		1			1		ONGOING	CP to review and confirm if this is likely achievable. Full guidance on safe access routes can be found in the BREEAM manual.	Cartwright Pickard
	REQ 2	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.									
	REQ 3	Pedestrian drop-off areas are designed off, or adjoining to, the access road and should provide direct access to other footpaths.									
	REQ 4	Where vehicle delivery access and drop-off areas form part of the assessed development, the following apply:									
	REQ 5	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.									
	REQ 6	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.									
	OUTSIDE SPACE										
	REQ 7	There is an outside space providing building users with an external amenity area.		1		1			ONGOING		Turkington Martin
		SECTION SUB-TOTAL		11	0	6	5	0			
ENERGY											
ENE 01 ENERGY USE AND CARBON EMISSIONS	ENERGY PERFORMANCE										
	REQ 1	Calculate an Energy Performance Ratio for New Construction (EPR_{NC}). Credits are awarded based on improvements of the actual building over the notional building's heating and cooling energy demand, primary energy consumption and CO_2 emissions.		9		4	2	3	ONGOING		Whitecode Energy
	PREDICTION OF OPERATIONAL ENERGY CONSUMPTION										
	REQ 2	Achieve criterion 2 in Ene 04 Low Carbon Design (Passive Design).		4		4			FUTURE ACTION		Whitecode Energy
	REQ 3	Estimate the occupancy, energy use for unregulated energy loads and management practices.									
	REQ 4	Undertake detailed energy modelling to predict the building energy consumption.									
	REQ 5	Undertake sensitivity analysis to determine the factors that can significantly impact building energy consumption.									
	REQ 6	Based on the results of the sensitivity analysis, and in discussion with the project team, the client and the prospective occupier devise scenarios to explore how high impact factors might influence the building energy consumption.									
	REQ 7	Undertake scenario modelling and use these findings to inform improvements to design of the building and to operational, maintenance, and handover strategies.									
	REQ 8	Determine an energy target for the building based on the results of the scenario modelling.									
	REQ 9	At the post-construction stage, the scenario modelling should be repeated to reflect the post construction building specification and, if necessary, adjust the energy target.									

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		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
MANAGEMENT											
ENE 02 ENERGY MONITORING		PROJECT DELIVERY PLANNING									
		SUB-METERING OF END USE CATEGORIES									
	REQ 1	Install energy metering systems so that at least 90% of the estimated annual energy consumption of each fuel is assigned to the end-use categories.		1		1			FUTURE ACTION		Whitecode
	REQ 2	Meter the energy consumption in buildings according to their total useful floor area: For buildings ≥1,000m²: by end-use category with an appropriate energy monitoring and management system. For buildings <1,000m²: i. an energy monitoring and management system, OR; ii. separate accessible energy sub-meters with pulsed or other open protocol communication outputs, for future connection to an energy monitoring and management system.									
	REQ 3	Building users can identify the energy consuming end uses, for example through labelling or data outputs.									
		SUB-METERING OF HIGH ENERGY LOAD AND TENANCY AREAS									
	REQ 4	Monitor a significant majority of the energy supply with an accessible energy monitoring and management system OR separate accessible energy sub-meters with pulsed or other open protocol communication outputs for future connection to an energy monitoring and management system for: i. tenanted areas OR; ii. relevant function areas or departments in single occupancy buildings.		1		1			FUTURE ACTION		Whitecode
	REQ 5	Sub-meter per floor plate in large single occupancy or single-tenancy buildings with one homogeneous function (e.g. hotel bedrooms, offices).									
ENE 03 EXTERNAL LIGHTING		EXTERNAL LIGHTING									
	REQ 1	No external lighting (which includes lighting on the building, at entrances and signs) OR;		1		1			FUTURE ACTION		Whitecode
	REQ 2	External light fittings within the construction zone with: a. Average initial luminous efficacy of not less than 70 luminaire lumens per circuit Watt b. Automatic control to prevent operation during daylight hours c. Presence detection in areas of intermittent pedestrian traffic.									
ENE 04 LOW CARBON DESIGN		PASSIVE DESIGN ANALYSIS									
	REQ 1	Achieve the HEA 04 - THERMAL MODELLING credit to demonstrate that the building design delivers appropriate thermal comfort levels in occupied spaces.		1		1			ACTION		Whitecode Energy
	REQ 2	The project team analyses the proposed building design and development during Concept Design to identify opportunities for the implementation of passive design measures.									
	REQ 3	Implement passive design measures to reduce the total heating, cooling, mechanical ventilation, lighting loads and energy consumption in line with the passive design analysis findings.									
	REQ 4	Quantify the reduced total energy demand and carbon dioxide (CO_2) emissions resulting from the passive design measures.									
		LOW AND ZERO CARBON FEASIBILITY STUDY									
	REQ 9	An energy specialist completes An LZC feasibility study by the end of Concept Design.		1		1			ACTION		Whitecode Energy
	REQ 10	Establish the most appropriate recognised local (on-site or near-site) LZC energy sources for the building or development, based on the feasibility study.									
	REQ 11	Specify local LZC technologies for the building or development in line with the feasibility study recommendations.									
	REQ 12	Quantify the reduced regulated carbon dioxide (CO_2) emissions resulting from the feasibility study.									
		SECTION SUB TOTAL		19	0	13	2	4			
TRANSPORT											
TRA 01 TRANSPORT ASSESSMENT AND TRAVEL PLAN		TRANSPORT ASSESSMENT AND TRAVEL PLAN									
	REQ 1	During the feasibility and design stages, develop a travel plan based on a site-specific travel assessment or statement.		2		2			ACTION	Planning transport assessment/travel plan to be BREEAM compliant.	Transport Consultant - Caneparo Regal London (commitment letter)
	REQ 2	The site-specific travel assessment or statement covers as a minimum: a. Existing travel patterns and opinions of existing building or site users towards cycling and walking, identifying constraints and opportunities, if relevant. b. Travel patterns and transport impact of future building users. c. Current local environment for walkers and cyclists. d. Reporting of the number and type of existing accessible amenities, within 500m of the site. e. Disabled access (accounting for varying levels of disability and visual impairment). f. Calculation of the existing public transport Accessibility Index (AI). g. Current facilities for cyclists.									
	REQ 3	The travel plan includes proposals to increase or improve sustainable modes of transport and movement of people and goods during the building's operation and use.									
	REQ 4	If the occupier is known, involve them in the development of the travel plan.									
	REQ 5	Demonstrate that the travel plan will be implemented post construction and be supported by the building's management in operation.									
TRA 02 SUSTAINABLE TRANSPORT MEASURES		TRANSPORT OPTIONS IMPLEMENTATION									
	REQ 1	Achieve the TRA 01 - TRAVEL PLAN credit.		10		6	1	6	ONGOING	AI at 100 Ave Rd is 39.55 for part of the site, and 40.51 for the other. Achievable points: - AI >8. - Existing amenities (UPS Access Point/London Mailbox & Shipping, Anytime Fitness, Swiss Cottage Library, Swiss Cottage Leisure centre, Green Light Pharmacy) etc. - Ensure a minimum of one new accessible amenity (2) 4 points = 6 credits.	
	REQ 2	Identify the sustainable transport measures									
	REQ 3	Award credits according to the Accessible Index (AI) of the project, and the total number of points achieved for the options implemented, see Table 7.3 below									
	OPT 1	1. The existing AI calculated in Tra 01 achieves the following: ≥ 4 for prison or MOD sites, rural location sensitive buildings, and other building group 3 ≥ 8 for all other building types		Y		Y					
	OPT 2	2. Demonstrate an increase over the existing Accessibility Index through: Negotiation with local bus, train or tram companies to increase the frequency of the local service provision for the development; or provision of a diverted bus route, a new or enhanced bus stop, or other similar solutions; or a dedicated service, such as a bus route or service.		Y				Y			
	OPT 3	3. 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. This may include signposting to public transport, cycling, walking infrastructure or local amenities.		Y				Y			
	OPT 4	4. Provide electric recharging stations of a minimum of 7kW for at least 10% of the total car parking capacity for the development.		Y				Y			
	OPT 5	5. Set up a car sharing group or facility to facilitate and encourage building users to car share. Raise awareness of the sharing scheme with marketing and communication materials. Provide priority spaces for car sharers for at least 5% of the total car parking capacity for the development. Locate priority parking spaces nearest the development entrance used by the sharing scheme participants.		Y				Y			
	OPT 6	6. During preparation of the brief, the design team consults with the local authority (LA) on the state of the local cycling network and public accessible pedestrian routes, to focus on whichever the LA deems most relevant to the project, and how to improve it. Agree and implement one proposition chosen with the local authority. The proposition supported by the development is additional to existing local plans and has a significant impact on the local cycling network or on pedestrian routes open to the public.		Y				Y			
	OPT 7	7. Install compliant cycle storage spaces to meet the minimum levels set out in BREEAM Table 7.5.		Y				Y			
	OPT 8	8. Provide at least two compliant cyclists' facilities for the building users: Showers / Changing facilities / Lockers / Drying spaces.		Y				Y			
	OPT 9	9. At least three existing accessible amenities are present, see BREEAM Table 7.6, where relevant for a Building Group.		Y		Y					
	OPT 10	10. Ensure a minimum of one new accessible amenity, in accordance with Table 7.6, for the relevant Building Group, is provided; or Ensure more than one new accessible amenity, in accordance with Table 7.6 for the relevant Building Group, is provided.		Y		Y					
	OPT 11	11. Implement one site-specific improvement measure, not covered by the options already listed in this issue, in line with the recommendations of the travel plan. Submit this for review by BRE.		Y				Y			
		SECTION SUB-TOTAL		12	0	8	1	6			

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		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
MANAGEMENT											
	PROJECT DELIVERY PLANNING										
WATER											
WAT 01 WATER CONSUMPTION	WATER CONSUMPTION										
	REQ 1	Use the BREEAM Wat 01 calculator to assess the efficiency of the domestic water-consuming components. The following components are assessed: – WCs – Urinals – Taps (wash-hand basins and, where specified, kitchen taps and waste disposal unit) – Showers – Baths – Dishwashers (domestic and commercial sized) – Washing machines (domestic and commercial or industrial sized).		5		1		4	FUTURE ACTION	**Minimum standard for Excellent.** Requires a water-consuming fixture to be installed.	Cartwright Pickard / Whitecode / Regal
	REQ 2	Compare the water consumption (litres/person/day) for the assessed building against a baseline performance and credits are awarded based on improvements over the baseline.									
	REQ 3	If a greywater or rainwater system is specified, use its yield in L/person/day to offset potable water demand from components.									
	REQ 4	If a greywater or rainwater system is specified and installed: a. Greywater systems in compliance with BS 8525-1:2010 Greywater systems - Part 1 Code of Practice b. Rainwater systems in compliance with BS 8515:2009+A1:2013 Rainwater harvesting systems - Code of practice.									
	REQ 5	For Healthcare buildings: The flushing control for each WC or urinal must be suitable for operation by patients with frail or infirm hands or activated by electronic sensors.									
	REQ 6	For Prison buildings: Sanitary components specified within a prison cell have a volume controller specified on the individual fittings or water supply to each cell.									
WAT 02 WATER MONITORING	WATER MONITORING										
	REQ 1	Specify a water meter on the mains water supply to each building.		1		1			FUTURE ACTION		Whitecode
	REQ 2	For water-consuming plant/ building areas consuming 10% or more of the total water demand, fit easily accessible sub-meters OR install water monitoring equipment integral to the plant or area.									
	REQ 3	For each meter (main and sub): a. Install a pulsed or other open protocol communication output AND b. Connect it to an appropriate utility monitoring and management system e.g. a BMS.									
	REQ 4	In buildings with swimming pools, or large water tanks and aquariums, fit separate sub-meters on the water supply and any associated changing facilities (toilets, showers etc.).									
	REQ 5	For buildings containing laboratories: fit a separate meter on the water supply to any process or cooling loop for 'plumbed-in' laboratory process equipment.									
	REQ 6	For Post Occupancy Certification: The water monitoring strategy used enables the identification of all water consumption for sanitary uses as assessed under Wat 01 (litres/person/day).									
WAT 03 WATER LEAK DETECTION	LEAK DETECTION SYSTEM										
	REQ 1	Install a leak detection system capable of detecting a major water leak: a. On the utilities water supply within the buildings, to detect any major leaks within the buildings AND b. Between the buildings and the utilities water supply, to detect any major leaks between the utilities supply and the buildings under assessment.		1		1			FUTURE ACTION		Whitecode
	REQ 2	The leak detection system is: a. A permanent automated water leak detection system that alerts the building occupants to the leak OR an inbuilt automated diagnostic procedure for detecting leaks b. Activated when the flow of water passing through the water meter or data logger is at a flow rate above a pre-set maximum for a pre-set period of time. This usually involves installing a system which detects higher than normal flow rates at meters or sub-meters. It does not necessarily require a system that directly detects water leakage along part or the whole length of the water supply system c. Able to identify different flow and therefore leakage rates, e.g. continuous, high or low level, over set time periods. Although high and low level leakage rates are not specified, the leak detection equipment installed must have the flexibility to distinguish between different flow rates to enable it to be programmed to suit the building type and owner's or occupier's usage patterns. d. Programmable to suit the owner's or occupier's water consumption criteria. e. Where applicable, designed to avoid false alarms caused by normal operation of large water consuming plant such as chillers.									
	FLOW CONTROL DEVICES										
	REQ 3	Install flow control devices that regulate the water supply to each WC area or sanitary facility according to demand, in order to minimise undetected wastage and leaks from sanitary fittings and supply pipework.		1			1		FUTURE ACTION	Not targeted based on likely level of fit out.	Whitecode
WAT O4 WATER EFFICIENT EQUIPMENT	WATER EFFICIENT EQUIPMENT										
	REQ 1	Identify all water demands from uses other than those listed under WAT 01 - WATER CONSUMPTION that could be realistically mitigated or reduced.		1		1			FUTURE ACTION	TM to ensure any irrigation is compliant.	Turkington Martin
	REQ 2	Identify systems or processes to reduce the relevant water demand, and establish a demonstrable reduction in the total water demand of the building.									
		SECTION SUB-TOTAL		9	0	4	1	4			
MATERIALS											
MAT 01 ENVIRONMENTAL IMPACTS FROM CONSTRUCTION PRODUCTS - LCA	SUPERSTRUCTURE - OPTION APPRAISAL (CONCEPT & TECHNICAL DESIGN)										
	REQ 1	COMPARISON WITH THE BREEAM LCA BENCHMARK (CONCEPT DESIGN)									
		During the Concept Design, demonstrate the environmental performance of the building as follows: 1.a Carry out a building LCA on of the superstructure design using either the BREEAMSimplified Building LCA tool or an IMPACT Compliant LCA tool according to the methodology (see Methodology on page 226). 1.b Submit the Mat 01/02 Results Submission Tool to BREat the end of Concept Design, and before planning permission is applied for (that includes external material or product specifications).									
	REQ 2	COMPARISON WITH THE BREEAM LCA BENCHMARK (TECHNICAL DESIGN)									
		During Technical Design, demonstrate the environmental performance of the building as follows: 2.a As criterion 1.a 2.b Submit the Mat 01/02 Results Submission Tool to BREat the end of Technical Design.									
	REQ 3	SUPERSTRUCTURE - OPTION APPRAISAL (CONCEPT DESIGN)									
		For Office, Industrial and Retail buildings, achieve REQ 1.									
	REQ 4	During Concept Design, identify opportunities for reducing environmental impacts as follows: a. Carry out building LCA options appraisal of 2-4 different superstructure design options. b. Use a building LCA tool that is recognised by BREEAM. c. For each design option, fulfil the same functional requirements specified by the client and all statutory requirements (to ensure functional equivalency). d. Integrate the LCA options appraisal activity within the wider design decision-making process. Record this in an options appraisal summary document. e. Record the following in the Mat 01/02 Results Submission Tool: - The differences between the design options - The design option selected by the client to be progressed beyond Concept Design - The reasons for selecting it and the reasons for not selecting the other design options. f. Submit the Mat 01/02 Results Submission Tool to BRE at the end of Concept Design, and before planning permission is applied for.		6		5	1		ACTION		Whitecode
	REQ 5	SUPERSTRUCTURE - OPTION APPRAISAL (TECHNICAL DESIGN)									
		During Technical Design identify opportunities for reducing environmental impacts as follows: a. Carry out building LCA options appraisal of 2 to 3 significantly different superstructure design options (based on the selected Concept Design option and as applicable to the Technical Design). b. Use a building LCA tool that is recognised by BREEAM. c. As REQ 4.c to 4.e. Where an options appraisal summary document was produced during Concept Design, update it to include the Technical Design options. d. Submit the Mat 01/02 Results Submission Tool to BRE at the end of Technical Design.							FUTURE ACTION		
	SUBSTRUCTURE AND HARD LANDSCAPING - OPTION APPRAISAL (CONCEPT DESIGN)										
	REQ 6	Achieve REQ 3 and 4.									
	REQ 7	During Concept Design identify opportunities for reducing environmental impacts as follows: a. Carry out building LCA options appraisal of a combined total of at least six significantly different substructure or hard landscaping design options (at least two shall be substructure and at least two shall be hard landscaping). b. Using a building LCA tool that is recognised by BREEAM. c. As REQ 4.c to 4.f above.		1		1			ACTION		Whitecode Energy
	EXEMPLARY LEVEL CREDIT - CORE BUILDING SERVICES - OPTION APPRAISAL (CONCEPT DESIGN)										
	REQ 8	Achieve REQ 3 and 4.									
	REQ 9	During Concept Design identify opportunities for reducing environmental impacts as follows: a. Carry out building LCA options appraisal of at least 3 significantly different core building services design options. b. Use a building LCA tool that is recognised by BREEAM. c. As REQ 4.c to 4.f above.		1		Y			ACTION		Whitecode Energy
	EXEMPLARY LEVEL CREDIT - LCA AND LCC ALIGNMENT										
	REQ 10	Achieve REQ 3 to 5.									
	REQ 11	Achieve MAN 02 ELEMENTAL LCC PLAN and COMPONENT LEVEL LCC OPTIONS APPRAISAL credits.									
	REQ 12	Include design options appraised for REQ 3-4 (and REQ 6-9, if pursued) during Concept Design in the 'elemental LCC plan'.		1		Y					
	REQ 13	Include design options appraised for REQ 5 during Technical Design in the 'component level LCC option appraisal'.									
	REQ 14	Integrate the aligned LCA and LCC options appraisal activity within the wider design decision-making process. Record this in an options appraisal summary document including the relevant cost information from the 'elemental LCC plan' and 'Component level LCC option appraisal'.									

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		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
MANAGEMENT											
MAT 03 RESPONSIBLE SOURCING OF CONSTRUCTION PRODUCTS	PROJECT DELIVERY PLANNING										
	PRE-REQUISITE										
	REQ 1	All timber and timber-based products used on the project are legally harvested and traded timber as per the UK Government's Timber Procurement Policy (TPP). MANDATORY FOR ALL RATINGS.		Y		Y			ONGOING		Architect
	ENABLING SUSTAINABLE PROCUREMENT										
	REQ 2	A sustainable procurement plan must be used by the design team to guide specification towards sustainable construction products. The plan must: a. Be in place before Concept Design. b. Include sustainability aims, objectives and strategic targets to guide procurement activities. c. Include a requirement for assessing the potential to procure construction products locally. There must be a policy to procure construction products locally where possible. d. Include details of procedures in place to check and verify the effective implementation of the sustainable procurement plan. e. If the plan is applied to several sites, or adopted at an organisational level, it must identify the risks and opportunities of procurement against a broad range of social, environmental and economic issues following the process set out in BS ISO 20400:2017.		1		1			ACTION	Regal have a company-wide SPP.	Regal London
	MEASURING RESPONSIBLE SOURCING										
	REQ 3	Use the Mat 03 calculator tool to determine the number of credits achieved for the construction products specified or procured. ONE CREDIT: Where 10% of the available points are achieved when assessing the superstructure. TWO CREDITS: Where 20% of the available points are achieved when assessing the superstructure, internal finishes, substructure and hard landscaping. THREE CREDITS: Where 30% of the available points are achieved when assessing the superstructure, internal finishes, substructure and hard landscaping. ONE EXEMPLARY LEVEL CREDIT: Where 50% of the available points are achieved when assessing the superstructure, internal finishes, substructure, hard landscaping and core building services.		3		1	1	1	ONGOING		Architect/Regal Interiors
MAT 05 DESIGNING FOR DURABILITY AND RESILIENCE	DESIGNING FOR DURABILITY AND RESILIENCE										
	REQ 1	PROTECTING VULNERABLE PARTS OF THE BUILDING FROM DAMAGE Protection measures are incorporated into the building's design and construction to reduce damage to the building's fabric or materials in case of accidental or malicious damage occurring. These measures must provide protection against: a. Negative impacts of high user numbers in relevant areas of the building. b. Damage from any vehicle or trolley movements in storage, delivery, corridor and kitchen areas. c. External building fabric damage by a vehicle. d. Potential malicious damage to building materials and finishes, in public and common areas.		1		1			FUTURE ACTION		Cartwright Pickard Whitecode
	REQ 2	PROTECTING EXPOSED PARTS OF THE BUILDING FROM MATERIAL DEGRADATION Key exposed building elements have been designed and specified to limit long and short term degradation due to environmental factors, through EITHER: a. The element or product achieving an appropriate quality or durability standard or design guide. If none are available, use BS 7543: 2015 as the default appropriate standard OR; b. A detailed assessment of the element's resilience when exposed to the applicable material degradation and environmental factors.									
	REQ 3	Include convenient access to the roof and façade for cost-effective cleaning, replacement and repair in the building's design.									
	REQ 4	Design the roof and façade to prevent water damage, ingress and detrimental ponding.									
MAT 06 MATERIAL EFFICIENCY	REQ 1	At the Preparation and Brief and Concept Design stages, set targets and report on opportunities and methods to optimise the use of materials at each of the following stages: a. Preparation and Brief b. Concept Design c. Developed Design d. Technical Design e. Construction		1		1			ACTION	Techincal note or similar to be provided covering concept design stage.	Cartwright Pickard
	REQ 2	Develop and record the implementation of material efficiency during: a. Developed Design b. Technical Design c. Construction									
	REQ 3	Report the targets and actual material efficiencies achieved.									
		SECTION SUB-TOTAL		14	0	10	2	2			
WASTE											
WST 01 CONSTRUCTION WASTE MANAGEMENT	CONSTRUCTION RESOURCE EFFICIENCY										
	REQ 3	Prepare a compliant Resource Management Plan covering: a. Non-hazardous waste materials (from on-site construction and dedicated off-site manufacture or fabrication), including demolition and excavation waste b. Accurate data records on waste arisings and waste management routes.		3		1	1	1	FUTURE ACTION		Regal Construction
	REQ 4	Meet or improve upon the following benchmarks for generating non-hazardous construction waste (this excludes demolition and excavation waste): - ONE CREDIT: ≤13.3m^3 OR ≤11.1 tonnes of waste per 100m^2 of GIFA. - TWO CREDITS: ≤7.5m^3 OR ≤6.5 tonnes of waste per 100m^2 of GIFA. - THREE CREDITS: ≤3.4m^3 OR ≤3.2 tonnes of waste per 100m^2 of GIFA.									
	DIVERSION OF RESOURCES FROM LANDFILL										
	REQ 5	Achieve the following diversion of resources from landfill targets for non-hazardous construction waste and demolition waste generated: - NON-DEMOLITION WASTE: ≥70% by volume OR ≥80% by tonnage. - DEMOLITION WASTE: ≥80% by volume OR ≥90% by tonnage.		1		1			FUTURE ACTION		Regal Construction
	REQ 6	Sort waste materials into key waste groups, either on-site or via a licensed contractor for recovery.									
WST 03 OPERATIONAL WASTE	OPERATIONAL WASTE										
	REQ 1	Provide a dedicated space for segregating and storing operational recyclable waste. The space is: a. Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams. b. Accessible to building users for depositing and to waste management contractors for collection. c. Of a capacity appropriate to the building type, size and predicted volumes of waste.		1		1			ONGOING	**Minimum requirement for Excellent.** KBCN0942: For Shell Only and Shell & Core (RFO Part 1, Part 2, and combined Part 1 & 2) assessments, all relevant criteria are applicable. Contractual agreements confirming future provision of spaces are not acceptable. Evidence must be provided showing waste storage space(s) that are suitably sized, dedicated and unlikely to be used by the future tenants for other purposes.	Cartwright Pickard Whitecode (water point)
	REQ 2	For consistent and large amounts of operational waste generated, provide: a. Static waste compactors/ balers; situated in a service area/dedicated waste management space. b. Vessels for composting suitable organic waste OR adequate spaces for storing segregated food waste and compostable organic material for collection. c. A water outlet for hygiene purposes, where organic waste is stored or composted on site.									
ATION TO CLIMATE CHANGE	RESILIENCE OF STRUCTURE, FABRIC, BUILDING SERVICES AND RENEWABLES INSTALLATION										
	REQ 1	Conduct a systematic risk assessment to identify the impact of expected extreme weather conditions arising from climate change. The assessment covers the installation of building services and renewable systems, as well as structural and fabric resilience aspects and includes: i. Hazard identification ii. Hazard assessment iii. Risk estimation iv. Risk evaluation v. Risk management.		1		1			ACTION	Stage 2 action required.	Stage 2 Team led by Cartwright Pickard.
	REQ 2	Develop recommendations or solutions based on the climate change adaptation strategy appraisal, before or during Concept Design, that aim to mitigate the identified impact									
	REQ 3	During Technical Design demonstrate how the recommendations proposed at Concept Design have been implemented where practical and cost effective.									

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		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
	MANAGEMENT										
WST 05 ADAPTA	PROJECT DELIVERY PLANNING										
	EXEMPLARY LEVEL CREDIT - RESPONDING TO CLIMATE CHANGE										
	REQ 4	Achieve REQ 1 to 3.									
	REQ 5	Achieve the following credits: - HEA 04 - DESIGN FOR FUTURE THERMAL COMFORT. - ENE 01 - REDUCTION OF ENERGY USE AND CARBON EMISSIONS (≥ 6 credits). - ENE 04 - PASSIVE DESIGN ANALYSIS. - WAT 01 - WATER CONSUMPTION (≥ 3 credits). - MAT 05 - DESIGNING FOR DURABILITY AND RESILIENCE. - POL 03 - FLOOD RESILIENCE (≥ 1 credit) & SURFACE WATER RUN-OFF (2 credits).		1			1			
WST 06 DESIGN FOR DISASSEMBLY AND ADAPTABILITY	DESIGN FOR DISASSEMBLY AND ADAPTABILITY - RECOMMENDATIONS										
	REQ 1	Conduct a study to explore the ease of disassembly and the functional adaptation potential of different design scenarios by the end of Concept Design.		1			1			Stage 2 action required.	Stage 2 Design Team led by Cartwright Pickard.
	REQ 2	Develop recommendations or solutions based on the study (REQ 1) during Concept Design, that aim to enable and facilitate disassembly and functional adaptation.									
	DESIGN FOR DISASSEMBLY AND ADAPTABILITY - IMPLEMENTATION										
	REQ 3	Achieve REQ 1 and 2.		1			1				Stage 4 team led by Architect
	REQ 4	Provide an update, during Technical Design, on: a. How the recommendations or solutions proposed by Concept Design have been implemented where practical and cost effective. b. Changes to the recommendations and solutions during the development of the Technical Design.									
	REQ 5	Produce a building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants.									
				9	0	4	3	2			
	LAND USE AND ECOLOGY										
LE 01 SITE SELECTION	PREVIOUSLY OCCUPIED LAND										
	REQ 1	At least 75% of the proposed development's footprint is on an area of land which has previously been occupied.		1		1			ONGOING	TBC if the previous office building covered the whole site.	Regal
LE 02 ECOLOGICAL RISKS AND OPPORTUNITIES	PRE-REQUISITE - ASSESSMENT ROUTE SELECTION										
	REQ 1	The client or contractor confirms compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.		Y		Y			ACTION		Greengage - Ecologist
	SURVEY AND EVALUATION										
	REQ 2	ROUTE 1: Completion of the Ecological Risk Evaluation Checklist indicates that assessment ROUTE 1 can be used.									
	REQ 3	ROUTE 2: A Suitably Qualified Ecologist carries out a survey and evaluation for the site early enough to influence site preparation works, layout and, where necessary, strategic planning decisions (typically Preparation and brief stage)									
	REQ 4	The SQE's survey and evaluation determines the site's ecological baseline, including: a. Current and potential ecological value and condition of the site, and related areas within the zone of influence. b. Direct and indirect risks to current ecological value from the project. c. Capacity and feasibility for enhancement of the ecological value of the site and, where relevant, areas within the zone of influence.		1		1			ACTION		Greengage
	REQ 5	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.									
	DETERMINING THE ECOLOGICAL OUTCOMES - ROUTE 1 AND 2										
	REQ 6	Survey and evaluation criteria (REQ 2–5) relevant to the chosen route have been achieved.		1		1			ACTION		Greengage
	REQ 7	The project team liaise and collaborate with representative stakeholders (see Methodology) early enough to influence key planning decisions (typically Concept Design stage), to: a. Identify the optimal ecological outcomes for the site. b. Identify, appraise and select measures to meet the optimal ecological outcomes for the site (criterion 7.a), in line with the mitigation hierarchy of action, according to the route being used (see Definitions):									
LE 03 MANAGING IMPACTS ON ECOLOGY	PRE-REQUISITE - ECOLOGICAL RISKS AND OPPORTUNITIES										
	REQ 1	LE 02's 'Survey and evaluation and Determining ecological outcomes' criteria have been achieved		Y		Y			ACTION		Greengage
	PLANNING AND MEASURES ON SITE										
	REQ 2	Further planning to avoid and manage negative ecological impacts on-site is carried out (see Methodology) early enough to influence the concept design and design brief as well as site preparation planning (typically Concept Design stage).		1		1			ACTION		Greengage
	REQ 3	On-site measures for managing negative ecological impacts during site preparation and construction are implemented in-practice (e.g. mitigation measures to protect existing ecological features) (see Methodology).									
	REQ 4	Criteria 2-3 are based on input from the project team in collaboration with representative stakeholders and data collated as part of the 'Determining ecological outcomes' in LE 02 Ecological risks and opportunities (see Methodology).									
	MANAGING NEGATIVE IMPACTS OF THE PROJECT										
	REQ 5	ROUTE 1: Criteria 2 and 3 have been achieved.		2		2			ACTION		Greengage Regal Construction
	REQ 6	ROUTE 1: Negative impacts from site preparation and construction works are managed according to the mitigation hierarchy and no net impact has resulted.									
	REQ 7	ROUTE 2: Criteria 2-4 have been achieved.									
	REQ 8	ROUTE 2: Negative impacts from site preparation and construction works have been managed according to the hierarchy and either: TWO CREDITS - No overall loss of ecological value has occurred. ONE CREDIT - The loss of ecological value has been limited as far as possible.									
LE 04 ECOLOGICAL CHANGE AND ENHANCEMENT	PRE-REQUISITE - MANAGING NEGATIVE IMPACTS ON ECOLOGY										
	REQ 1	Criterion 6 (for Foundation route) or 8 (for Comprehensive route) in LE 03 has been achieved.		Y		Y			ACTION		Greengage
	REQ 2	The client or contractor confirms compliance is monitored against all relevant UK, EU or international legislation relating to the ecology of the site.									
	ECOLOGICAL ENHANCEMENT										
	REQ 3	ROUTE 1: Locally relevant ecological measures have been implemented that enhance the site's ecological value. The measures adopted are based on (see Methodology). a: Recommendations from recognised 'local' ecological expertise and specialist input and guidance. b: Input from the project team in collaboration with representative stakeholders and data collated as part of 'Determining ecological outcomes' in LE 02.		1		1			ACTION		Greengage
	REQ 4	ROUTE 2: 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 (see Methodology). Measures are implemented in the following order: a: On site, and where this is not feasible, b: Off site within the Zone of Influence.									
	REQ 5	ROUTE 2: Data collated are analysed and where potentially valuable, provided to the local environmental records centres nearest to, or relevant for, the site.									
	CHANGE AND ENHANCEMENT OF ECOLOGY										
	REQ 6	ROUTE 2 ONLY: Up to three credits are awarded based on the change in ecological value occurring as a result of the project. This must be calculated in accordance with the process set out in GN36 - BREEAM, CEEQUAL and HQM Ecology Calculation Methodology – Route 2. Credits are awarded in line with the Reward Scale table in GN36 where there are no residual impacts on protected sites or irreplaceable habitats.		3		2	1		ACTION		Greengage
	EXEMPLARY LEVEL CREDIT - DETERMINING THE ECOLOGICAL OUTCOMES OF THE SITE (1 CREDIT)										
	REQ 7	The change in ecological value calculated under criterion 6 above confirms significant net gain has been achieved as set out in GN36 - BREEAM, CEEQUAL and HQM Ecology Calculation Methodology – Route 2.		1			1		ACTION		Greengage
NTENANCE	PRE-REQUISITE - STATUTORY OBLIGATIONS, PLANNING AND SITE IMPLEMENTATION										
	REQ 1	The client or contractor has confirmed that compliance is being monitored against all relevant UK, EU and international standards relating to the ecology of the site.		Y		Y			ACTION		Greengage
	REQ 2	The following must be achieved, according to the route being assessed: a: Foundation route (Route 1) - Criterion 6 in LE 03 has been achieved. b: Comprehensive route (Route 2) - Criterion 8 in LE 03 has been achieved, and at least one credit under LE 04 for 'Change and Enhancement of Ecology' has been awarded.									

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		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
MANAGEMENT											
LE 05 LONG TERM ECOLOGY MANAGEMENT AND MAI		PROJECT DELIVERY PLANNING									
		MANAGEMENT AND MAINTENANCE THROUGHOUT THE PROJECT (ROUTE 1 AND ROUTE 2)									
	REQ 3	Measures have been implemented to manage and maintain ecology throughout the project. These measures are based on input from the project team in collaboration with representative stakeholders and data collated as part of the 'Determining ecological outcomes' in LE 02 (see Methodology). To ensure the optimal ecological outcomes agreed in LE 02 are met in-practice, these measures must monitor and review the effectiveness of the mitigation and enhancement measures in place for LE 03 & LE 04 to ensure they are implemented.		1		1			FUTURE ACTION		Greengage Regal Construction
	REQ 4	A section on Ecology and Biodiversity has been included as part of the tenant or building owner information supplied, to inform the owner or occupant of local ecological features, value and biodiversity on or near the site (see Methodology). This should include detailed management and maintenance plans as required by landscape and asset managers as well as relevant parts of the handover information for occupiers written in a format that encourages understanding and supportive behaviours.									
		LANDSCAPE ECOLOGY MANAGEMENT PLAN									
	REQ 5	A Landscape and Ecology Management Plan, or equivalent, has been developed in accordance with BS 42020:2013 Section 11.11 covering at least the first five years after project completion as a minimum and including: a: Actions and responsibilities of relevant individuals prior to handover b: The ecological value and condition of the site at handover and how this is expected to develop and change over time c: Identification of opportunities for ongoing alignment with activities beyond the development project, which support the aims of BREEAM's Strategic Ecology Framework d: Identification and guidance to trigger appropriate remedial actions to address previously unforeseen impacts e: Clearly defined and allocated roles and responsibilities for delivering the plan		1		1			FUTURE ACTION		Greengage
	REQ 6	The landscape and management plan or similar will be updated to support maintenance of the ecological value of the site (see sections relating to Maintenance and Monitoring in CIEEM, CIRIA, IEMA, for helpful guidance)									
		SECTION SUB-TOTAL		13	0	11	1	1			
POLLUTION											
POL 01 IMPACT OF REFRIGERANTS		IMPACT OF REFRIGERANTS									
	REQ 1	NO REFRIGERANT USE THREE CREDITS: No refrigerants are used within the installed plant or systems. OR									
	REQ 2	PRE-REQUISITE All systems with electric compressors comply with the requirements of BS EN 378:2016 (parts 2 and 3). Refrigeration systems containing ammonia comply with the Institute of Refrigeration Ammonia Refrigeration Systems code of practice.		3				3	FUTURE ACTION	Not targeted based on level of fit-out.	Whitecode
	REQ 3	IMPACT OF REFRIGERANTS									
	REQ 4	ONE CREDIT: Achieve a direct effect life cycle CO_2 equivalent emissions (DELC) of ≤ 1000 CO_2-eq/kW. OR									
	REQ 5	TWO CREDITS: Achieve a direct effect life cycle CO_2 equivalent emissions (DELC) of ≤ 100 CO_2-eq/Kw, OR; All refrigerants used have a global warming potential (GWP) ≤ 10.									
		LEAK DETECTION									
	REQ 6	LEAK DETECTION All systems are hermetically sealed or only use environmentally benign refrigerants. OR		1				1	FUTURE ACTION	As above.	Whitecode
	REQ 7	a.i. Systems have a permanent automated refrigerant leak detection system, that is robust and tested, and capable of continuously monitoring for leaks OR; a.ii. An inbuilt automated diagnostic procedure for detecting leakage is enabled. b. In the event of a leak, the system must be capable of automatically responding and managing the remaining refrigerant charge to limit loss of refrigerant.									
POL 02 LOCAL AIR QUALITY		LOCAL AIR QUALITY									
	REQ 1	All heating and hot water is supplied by non-combustion systems. For example, only powered by electricity OR;		2		2			FUTURE ACTION		Whitecode
	REQ 2	Emissions from all installed combustion plant that provide space heating and domestic hot water do not exceed the NO_x, Particulate matter and VOC levels for the corresponding appliance type, fuel and location. Some examples are shown below: GAS ONE CREDIT: GAS BOILER (NO_x ONLY) = 27 mg/kWh; GAS CHP (NO_x ONLY) = 34 mg/kWh. TWO CREDITS: GAS BOILER (NO_x ONLY) = 24 mg/kWh; GAS CHP (NO_x ONLY) = 30 mg/kWh. BIOMASS BOILER ONE CREDIT: NO_x = 130 mg/kWh (low pollution location)/ 56 mg/kWh (high pollution location); PARTICULATE MATTER = 14 mg/m^3 (low pollution location)/ 6 mg/m^3 (high pollution location); VOC = 7 mg/m^3. TWO CREDITS: NO_x = 70 mg/kWh (low pollution location)/ 50 mg/kWh (high pollution location); PARTICULATE MATTER = 11 mg/m^3 (low pollution location)/ 4 mg/m^3 (high pollution location); VOC = 5 mg/m^3.									
POL 03 FLOOD AND SURFACE WATER MANAGEMENT		PRE-REQUISITE									
	REQ 1	An appropriate consultant is appointed to demonstrate the development's compliance with all criteria.		Y		Y					
		FLOOD RESILIENCE									
	REQ 2	TWO CREDITS: 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			FUTURE ACTION		Drainage Consultant
	REQ 3 REQ 4	ONE CREDIT: A site-specific FRA confirms the development is in a flood zone that is defined as having a medium or high annual probability of flooding and is not in a functional floodplain. The FRA must take all current and future sources of flooding into consideration AND; One of the following must be achieved: a. The ground level of the building and access to both the building and the site, are designed (or zoned) so they are at least 600 mm above the design flood level of the site's flood zone. b. The final design of the building and the wider site reflects the recommendations made by an appropriate consultant in accordance with the hierarchy approach outlined in section 5 of BS 8533:2017.									
		SURFACE WATER RUN-OFF - PRE-REQUISITE									
	REQ 5	Surface water run-off design solutions must be bespoke, i.e. they must take account of the specific site requirements and natural or man-made environment of and surrounding the site.		Y		Y			ONGOING		Drainage Consultant
		SURFACE WATER RUN-OFF - RATE									
	REQ 6	Drainage measures are specified so that the peak rate of run-off from the site to the watercourses (natural or municipal) shows a 30% improvement for the developed site compared with the pre-developed site. This should comply at the 1-year and 100-year return period events.		1		1			ONGOING		Drainage Consultant
	REQ 7	Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified Sustainable Drainage Systems (SuDS) are in place.									
	REQ 8	Calculations include an allowance for climate change, In accordance with best practice planning guidance.									
		SURFACE WATER RUN-OFF - VOLUME									
	REQ 9	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		1		1			ONGOING		Drainage Consultant
	REQ 10 REQ 11	EITHER - 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.									
	REQ 12 REQ 13	OR - Justification from the appropriate consultant indicating why REQ 10 and 11 cannot be achieved, i.e. where infiltration or other SuDS techniques are not technically viable options. - Drainage design measures are specified so that the post-development peak rate of run-off is reduced to the limiting discharge. The limiting discharge is defined as the highest flow rate from the following options: a. The pre-development one-year peak flow rate b. The mean annual flow rate (Qbar) c. 2L/s/ha. For the one-year peak flow rate, the one-year return period event criterion applies.									
	REQ 14	Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified Sustainable Drainage Systems (SuDS) are in place.									
	REQ 15	Calculations include an allowance for climate change, In accordance with best practice planning guidance.									
		MINIMISING WATERCOURSE POLLUTION									
	REQ 16	There is no discharge from the developed site for rainfall up to 5 mm (confirmed by the appropriate consultant).		1			1		ACTION	Drainage Consultant to confirm if this can be achieved.	Drainage Consultant
	REQ 17	Areas with a low risk source of watercourse pollution, an appropriate level of pollution prevention treatment is provided, using appropriate SuDS techniques.									
	REQ 18	Areas with a high risk of contamination or spillage of substances, such as petrol and oil, have separators are installed in surface water drainage systems.									
	REQ 19	Chemical or liquid gas storage areas have a means of containment fitted to the site drainage system.									
	REQ 20	All water pollution prevention systems are bespoke and have been designed and installed in accordance with the recommendations of documents such as the SuDS manual and other relevant industry best practice.									
	REQ 21	A comprehensive and up to date drainage plan of the site will be made available for the building occupiers.									
	REQ 22	Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS must be in place.									
	REQ 23	All external storage and delivery areas are designed and detailed in accordance with the current best practice planning guidance.									

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		BREEAM REQUIREMENTS	MANDATORY STANDARDS	AVAILABLE	CLOSED	TARGETED	POTENTIAL	NOT FEASIBLE	STATUS	COMMENTS	RESPONSIBLE
MANAGEMENT											
PROJECT DELIVERY PLANNING											
POL 04 REDUCTION OF NIGHT TIME LIGHT POLLUTION		REDUCTION OF NIGHT TIME LIGHT POLLUTION									
	REQ 1	External lighting pollution has been eliminated through effective design that removes the need for external lighting. This does not adversely affect the safety and security of the site and its users. OR		1		1			ONGOING		Whitecode
	REQ 2	The external lighting strategy has been designed in compliance with Table 2 (and its accompanying notes) of the Institution of Lighting Professionals (ILP) Guidance notes for the reduction of obtrusive light, 2011.									
	REQ 3	External lighting (except safety and security lighting) is automatically switched off between 23:00 and 07:00.									
	REQ 4	If safety or security lighting is provided and will be used between 23:00 and 07:00, this part of the lighting system complies with the lower levels of lighting recommended during these hours in Table 2 of the ILP guidance notes.									
	REQ 5	Illuminated advertisements are designed in compliance with ILP PLG05.									
POL 05 REDUCTION OF NOISE POLLUTION		REDUCTION OF NOISE POLLUTION									
	REQ 1	There are no noise-sensitive areas within the assessed building or within 800 m radius of the assessed site. OR		1		1			ONGOING		Whitecode RBA Acoustics
	REQ 2	A noise impact assessment compliant with BS 4142:2014 is commissioned. Noise levels must be measured for: a. Existing background noise levels at the nearest or most exposed noise-sensitive development to the proposed assessed site, inclusive of existing plant on a building. b. Noise rating level from the assessed building.									
	REQ 3	The noise impact assessment must be carried out by a suitably qualified acoustic consultant.									
	REQ 4	The noise level from the assessed building, as measured in the locality of the nearest or most exposed noise sensitive development, must be at least 5dB lower than the background noise throughout the day and night.									
	REQ 5	If the noise sources from the assessed building are greater than the levels described in criterion 4, measures have been installed to attenuate the noise at its source to a level where it will comply with the criterion.									
		SECTION SUB TOTAL		12	0	8	1	3			
INNOVATION											
INNOVATION		EXEMPLARY CRITERIA									
	REQ 1	Where the building demonstrates exemplary performance by meeting defined exemplary level performance criteria in one or more of following BREEAM assessment issues: 1.a: Man 01 Project brief and design (Simple buildings only) 1.b: Man 03 Responsible construction practices 1.c: Hea 01 Visual comfort 1.d: Hea 02 Indoor air quality 1.e: Hea 06 Security 1.f: Ene 01 Reduction of energy use and carbon emissions 1.g: Wat 01 Water consumption 1.h: Mat 01 Environmental impacts from construction products - Building life cycle assessment (LCA) 1.i: Mat 03 Responsible sourcing of construction products 1.j: Wst 01 Construction waste management 1.k: Wst 02 Use of recycled and sustainably sourced aggregates 1.l: Wst 05 Adaptation to climate change 1.m: LE 02 Ecological risks and opportunities 1.n: LE 04 Ecological change and enhancement 1.o: Pol 03 Flood and surface water management (Simple buildings only).		10		3	1	6		Responsible Construction Practices, Building Services LCA, LCA/LCC alignment Le 04 exemplary potential	
	REQ 2	One innovation credit can be awarded for each innovation application approved by BRE Global, where the building complies with the criteria defined within an approved innovation application form.									
		SECTION SUB TOTAL		10	0	3	1	6			

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