CIRCLE SUSTAINABILITY

Sustainability Statement

9-12 New Collage Parade

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Sustainability Statement
9-12 New College Parade

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Executive summary

Overview

The proposed project consists of the demolition of parts of the existing building, the retention of the existing two-storey facades and erection of an Seven-storey building to provide a mixed-use development. This will deliver a 59-room boutique hotel, three apartments across the first floor and a restaurant on the lower ground floor. Associated refuse and bicycle stores, amenity spaces and landscaping are also included within the proposed development. Moreover, the development will enhance the ecological value of the site through measures such as the implementation of bird and bat boxes where feasible.

This Sustainability Statement will be provided as evidence to the London Borough of Camden to demonstrate the development's holistic approach to sustainable design and construction. It summarises the contribution that the design will make to create a more sustainable development, drawing on information provided by specialist consultants and design reports, and identifying key features intrinsic to achieving low carbon developments.

Key sustainability features within the development will include:

- The development will reduce total carbon emissions by 60.29% over Building Regulations, using SAP 10.2 carbon factors, meeting Building Regulations 2021 Part L requirements;
- Utilisation of an air source heat pump system, PV panels, mechanical ventilation with heat recovery and waste-water heat recovery as well as passive design measures to mitigate climate change;
- A water consumption target of 110 litres/person/day through the implementation of water efficiency measures;
- The inclusion of sustainable transport option such as secure cycle storage, along with the extensive transport connections available;
- Provisions for dedicated internal waste storage and recycling facilities according to the London Borough of Camden requirements CC5: Waste;
- A sustainable materials procurement policy and an efficient waste strategy on site;
- The implementation of health and wellbeing measures through design and operational procedures, including daylight, optimum indoor air quality and thermal comfort; and
- Protection of ecology on site during construction and biodiversity enhancement measures, such as the implementation of bird and bat boxes where feasible.

Key Sustainability Measures

In summary, the key measures incorporated to meet planning requirements and to achieve a low carbon development address the following key areas of sustainable design and construction:

- Energy and CO_2
- Adaptation to climate change
- Flood risk mitigation and SuDS
- Waste
- Water efficiency
- Transport and connectivity
- Materials
- Health and wellbeing
- Land use and ecology

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Introduction

Sustainability Introduction

The design team has significant experience in delivering schemes that are considered highly sustainable, either through application of formal green building rating systems, such as BREEAM and Home Quality Mark, as well as applying benchmarks from standards such as Passivhaus Design and adopting precedents from industry exemplary sustainable developments.

The scheme will reflect the holistic nature of sustainable development in the London Borough of Camden. The development will provide much needed high-quality commercial and residential space and will use local labour to boost employment. Health and wellbeing will be incorporated in the design by maximising daylighting and utilising healthy materials. Moreover, the site's ecological value will be maintained, protected and enhanced through measures such as the implementation of bird and bat boxes where feasible.

BREEAM Assessment

Eight Versa carried out a preliminary BREEAM assessment has been carried out for the proposed development under BREEAM 2018 New Construction V6 methodology. The project team are targeting a BREEAM Excellent rating for the development. The BREEAM preliminary report can be found in Appendix A.

Description of Development

The proposed development is to be located at 9-12 New College Parade, London, NW3 5EP, in the London Borough of Camden. The site has an area of about 420m^2 and currently has four existing retail stores, including Chinese restaurant, beaty salon, picture framing shop and tea shop. All four amenities share the same existing two-storey Edwardian Baroque facade. Figure 1 illustrates the existing elevation of the buildings.

The proposed project consists of the demolition of parts of the existing building, the retention of the existing two-storey facades and erection of a seven-storey building to provide a mixed-use development. This will deliver a 59 room boutique hotel, Three apartments across the first floor and ground and basement retail units with a total GIA of approximately 2,137 m^2. Associated refuse and bicycle stores, amenity spaces and landscaping are also included within the proposed development. Figure 2 and Figure 3 illustrate the proposed elevation and the ground floor plan, respectively.

The aspiration for the scheme is to significantly improve the existing site and its immediate environment by providing an efficient and inclusive development, which meets the policy recommendations of the London Borough of Camden.

Figure 1: Existing elevation of 9-12 New College Parade.

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Figure 2: Proposed ground floor plan of 9-12 New College Parade.

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Policy Context

National Context: The 2008 Climate Change Act

The UK Government is committed to reducing the UK's carbon emissions by 100% over 1990 levels through the Climate Change Act 2008. Truly sustainable design and construction as well as the green agenda within the construction industry across the UK is inherent for achieving these ambitious emission targets. This development aims to do both of these.

To help monitor carbon reductions and to plot progress being made for future plans and investments in the UK's low-carbon economy, intermediary targets have been established to ensure that the UK remains on course for meeting the 100% reduction by 2050.

Concurrent with reducing CO_2 emissions by 100% by 2050 is the European Climate Change Policy targets. It sets the objective of ensuring 20% of energy consumption is generated from renewable sources by 2020 whilst also reducing Europe's carbon footprint by 20%. Ensuring a fabric first approach with consideration to renewable energy production fits both the climate change act and the European Commission's 2020 targets for reducing greenhouse gas (GHG) emissions.

National Context: National Planning Policy Framework 2021

The National Planning Policy Framework (NPPF) published in 2021 sets out the UK Government's planning policies for England. Planning law requires that applications for planning permission must be determined in accordance with the local development plan unless material considerations indicate otherwise. The National Planning Policy Framework must be taken into account in preparing the development plan and is a material consideration in planning decisions. Planning policies and decisions must also reflect relevant international obligations and statutory requirements.

Regional Context: The London Plan 2021

The London Plan (March 2021) is the overall strategic plan (Spatial development Strategy) for London, which plays a key role in the planning process in all the 32 London Boroughs and the City of London.

The London Plan aims to shape the planning process and sets out an integrated economic, environmental, transport and social framework for the 32 London Boroughs, the City of London and the Mayoral Development Corporations (MDCs) over the next 20-25 years (2019-2041), including the following key aspects of the Mayor of London's other strategies:

- Transport;
- Economic Development;
- Housing;
- Culture;
- Social issues (such as children and young people, health inequalities and food); and
- A range of environmental issues (such as climate change, air quality, noise and waste).

Within the London Plan there are a number of key targets for 'major developments', not applicable to this scheme:

- Policy SI 2: Development should be net zero-carbon and should include a detailed energy strategy to demonstrate how the zero-carbon target will be met within the framework of the energy hierarchy; and,
- A minimum on-site reduction of at least 35% over Target Emission Rate identified in Building Regulations 2013 is required.

The London Plan (2021) also sets out the following targets for major developments. This has been followed as guidance for 'best practice':

- Efficient use of natural resources (including water);
- Minimising pollution (including noise, air and urban runoff);
- Minimising the generation of waste and maximising reuse or recycling;
- Avoiding impacts from natural hazards (including flooding);
- Ensuring developments are comfortable and secure for users;
- Securing sustainable procurement of materials, using local supplies where feasible; and
- Promoting and protecting biodiversity and green infrastructure.

Of particular relevance to this report are the following policies required by the Plan:

- Policy D6 - Housing Quality and Standards
- Policy G4 - Open Space
- Policy G5 - Urban Greening
- Policy G6 - Biodiversity and Access to Nature
- Policy SI1 - Improving Air Quality
- Policy SI2 - Minimising Greenhouse Gas Emissions
- Policy SI3 - Energy Infrastructure
- Policy SI4 - Managing Heat Risk
- Policy SI5 - Water Infrastructure
- Policy SI12 - Flood Risk Management
- Policy SI13 - Sustainable Drainage
- Policy T1 - Strategic Approach to Transport
- Policy T3 - Transport Capacity, Connectivity and Safeguarding
- Policy T5 - Cycling
- Policy T6 - Car Parking

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Local Context: The London Borough of Camden's Local Plan 2016 - 2031
The Camden Local Plan, adopted in 2017, sets out the Council's planning policies and replaces the Core Strategy and Development Policies planning documents. It ensures that Camden continues to have robust, effective and up-to-date planning policies that respond to changing circumstances and the borough's unique characteristics.

At a minimum, the following policy requirements will be demonstrated in this Sustainability Statement:

Policy C1: Health and wellbeing
- Developments will require to positively contribute to creating high quality, active, safe and accessible places.
- Proposals for major development schemes will need to include a Health Impact Assessment (HIA).

Policy C5: Safety and security
- Developments will require to demonstrate that design principles that contribute to community safety and security are incorporated.
- All buildings and places are expected to meet the highest practicable standards of accessible and inclusive design so they can be used safely, easily and with dignity by all.

Policy A1: Managing the impact of development
Developments need to ensure that they protect the quality of life of occupiers and neighbours. The following factors will be taken into consideration:
- Sunlight, daylight and overshadowing;
- Artificial lighting levels;
- Transport impacts, including the use of Transport Assessments, Travel Plans and Delivery and Servicing Management Plans; impacts of the construction phase, including the use of Construction Management Plans;
- Noise and vibration level;
- Odour, fumes and dust;
- Microclimate;
- Contaminated land; and
- Impact upon water and wastewater infrastructure.

Policy A3: Biodiversity
- Developments will be assessed against their ability to realise benefits for biodiversity through the layout, design and materials used in the built structure and landscaping elements.
- Improvements to green corridors must be secured, particularly where a development scheme is adjacent to an existing corridor.
- Demolition and construction phase of development, including the movement of works vehicles, are to be planned to avoid disturbance to habitats and species and ecologically sensitive areas, and the spread of invasive species.
- The loss of trees and vegetation of significant amenity, historic, cultural or ecological value will be resisted, including proposals which may threaten the continued wellbeing of such trees and vegetation.
- Trees and vegetation which are to be retained are required to be satisfactorily protected during the demolition and construction phase of development in line with BS 5837:2012 'Trees in relation to Design, Demolition and Construction' and be positively integrated as part of the site layout.
- Replacement trees or vegetation are expected to be provided where the loss of significant trees or vegetation or harm to the wellbeing of these trees and vegetation has been justified in the context of the proposed development.
- Developments are expected to incorporate additional trees and vegetation, wherever possible

Policy A4: Noise and vibration
Development should have regard to Camden's Noise and Vibration Thresholds (Appendix 3).
Planning permission will not be granted for:
- development likely to generate unacceptable noise and vibration impacts; or
- development sensitive to noise in locations which experience high levels of noise, unless appropriate attenuation measures can be provided and will not harm the continued operation of existing uses.

Policy D1: Design
- Developments will need to be of high quality and sustainable in design and construction, incorporating best practice in resource management and climate change mitigation and adaptation.
- Developments should comprise of details and material that are of high quality and complement the local character.

- Development should be inclusive and accessible for all as well as promotes health.
- Developments should respond to natural features and preserve gardens and other open space.
- High quality landscape design should be incorporated and opportunities for greening must be maximised through planting of trees and other soft landscaping.

Policy CC1: Climate change mitigation

- All developments are required to reduce carbon dioxide emissions through following the steps in the energy hierarchy.
- All major developments are required to demonstrate how the London Plan targets for carbon dioxide have been met.
- The location of the development and mix of land uses should minimise the need to travel by car and help to support decentralised energy networks.

Policy CC2: Adapting to climate change

- Existing green spaces should be protected, and new appropriate green infrastructure must be promoted.
- Surface water run-off should not increase and, wherever possible be reduced through increasing permeable surfaces and use of Sustainable Drainage Systems.
- Biodiverse roofs, combination of green and blue roofs and green walls, where appropriate, must be incorporated.
- Measures to reduce the impact of urban and dwelling overheating must be considered, including the application of the cooling hierarchy.
- Development schemes should demonstrate how adaptation measures and sustainable development principles have been incorporated into the design and proposed implementation.
- New build residential development will be encouraged to use the Home Quality Mark and Passivhaus design standards.
- Conversions and extensions of more than 500m^2 residential floorspace or more than 5 dwellings are encouraged to achieve 'Excellent' in BREEAM domestic refurbishment.

Policy CC3: Water and Flooding

- Water efficiency measures must be incorporated.
- Harm to the water environment must be avoided and water quality must be improved.
- The impact of development in areas at risk of flooding must be considered and appropriate flood resilient measures must be incorporated.
- Sustainable Drainage Systems (SuDS) must be utilised in line with the drainage hierarchy to achieve a greenfield run-off rate, where feasible.

Policy CC4: Air Quality

- It should be ensured that the impact of development on air quality is mitigated and that exposure of poor air quality is reduced in the borough.
- Air Quality Assessments are required where development is likely to expose residents to high levels of air pollution.

Policy CC5: Waste

Developments must ensure the inclusion of facilities for storage and collection of waste and recycling.

Policy T1: Prioritising walking, cycling and public transport

Development should provide for accessible, secure cycle parking facilities exceeding the minimum requirements outlined within the London Plan and design requirements outlined within the SPD.

Policy T2: Parking and car-free development

- All new developments are required to be car-free.
- On-street and on-site parking permits will not be issued in connection with new developments.

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Energy and CO_2

Energy Strategy

The energy strategy for the scheme is detailed in the Energy Assessment report issued by Eight Versa in October 2022. As shown in Table 1, the whole development will reduce carbon emissions by 23.1% from the fabric energy efficiency measures described in the 'Be Lean' section using SAP 10.2 carbon dioxide emission factors. Total carbon emissions will be reduced by 41.9% over Building Regulations Part L 2021 using SAP 10.2 carbon dioxide emission factors, with the further inclusion of a proposed communal air source heat pump and photovoltaic panels. Therefore, the scheme meets and exceeds the target of overall 35% carbon reduction over Part L building Regulations as set out in the London Plan Policy SI2 and Local Policies

The Energy Hierarchy

The proposed scheme has followed the energy hierarchy, illustrated in Figure 4 below.

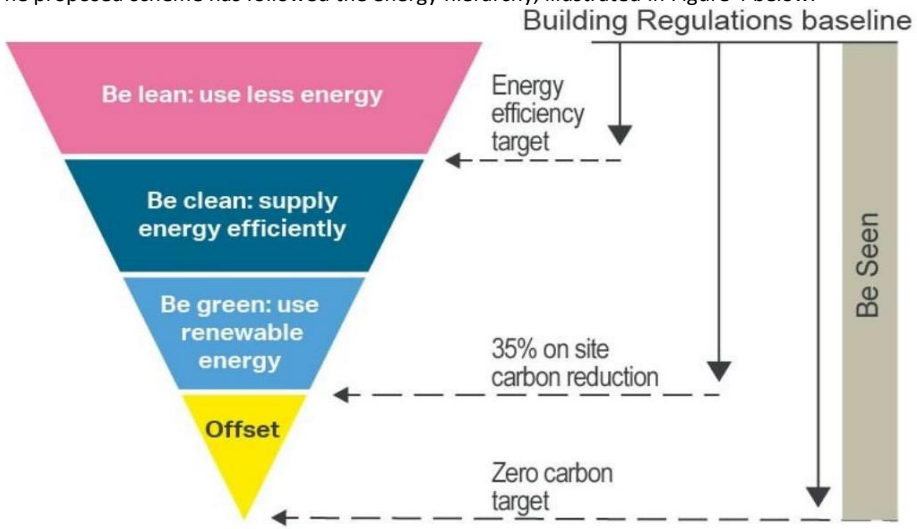

Figure 4: This methodology, widely used in accordance with the Sustainable Design and Construction Supplementary Planning Guidance (SPG) 2014, has been adopted for the scheme using a 'Lean', 'Clean', and Green' approach.

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Site Wide	Total regulated emissions kgCO2/m^2/annum)	Cumulative CO2 savings (tCO2/annum)	Accumulative Percentage Savings
Baseline*	32.76	41,571	-
After Lean Measures	21.89	25,953	33.18
After Clean Measures	21.89	25,953	33.18
After Green Measures	13.01	18,789	60.29

Non-Domestic	Total regulated emissions kgCO2/m^2/annum)	Cumulative CO2 savings (tCO2/annum)	Accumulative Percentage Savings
Baseline*	13.25	2660	-
After Lean Measures	9.87	1980	25.51
After Clean Measures	9.87	1980	25.51
After Green Measures	3.99	800	69.89

Domestic	Total regulated emissions kgCO2/m^2/annum)	Cumulative CO2 savings (tCO2/annum)	Accumulative Percentage Savings (%)
Baseline*	19.51	38,911	-
After Lean Measures	12.02	23,973	38.39
After Clean Measures	12.02	23,973	0%
After Green Measures	9.02	17,989	53.77

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GLA's Energy Hierarchy – Regulated Carbon Emissions

As demonstrated in Figure 5, the proposed will reduce carbon emissions by 33.18% from the fabric energy efficiency measures described in the 'Be Lean' section and will reduce total carbon emissions by 60.39% over Building Regulations, using SAP 10.2 carbon factors.

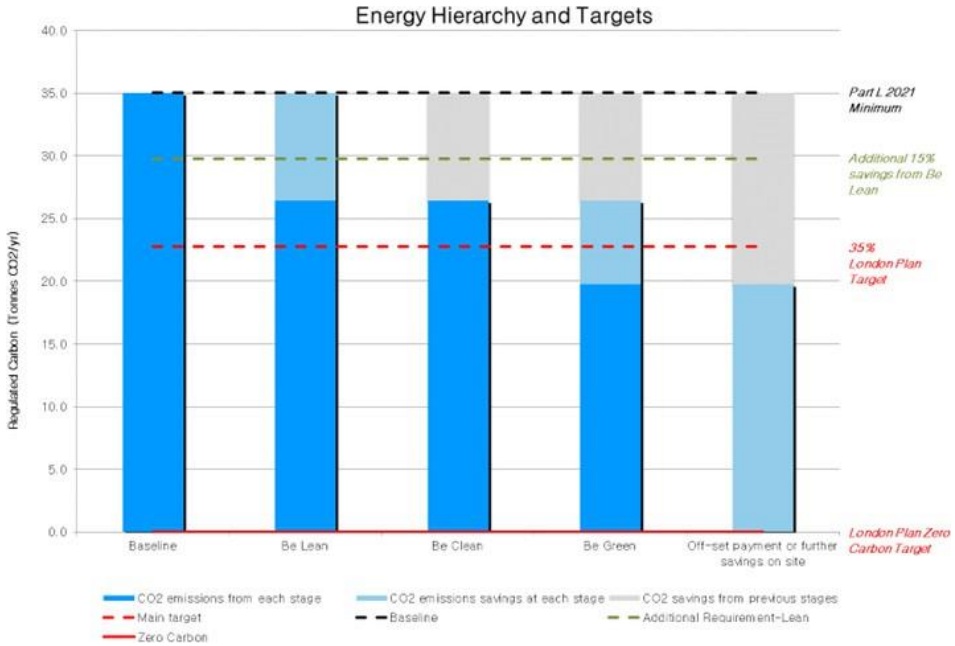

Figure 5: The performance of the scheme in relation to Building Regulations and the Energy Hierarchy. Carbon dioxide emission factors for SAP 10.2 have been used for the calculations.

Energy Efficiency Strategies

Energy efficiency measures that will be applied to 9-12 New College Parade include:

- High insulation standards to reduce transfer of heat through the building fabric.
- Waste-water heat recovery to all showers (residential and non-domestic areas).
- Use of a communal air source heat pump system with a COP of 3.50 will provide heating for the whole development and hot water to the commercial units.
- Gas boiler to provide water to the domestic units
- An immersion electric heater will provide less than 20% of the hot water demand.
- 63PV panels with a total peak output of 25.2 kWp (400W per panel) will be located on the available roof.
- Envelope air tightness to reduce unnecessary air infiltration.
- Daylighting and well-planned floor layouts to reduce the need for artificial lighting; and
- High efficacy lighting of 80 lumens per watt for residential and 130 lumens per watt for the non-domestic areas have been specified for the scheme.

Thermal Comfort and Overheating Risk

To minimise energy loss, the building fabric performance will be designed to achieve a balance between retaining heat during winter and allowing the building to dissipate heat during the summer months. Further measures to reduce overheating and the need for cooling include:

- Energy efficient lighting and appliances have been recommended to reduce internal heat gains.
- The building fabric will be insulated over and above the standards set out by Building Regulations and reduced solar gains from a glazing solar factor of 0.4 for the non-domestic and 0.60 for the domestic part will help to keep heat out of the building.
- Reduced air permeability rate and maximised insulation levels.
- Mechanical ventilation with heat recovery and summer bypass to provide fresh air and purging of heat.
- Passive ventilation measures will include openable windows.

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Adaption to Climate Change

Climate Change Mitigation

The proposed development will utilise a communal air source heat pump, PV panels, waste-water heat recovery and mechanical ventilation with heat recovery. Passive design measures, including openable windows and night-time cooling, will be integrated into the design of the development. Mechanical ventilation using fans will remove heat from the building during summer months.

Flood Risk and Sustainable Drainage

9-12 New College Parade is located within Flood Zone 1 of the Environment Agency's Flood Map for Planning, as shown in Figure 6. This is defined as an area with little or no risk to flooding where the annual probability of river, tidal and coastal flooding (with defences where they exist) is <0.1% i.e. less than 1 in 1,000 years.

Since the site is located in Flood Zone 1 and is less than one hectare, a Flood Risk Assessment is not required according to Policy SI12 - Flood Risk Management and Policy CC3: Water and Flooding.

Flood Map

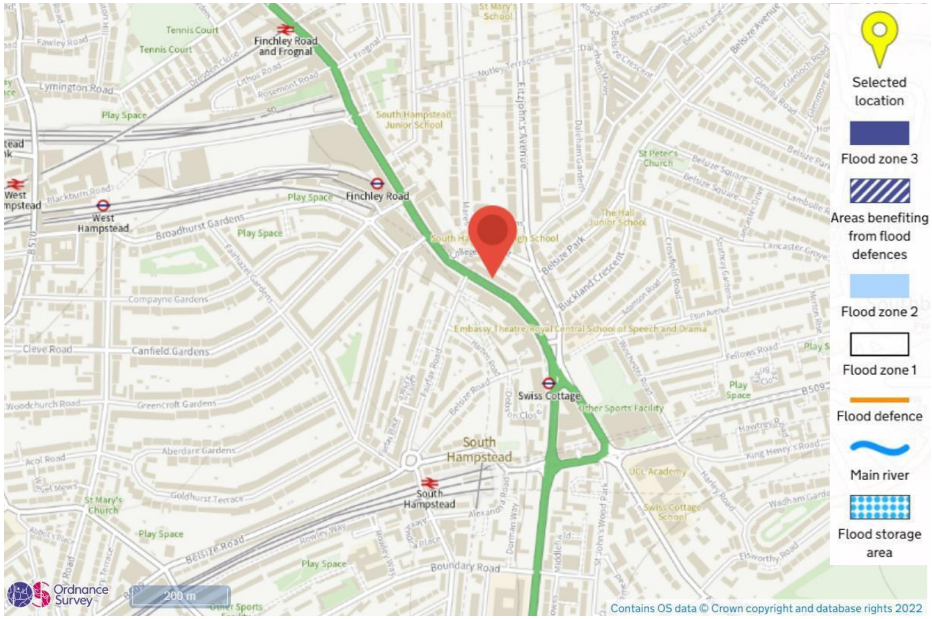

Figure 6: Flood map showing the approximate location of the development within Flood Zone 1.

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Waste

A Waste Management Plan has been produced by Caneparo Associates for the scheme as required by Policy CC5: Waste.

Construction Waste Management

Resource efficiency will be promoted through effective and appropriate management of demolition and construction site waste.

In line with the waste hierarchy, during the construction phase, the approach will be the following:

- Use reclaimed materials;
- Use materials with higher levels of recycled content; and,
- Use new materials.

For any demolition, the following approach will be adopted:

- Prioritise the on-site reuse of demolition materials;
- Adopt on site recycling and, where required, use off site recycling; and,
- The least preferred option – disposal to landfill.

A site waste management plan will be developed which adopts best practice benchmarks for resource efficiency, details procedures and commitments to minimise non-hazardous and hazardous waste at the design stage and monitors/measures waste production on site. The plan will apply to the location of the building.

The site waste management plan will also include procedures and commitments to sort and divert waste from landfill through the following:

- Re-use on site;
- Salvage/ reclaim for re-use off-site;
- Return to supplier via a 'take-back' scheme;
- Recovery and recycling using an approved waste management contractor; and
- Compost.

Operational Waste

The refuse store provides safe and convenient access to the residents, hotel and retail developments and is located on the ground floor. The separate store areas will be provided for each of the developments, accommodating general refuse, mixed recycling and food waste disposal in accordance with Policy CC5: Waste.

Camden Council provides fortnightly collection for domestic refuse waste and a weekly collection service for recycling, which is sorted post-collection. In addition, the neighbourhood provides a weekly collection for food waste.

All households in the neighbourhood have access to convenient and comprehensive recycling facilities at a number of community centres and on-street recycling points on high streets and around transport hubs. The Regis Road Recycling and Reuse Centre accepts a wide range of items not covered by the regular collection service.

A collection service for bulky domestic waste is also available in the area, which can be booked for a collection fee as required.

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Construction Management

Construction Environmental Management

Environmental impacts of the construction works will be mitigated as far as possible. This will include the incorporation of the following:

- Contractor following environmental management system processes (under ISO14001), including the development of a construction environmental management plan (CEMP) specific to the sites;
- Training and site induction of all site operatives;
- Monitoring of energy, water and transport to and from site during construction;
- Management of waste on site;
- Following best practice pollution guidance from the Environment Agency;
- Ensuring all site timber is responsibly sourced in line with the UK Government's Timber Procurement Policy;
- Minimising vehicle emissions through the use of catalytic converters and the regular maintenance of vehicle engines;
- Damping down of brick walls etc. during any building demolition;
- Regularly inspecting and wet suppressing materials/soil stockpiles where necessary (including wind shielding or completely enclosing, storing away from site boundaries, and restricted height of stockpiles);
- Appropriate orientating of material stockpiles;
- Providing wheel washing and wet suppressing during the loading of wagons vehicles;
- Covering vehicles carrying dry soil and other wastes;
- Shielding of dust-generating construction activities;
- Providing suitable site hoarding;
- Restricting vehicle speeds on haul roads and other unsurfaced areas of the site; and,
- Inspecting unsurfaced haulage routes, and wet suppressing should this be necessary (in times of prolonged dry periods).

Considerate Constructors

The scheme will adopt the principles of the Considerate Constructors Scheme (CCS). The CCS scheme aims to recognise and encourage construction sites that are managed in an environmentally and socially considerate, responsible and accountable manner.

Water Efficiency

Water Conservation

The development proposal recognises the need to create a scheme that is efficient and adaptable to future climatic scenarios.

The design team is committed to achieve a significant reduction in internal water use for the development over typical performance, equating to a water consumption target of 110 litres per person per day under the optional national technical standard.

Water consumption will be reduced through the use of water efficient components for all specified domestic water-consuming components (including low-flow showerheads and taps, dual flush toilets and low water consuming washing machines and dishwashers), water meters for each dwelling, water recycling systems where appropriate and flow control devices that regulate the supply of water to each facility according to demand.

A permanent automated water leak detection system that alerts the building occupants to a major water leak on the mains water supply within the building and between the building and the utilities water meter will be installed.

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Transport and Connectivity

A Transport Assessment and Travel Plan have been produced by Caneparo Associates for the scheme as required by Policy T3.

Public Transport

The development has a PTAL rating of 6a which represents very good connectivity as the network of public transport routes accessible from the site is extensive.

There are three different bus stops located within 300m of the site serving 8 different bus routes. The closest bus stop, Finchley Road Station, can be reached in 2.5 minutes by foot and is served by bus routes C11, 113, 82, 13, 268 and 187.

Additionally, Finchley Road & Frognal Station is within 700m and is served by London Overground to Richmond and Stratford stations. Finchley Road London Underground Station is located within 250m and served by the Jubilee and Metropolitan lines. South Hampstead Railway Station (within 750m) is served by London Overground with trains to Euston and Watford Junction stations.

Cycling and Car Provision

Cycle parking will be provided in accordance with the London Plan, Policy T5: Cycling and Policy T1: Prioritising walking, cycling and public transport. Secure and covered cycle spaces are proposed as indicated on the ground floor plan for the retail units and on the basement floor plan for the residential and hotel developments.

No dedicated parking will be provided for residents in line with the London Plan recommendations and Policy T2: Parking and car-free development, although there are 'loading only' parking spaces available along New College Parade, including in front of the proposed development.

Accessibility and Security

Creating a secure but fully accessible development is a key part of the proposed development. To ensure this is achieved, the design team will adopt, where feasible, the key principles of "Secured by Design" within all elements of the scheme. An Architectural Liaison Officer (ALO) or a Crime Prevention Design Advisor (CPDA) will be consulted at an early stage to provide a set of bespoke security recommendations for the development. The recommendations of the CPDA will be implemented within the development's design and layout.

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Materials

Materials and Waste Introduction

Sustainable material sourcing and waste management will be considered throughout the life of the building to ensure the scheme's environmental footprint is minimised as far as possible. The scheme will also ensure low embodied carbon is employed throughout the procurement, transport and construction of building materials, together with end of life emissions.

Materials Selection and Sourcing

The design team has confirmed that efforts will be made to reuse materials where feasible and that where required, new materials will be responsibly sourced. New construction materials will be selected, where feasible, with a low environmental impact. In addition, the project will aim for new materials to come from a recycled or reused source, including a high-recycled content in steel. Minimum standards apply to new timber, which must be sourced in accordance with the UK Government's Timber Procurement Policy.

In addition, all timber will be FSC/ PEFC certified, all concrete will be BES 6001 certified and any other material will be ISO 14001 certified for both key processes and supply chain/ extraction processes where feasible to do so.

The Green Guide for Specification is a reference tool, providing guidance on the relative environmental impacts for a range of different building elemental specifications, based on Life Cycle Assessment and the Environmental Profile Methodology. The design team will reference the Green Guide to Specification to help specify materials with a low environmental impact, where feasible. The design will incorporate at least 5 build-up elements that will be A-C rated on the Green Guide.

Insulation specifications will eliminate hydrochlorofluorocarbons (HCFCs) and ozone depleting materials, wherever possible. All insulation specified will have a Global Warming Potential (GWP) of less than 5 and be responsibly sourced to have a low embodied impact.

Embodied Carbon Analysis

The development will utilise a number of opportunities to cut embodied carbon, as follows:

- A materials efficiency strategy will be followed throughout the design, procurement and construction stages of the development, to ensure the scheme produces less waste on site. For example, adjustment of some sizes will be made to minimise offcuts of materials, and some bespoke materials will be developed off-site;
- Materials will be procured from the local area where possible, to reduce carbon through transportation;
- Materials and products with a higher recycled content will be preferentially procured where feasible, as these have a low embodied carbon; and,
- Consideration has been made to use timber as a low embodied carbon alternative to steel and concrete where possible.

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Health and Wellbeing

Occupant Wellbeing
The development has been designed to ensure the wellbeing of occupants in terms of levels of fresh air, thermal comfort and reduction of overheating, access to natural light, good lighting levels internally and externally, acoustic performance and access to safe drinking water.

The building services strategy has been carefully considered in order to balance the need for energy-smart, low carbon technologies with the need for adequate and controllable ventilation, heating and cooling.

Internal Air Quality
The design team will specify only low volatile organic compounds (VOC) finishing products, including sealants and paints. All composite wood products will contain no added urea formaldehyde.

External Air Quality
An Air Quality Assessment report was produced by Eight Versa in September 2022. The development site is located in an Air Quality Management Area (AQMA), which has been declared due to continued exceedances of National Air Quality Objectives (NAQOs) for NO_2 and 24-hour mean exceedance for PM_{10}. Even though the NAQOs for PM_{10} and $PM_{2.5}$ are currently being met, it remains a pollutant of concern. The site is located in a NO_2 Focus Area.

Construction Impacts
The unmitigated risk to local sensitive receptors from emissions of dust and pollution from construction is deemed to be low. With the mitigation measures in place, the residual effects arising from the construction phase of the proposed development would be deemed 'not significant'.

Air Quality Neutral (AQN)
The scheme has been assessed for both the impacts of transport and building operation against the AQN guidance and they were found to meet the requirements for AQN.

Daylight
The design has been developed to allow the use of daylight within the dwelling to be maximised as far as practical, in accordance with Policy A1: Managing the impact of development

Point 2 Surveyors Ltd undertook a daylight and sunlight impact assessment report to evaluate the potential impact of the proposed development on the daylight and sunlight received by the neighbouring buildings.

For two of the assessed buildings its was demonstrated that all windows serving habitable rooms room met the recommendations for the Vertical Sky Component and the No-sky Line. Of the remaining four properties assessed a total of 71.3% of the assessed windows met the recommendations for the Vertical Sky Component. The remaining 28.3% experienced varying levels of impact with their proportional reductions but overall, it was found that the majority of rooms will maintain good daylight distribution. Out of the eligible living rooms only 28.6% were found to experience a reduction in summer and winter sunlight. It can be concluded that the proposed development will have a 'minor' impact on the daylight and sunlight received by the neighbouring amenities and the results are deemed acceptable.

Acoustic Performance
Clement Acoustics was commissioned through Eight Versa in January 2021 to undertake a noise impact assessment to demonstrate compliance to Policy A4: Noise and vibration and Policy D14.

It was observed that the existing noise environment is expected to be dominated by road traffic noise from Finchley Road and in particular noise from cars as well as from the nearby London Underground Station and tracks from trains. The following recommendations were made:

- Glazing and ventilation mitigation measures have been specified to achieve the BS 8233:2014 internal ambient noise level criteria and WHO recommended criteria to show compliance with to Policy A4: Noise and vibration and Policy D14.

The following recommendations were made for the Hotel noise management plan:

- It should be ensured that guests do not need to queue outdoors, particularly during evening and night-time hours,
- There should be no audible amplified music outside the hotel façade due to hotel activities(e.g. background music in lobby areas),
- Behaviour of guests outside the hotel should be monitored to ensure there is no unnecessary or excessive noise,
- Deliveries to the hotel or waste collections should be scheduled to fall with typical working hours only.

Inclusive Design
The guidance in the Approved Document M (March 2016) will be incorporated to achieve an inclusive built environment that enables users to maximise their individual abilities and enjoy a safe and independent participation. All units have been designed to demonstrate compliance to Part M4(1): Visitable dwellings and Part M4(2): Accessible and adaptable dwellin

Sustainability Statement
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Land Use and Ecology

Protection of Biodiversity
The design team is committed to protecting biodiversity on site and will implement the following measures:

- Confirm that all relevant UK and EU legislation relating to protection and enhancement of ecology has been complied with during the design and construction process;
- Implement working methods in line with best practice to manage dust and water runoff; and,
- During the construction phase a Biodiversity Champion will be appointed to monitor and limit environmentally detrimental activities. They will also train the contractors on the project to raise their awareness of environmental impacts during construction.

Ecological Enhancements
The design team is also committed to enhance biodiversity on-site according to London Plan policies.

The proposed development will aim to incur no negative change in ecological value and a suitably qualified ecologist will provide early design stage advice on:

- How to improve the ecological value of the site;
- Implementation of bird and bat boxes;
- Confirm that all relevant UK and EU legislation relating to protection and enhancement of ecology has been complied with during the design and construction process; and,
- Produce a landscape and habitat management plan to cover at least the first five years after project completion, if applicable.

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Contents:

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Executive Summary

Introduction

Eight Versa, as registered BREEAM assessors, have carried out an assessment of the proposed new development at 9-12 New College Parade, London. This assessment is under BREEAM 2018 New Construction V6 methodology.

This summary is a pre-assessment of the development and details the anticipated score following the information provided by the design team at a meeting held 16th September 2022 and subsequent discussions.

Project summary

The planning application consists of a new six storey, plus basement, mixed use development located of New College Parade in the London Borough of Camden. The scope of the building is fully fitted.

Planning requirement for the new build development is as follows:

- Excellent BREEAM rating

Score summary

The site reviewed currently targets a score of 73%, which equates to an Excellent rating.

The action plan on the following pages details the measures required to increase the score to a potential 77.9%, which equates to an Excellent rating.

Eight Versa recommends a safety margin of at least 3-5% to safeguard any rating at formal assessment.

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Introduction

The BREEAM standard

BREEAM (Building Research Establishment's Environmental Assessment Method) is the world's first sustainability rating scheme for the built environment. It sets the standard for best practice in sustainable design and has become the de facto measure used to describe a building's environmental performance.

To date BREEAM has been used to certify over 560,000 building assessments across the building life cycle and is being applied in over 80 countries.

BREEAM is developed, operated and maintained by BRE Global Ltd and the operation and direction of the method is overseen by an independent Sustainability Board, representing a wide cross-section of construction industry stakeholders. Further information about BREEAM, including copies of the BREEAM standards, can be found at www.breeam.org.

Aims of BREEAM

- To mitigate the impacts of buildings on the environment
- To enable buildings to be recognised according to their environmental benefits.
- To provide a credible, environmental label for buildings.
- To stimulate demand for sustainable buildings.

BREEAM New Construction

BREEAM New Construction is a performance-based assessment method and certification scheme for new buildings.

The primary aim of BREEAM New Construction is to mitigate the life cycle impacts of new buildings on the environment in a robust and cost-effective manner. It attempts to quantify and reduce the environmental burdens of buildings by rewarding those designs that take positive steps to minimise their environmental impacts.

Projects are assessed at design and post-construction stages using a system of environmental issues grouped within the following sections:

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

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Process of the assessment

Under BREEAM New Construction 2018, assessments take place over two phases:

- Design Stage (DS): This is based on the final design for the development and the intentions of the design team. Submission before the completion of RIBA Stage 4.
- Post Construction Stage (PCS): This is based on the built development and requires the BREEAM assessor to carry out a site visit. Submission at RIBA Stage 6.

An interim certificate will be provided following submission of the Design Stage Assessment, with final certification being awarded following the completion of the PCS Assessment.

Ratings

The assessment process results in a rating on a scale of PASS, GOOD, VERY GOOD, EXCELLENT and OUTSTANDING. The rating bands for each are as follows:

Rating	Minimum score required	Performance equivalent to (% of UK new non-domestic buildings)
Pass (P)	30%	<75% (standard good practice)
Good (G)	45%	<50% (intermediate good practice)
Very Good (VG)	55%	<25% (advanced good practice)
Excellent (E)	70%	<10% (best practice)
Outstanding (O)	85%	<1% (innovator)

Mandatory credits

Some credits, or criteria within credits, are mandatory to achieve certain ratings:

BREEAM Issue	P	G	VG	E	O
Man 03: Responsible construction practices	-	-	-	1 credit	2 credits
Man 04: Commissioning & handover	-	-	1 credit[1]	1 credit	1 credit
Man 04: Commissioning & handover	-	-	Criterion 11[2]	Criterion 11	Criterion 11
Man 05: Aftercare	-	-	-	1 credit[3]	1 credit
Ene 01: Reduction of CO2 emissions	-	-	-	4 credits	6 credits
Ene 02: Energy monitoring	-	-	1 credit	1 credit	1 credit
Wat 01: Water consumption	-	1 credit	1 credit	1 credit	2 credits
Wat 02: Water monitoring	-	Criterion 1[4]	Criterion 1	Criterion 1	Criterion 1
Mat 03: Responsible sourcing	Criterion 1[5]	Criterion 1	Criterion 1	Criterion 1	Criterion 1
Wst 01: Construction waste	-	-	-	-	1 credit
Wst 03: Operational waste	-	-	-	1 credit	1 credit

[1] Commissioning – testing schedule and responsibilities must be produced for the site.
[2] A Building User Guide must be developed prior to handover, for distribution to the building occupiers and premises managers.
[3] Complete required commissioning activities over a minimum 12-month period once the building has become occupied.
[4] A water meter must be specified on the mains water supply to each building
[5] All timber and timer-based products used on the project must be legally harvested and traded.
Full details for each credit follow later in this document.

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Early-stage considerations

There are a number of key actions that need to be undertaken at RIBA Stages 1, 2 and 4 of the design to achieve BREEAM credits, as required for the project. See summary below. Items highlighted in grey are not being targeted.

Credit	RIBA Stage	Requirement	Responsibility
Man 01 Project delivery planning	Stage 2	Project stakeholders must meet to define their roles, responsibilities and contributions for each key phase of the project by the end of RIBA Stage 2.	Project Manager, key design team members
Man 01 BREEAM AP (Concept Design)	Stage 1 Stage 2	Appoint a sustainability champion (BREEAM AP) Agree BREEAM performance target.	Client / Project Manager
Man 02 Elemental level Life Cycle Costing (LCC) options appraisal	Stage 2	An Elemental level Life Cycle Costing analysis must be carried out before the end of RIBA Stage 2.	Specialist Consultant
Man 02 Component level Life Cycle Costing (LCC) options appraisal	Stage 4	A Component level Life Cycle Costing analysis must be carried out before the end of RIBA Stage 4.	Specialist Consultant
Ene 04 Passive Design Analysis	Stage 2	A Passive Design Analysis must be carried out at the early design stages to identify opportunities to implement passive design measures within the building design	Energy Specialist / M&E Consultant
Ene 04 Low Zero Carbon Feasibility Study	Stage 2	A feasibility study must be carried out before the end of RIBA Stage 2 to establish the most appropriate local low or zero carbon (LZC) energy source(s) for the building	Energy Specialist
Tra 01 Transport Assessment and Travel Plan	Stage 2	A site-specific transport assessment and draft travel plan to assess existing local transport and identify improvements to make it more sustainable.	Transport Consultant
Mat 01 Environmental impacts from construction products - Building life cycle assessment (LCA)	Stage 4	Technical design stage: The options appraisal summary document must be carried out before the end of RIBA Stage 4.	Life Cycle Analysis Consultant
Mat 03 Enabling sustainable procurement	Stage 2	A sustainable procurement plan must be developed to guide specification to sustainable construction products.	Architect / client
Mat 06 Materials Efficiency	Stage 2	Materials efficiency must be investigated, and considerations recorded at RIBA stage 2, and each stage thereafter.	Specialist Consultant / Architect / M&E
Wst 01 Pre-demolition audit	Stage 2	Audit of the existing building to maximise recovery of materials before the end of Concept Design.	Demolition contractor
Wst 05 Climate Change Adaptation	Stage 2	A climate change adaptation strategy appraisal must be carried out for structural and fabric resilience before the end of the Concept Design stage.	Specialist Consultant / M&E Consultant

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Credit	RIBA Stage	Requirement	Responsibility
Wst 06 Design for disassembly and adaptability	Stage 2	A building-specific functional adaptation strategy study must be undertaken by the Concept Design, which includes recommendations to facilitate future adaptation.	Client / Design Team
LE02 Identifying & understanding the risks and opportunities for the project	Stage 1 - 2	A Suitably Qualified Ecologist (SQE) is appointed at a project stage that ensures early involvement in site configuration and, where necessary, can influence strategic planning decisions	Client / Project Manager / Ecologist
LE03 Managing negative impacts on ecology	Stage 2	Roles and responsibilities for managing negative impacts on ecology are clearly defined at an early enough stage to influence the Preparation and Brief or Concept Design	Client / Project Manager / Ecologist

Extra appointment considerations

It should also be considered that there are a number of external consultant reports that will be required to meet some of the BREEAM requirements for the credits that have been targeted.

These include the following appointments / reports:

- Energy Consultant: Reduction of energy Use and Carbon Emissions (Ene 01), Low Carbon Design (Ene 04) and Thermal Comfort (Hea 04)
- Transport Consultant: (Tra 01): Travel Plan
- Ecologist: Minimising impact on existing site ecology, enhancing site ecology and long term impact on biodiversity (LE 03, LE 04 and LE 05)
- Flood Risk Consultant: Surface Water run off (Pol 03)

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Score Breakdown

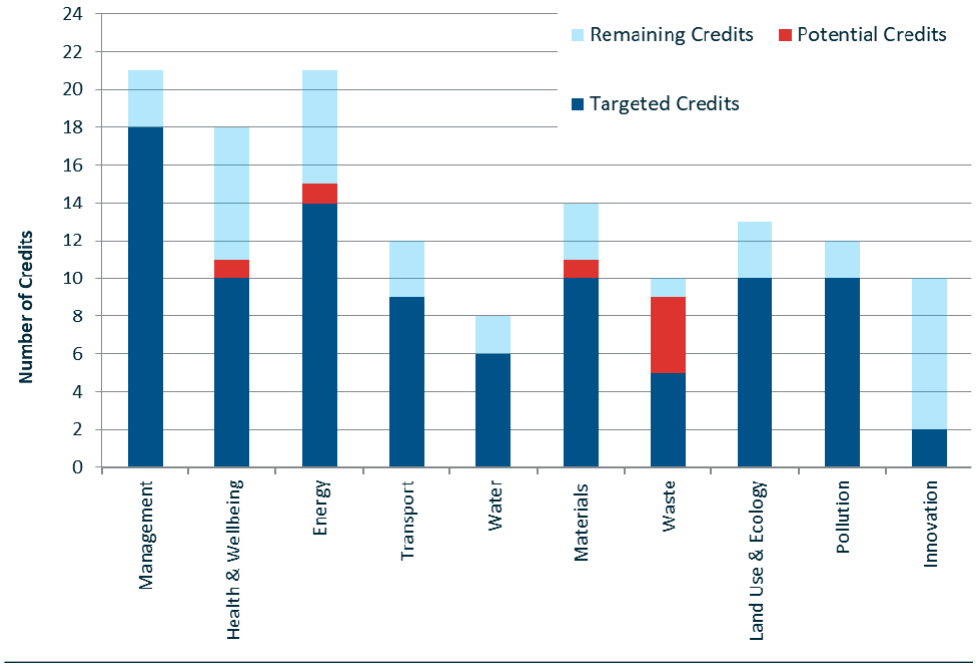
Rating summary

The following summary represents the scheme's preliminary score based on the assumptions in the following pages.

Credit Categories	% Targeted	Weighting	Score
Management	86%	11.0%	9.42%
Health and Wellbeing	56%	14.0%	7.77%
Energy	67%	16.0%	10.66%
Transport	75%	10.0%	7.50%
Water	75%	7.0%	5.25%
Materials	71%	15.0%	10.71%
Waste	50%	6.0%	3.00%
Land Use and Ecology	77%	13.0%	10.00%
Pollution	83%	8.0%	6.66%
Innovation	20%	10.0%	2.00%
Total Score			73%
Rating			Excellent

Graphics breakdown

The graph below shows the credits currently targeted (dark blue), action credits (red) and remaining credits in each BREEAM section (light blue).



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Management

Man 01: Project brief and design 4 of 4

Project delivery planning (one credit)
The design team has met to identify roles and responsibilities, as well as contributions for each key phase of the project.

Stakeholder consultation (one credit)
The design team has undertaken consultation with the appropriate stakeholders in accordance with BREEAM requirements.

BREEAM AP (two credits)
The design team has confirmed that a BREEAM Accredited Professional (AP) will be involved to monitor and report progress against the established BREEAM targets by attending key project team meetings during all stages of the design and construction. The BREEAM AP attended the initial design team meeting and will continue to attend key meetings, identifying risks and opportunities to achieving each target and provide feedback to the project team.

In total, four out of four credits are currently targeted for this issue.

Man 02: Life cycle cost and service life planning 1 of 4

Elemental life cycle costing (two credits)
An elemental life cycle cost analysis will not be carried out at RIBA stage 2 in accordance with PD 156865-2008.

Component level life cycle options appraisal (one credit)
A component level LCC options appraisal is not being considered and will therefore not be carried out by RIBA stage 4 to minimise life cycle costs and maximise value.

Capital cost reporting (one credit)
The design team has committed to report the capital cost for the building in pounds per square metre (£k/m2), via the BREEAM Assessment Scoring and Reporting tool in line with BREEAM requirements.

In total, one out of four credits are currently targeted for this issue.

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Man 03: Responsible construction practices exemplary level credit. **6 of 6+1**

Mandatory requirements
At least one credit must be awarded under responsible construction management to achieve an Excellent rating.

Timber (prerequisite)
The contractor will be required to ensure all site timber, such as hoarding, will be legally harvested and traded.

Environmental management (one credit)
The design team will appoint a principal contractor who operates an Environmental Management System for their main operations, certified under ISO14001/ EMAS or an equivalent standard.

BREEAM Accredited Professional (AP) (prerequisite)
The client and the contractor will formally agree performance targets. A BREEAM AP has been involved in the project at an appropriate time and level.

BREEAM AP (site) (one credit)
The BREEAM AP will ensure ongoing compliance with the relevant sustainability performance on site once the contractor is appointed. The BREEAM AP will be involved with the project team undertaking regular spot checks to ensure risks are minimised and monitoring construction progress.

Responsible construction management (two credits + 1 exemplary level credit)
The contractor will be required to complete all the BREEAM required items in the table in Appendix A of this report in order to achieve two credits plus the exemplary level credit.

Monitoring of construction-site impacts (two credits)
The design team has confirmed that the contractor will be required to ensure an individual is responsible for monitoring, recording and reporting the following:

- Energy (kWh) consumption for the site as a result of construction plant, equipment and site accommodation. Total carbon dioxide emissions must be reported.
- Water (m^3) consumption arising from the use of construction plant, equipment and site accommodation.
- Transport resulting from delivery of construction materials to site and removal of construction waste from site:
    - Transportation of materials from the point of supply to the building site:
        i. Materials used in major building elements; and,
        ii. Ground works and landscaping materials.
    - Transportation of construction waste from the construction gate to waste disposal processing or recovery centre gate.
    - The following information will be recorded:
        i. Litres of fuel used;
        ii. Distance travelled (km); and,
        iii. Carbon dioxide emissions ($kgCO_2$ eq).

In total, six of six credits are currently targeted for this issue plus the exemplary level credit.

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Man 04: Commissioning and handover 4 of 4

Mandatory requirements
A Building User Guide must be produced in order to achieve an Excellent rating (even if this credit is not targeted).

Commissioning (two credits)
A member of the design team will be appointed to monitor commissioning in line with best practice (CIBSE, BSRIA and Current Building Regulations), with a specialist commissioning agent appointed for any complex systems.

Testing and inspecting building fabric (one credit)
The design team has confirmed that, although an air tightness test will be carried out as standard, a thermography survey is also expected to be undertaken.

Handover (one credit)
The production of a technical manual and a non-technical building user guide in line with the BREEAM requirements is planned. In addition, a training schedule will be prepared for building occupiers / facilities managers to aid handover and correct use of the building and its services upon occupation.

In total, four of four credits are currently targeted for this issue.

Man 05: Aftercare 3 of 3

Mandatory requirements
Seasonal commissioning must be carried out in order to achieve an Excellent rating.

Aftercare support (one credit)
There will be operational infrastructure and resources in place to provide aftercare support to the building occupier and to coordinate the collection and monitoring of energy and water consumption data for a minimum of 12 months, once the building is occupied.

Commissioning implementation (one credit)
Seasonal commissioning activities will be completed over a minimum 12-month period, once the building becomes substantially occupied.

Post occupancy evaluation (one credit)
The client or building occupier will carry out a post occupancy evaluation (POE) exercise one year after initial building occupation.

In total, three of three credits are currently targeted for this issue.

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Health and Wellbeing

Hea 01: Visual comfort **4 of 4**

Control of glare from sunlight (one credit)
The design team has confirmed blinds will be utilised on any windows to areas at risk of glare.

Daylighting (one credit)
It has been confirmed that daylight modelling will be carried out that in line with BREEAM requirements.

View out (one credit)
The design team has confirmed that all workstations are to be 8m from a wall that has a window or permanent opening providing an adequate view out for over 95% of the floor area. Windows or openings will comprise at least 20% of the surrounding wall area.

Internal and external lighting levels, zoning and controls (one credit)
The design team has confirmed the following will be met for the scheme:

- All fluorescent and compact fluorescent lamps will be fitted with high frequency ballasts;
- Internal lighting will provide illuminance levels in accordance with the SLL Code of Lighting 2012 (and any other relevant industry standard);
- For areas where computer screens are regularly used the lighting design will comply with the appropriate sections of CIBSE Lighting Guide 7;
- All external lighting will provide illuminance levels that enable users to perform outdoor visual tasks efficiently and accurately;
- Internal lighting will be appropriately zoned to allow for occupant control within relevant building areas in accordance with the BREEAM criteria;
- External lighting will be specified in accordance with BS 5489-1:2013 Lighting of roads and public amenity areas and BS EN 12464-2:2014 Light and lighting – Lighting of workplaces – Part 2: Outdoor workplaces);

In total, four of four credits are currently targeted for this issue.

Hea 02: Indoor air quality **0 of 4**

Indoor air quality plan (prerequisite)
A formalised Indoor Air Quality plan will not be produced for the development and implemented to facilitate a process that leads to design, specification and installation decisions and actions that minimise indoor air pollution during occupation of the building.

Ventilation (one credit)
The design team will review the ventilation strategy for compliance against the BREEAM requirements. The credit is not currently targeted.

Emissions from construction products (two credits)
The design team has confirmed that none of the product types listed in the BREEAM 2018 manual table 5.11 will meet the emission limits, testing requirements and any additional requirements in line with requirements. Zero out of two credits are targeted.

Post-construction indoor air quality measurement (one credit)
The design team is not currently targeting air quality testing to measure VOC and formaldehyde concentration levels at post-construction stage.

In total, zero of four credits are currently targeted for this issue.

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Hea 04: Thermal comfort 3 of 3

Thermal modelling (one credit)
Thermal modelling, in line with CIBSE AM11, will be undertaken for the development using full dynamic thermal analysis software. Summer and winter operative temperature ranges in occupied spaces will be in accordance with the criteria set out in CIBSE Guide A Environmental design.

Design for future thermal comfort (one credit)
The design team has confirmed that the thermal modelling will include an allowance for a projected climate change environment.

Thermal zoning and controls (one credit)
The thermal modelling analysis will inform the thermal comfort strategy. The heating and cooling are to be zoned and controlled appropriately for the building type and its users' requirements.

In total, three of three credits are currently targeted for this issue.

Hea 05: Acoustic performance 3 of 4

The design team has confirmed that acoustic testing will take place to confirm compliance with the acoustic principles of:

- Sound insulation. One of two credits are targeted.
- Indoor ambient noise level
- Room acoustics

The above will be confirmed via a programme of pre-completion testing, carried out by a compliant test body.

In total, three of four credits are currently targeted for this issue.

Hea 06: Security 0 of 1

Security of site and building (one credit)
The design team has not targeted this credit for a suitably qualified security consultant to be consulted during the planning process to produce a Security Needs Assessment.

Zero of one credit is currently targeted for this issue.

Hea 07: Safe and healthy surroundings 0 of 2

Safe access (one credit)
The design team have confirmed there will not be separate routes/entrance points for cyclists, pedestrians and deliveries navigating around the building.

Outside space (one credit)
The design team has confirmed the provision of an outside amenity area for building users will not be provided.

In total, zero out of two credits are currently targeted for this issue.

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Energy

Ene 01: Reduction of CO_2 emissions 8 of 13

Mandatory requirements
At least four credits must be achieved in order to secure an Excellent rating.

Energy performance (nine credits)
An energy assessment will be undertaken at design stage, based on Part L 2021 standards. Based on the building services and fabric specified, it is assumed that eight of the available nine credits under this issue will be achieved.

Please note that the BREEAM guidance requests a copy of the Building Regulations Output (BRUKL Output Document) based on the design stage and an as-built copy of the document for the post construction stage.

Prediction of operational energy consumption (four credits)
It is confirmed that relevant members of the design team will not hold a design workshop focusing on operational energy performance.

Eight of thirteen credits are targeted for this issue.

Ene 02: Energy monitoring 2 of 2

Mandatory requirements
The minimum requirement for sub-metering of end-use categories must be met in order to achieve an Excellent rating.

Sub-metering of end-use categories (one credit)
Pulsed sub-meters will be provided to ensure the following are met:

1. Energy metering systems are installed that enable at least 90% of the estimated annual energy consumption of each fuel to be assigned to the various end-use categories of energy consuming systems.
2. The systems in smaller buildings are metered either with an energy monitoring and management system or with separate accessible energy sub-meters with pulsed or other open protocol communication outputs, to enable future connection to an energy monitoring and management system.
3. The end energy consuming uses are identifiable to the building users, for example through labelling or data outputs.

Sub-metering of high energy load & tenancy areas (one credit)
The design team has confirmed that there will be sub-metering throughout the building.

Two of two credit is currently targeted for this issue.

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Ene 03: External lighting 1 of 1

The design team has confirmed that any external lighting will have an average initial luminous efficacy of greater than 70 luminaire lumens per circuit Watt. All external light fittings will be automatically controlled to prevent operation during daylight hours.

One of one credit is currently targeted for this issue.

Ene 04: Low carbon design 1 of 3

Passive design analysis (one credit)
The potential for passive design analysis will be explored, but the credit is not currently targeted.

Free cooling (one credit)
The design team has confirmed that the credit for free cooling will not be targeted as mechanical cooling is proposed.

Low and zero carbon technologies (one credit)
A feasibility study will be carried out by an independent energy specialist to establish the most appropriate local low or zero carbon energy source for the development, and an LZC technology will be specified in line with the recommendations of this report (resulting in a reduction in CO_2 emissions).

One of three credits are currently targeted for this issue.

Ene 06: Energy Efficient Transportation Features 2 of 2

Energy consumption (one credit)
The design team has confirmed that a transportation demand and usage pattern analysis for the building to determine the optimum number and size of lifts, escalators or moving walks is accordance with BS EN ISO 25745. The energy consumption will be calculated for at least two types of system and the one with the lowest energy consumption is specified.

Energy efficient features (one credit)
The design team has confirmed they will be specifying the following energy efficient features for each lift:

- A standby condition for off-peak periods.
- 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.
- Use of a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVF) control of the drive motor.

Regenerative drives are considered where these would produce an energy saving greater than the additional standby energy used to support the drives.

Two of two credits are targeted.

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Transport

Tra 01: Transport assessment and travel plan **2 of 2**

Travel plan (two credits)
The design team has confirmed that during the feasibility and design stages a travel plan will be developed based on a site-specific travel assessment or statement.

The travel plan will include proposals to increase/improve sustainable modes of transport and movement of people and goods.

Two of two credits are targeted for this issue.

Tra 02: Sustainable transport measures **7 of 10**

Transport options implementation (ten credits)
The design team has confirmed that the potential sustainable transport measures can be targeted, with the following considered for inclusion:

- Provision of cycle spaces for building users
- Provision of cyclist facilities (at least two of the following: shower spaces, locker spaces, drying spaces and changing spaces)
- Proximity to three existing amenities
- An Accessibility index (AI) >8.
- Public transport information system in a publicly accessible area which allows building users to access up to date information on the available public transport infrastructure.

Seven out of ten credits are targeted for this issue.

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Water

Wat 01: Water consumption — 3 of 5

Mandatory requirements
At least one credit is required for an Excellent rating.

Water consumption (five credits)
The design team has confirmed that they will aim for a 40% improvement in water consumption (litres/person/day) compared to BREEAM's notional baseline performance.

To achieve this, it is anticipated that specified sanitaryware will meet the following thresholds:

- WCs will have 3.75 litres effective flush volume.
- Wash hand basins will have a flow rate of no greater than 5 litres/min
- Showers will have a flow rate of no greater than 6 litres/min.
- Kitchen taps will have a flow rate of no greater than 6 litres/min
- Domestic dishwashers will have a capacity of no greater than 12 litres/cycle.
- Commercial dishwashers will have a capacity of no greater than 5 litres/rack.

Alternatively higher flush volumes and flow rates can be provided if there is a rainwater harvesting system installed in compliance with BS EN 16941-1:2018.

Three of five credits are currently targeted for this issue.

Wat 02: Water monitoring — 1 of 1

Mandatory requirements
A water meter must be specified (even if this credit is not targeted) in order to achieve an Excellent rating.

Water monitoring (one credit)
The design team has confirmed that a pulsed water meter will be installed on the mains water supply to each building.

There will be no water-consuming plant or building areas consuming 10% or more of the building's total water demand.

The available credit is currently targeted for this issue.

Wat 03: Water leak detection and prevention — 2 of 2

Leak detection (one credit)
The design team has confirmed a major leak detection system on the mains water supply within the building and between the building and the utilities water meter will be provided. The system will comply with the following:

- Permanent and automated.
- Activated when the flow of water is at a flow rate above a pre-set maximum for a pre-set period of time.
- Able to identify different flow and leakage rates.
- Programmable to suit the owner/occupiers' water consumption criteria.
- Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers.

Sanitary shut-off system (one credit)
Flow control devices that regulate the supply of water to each WC area according to demand will be installed. This will assist with minimising water leaks and wastage from worn sanitary fittings.

Two of two credits are currently targeted for this issue.

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Materials

Mat 01: Environmental impacts from construction products building life cycle assessment (LCA) exemplary level credit **7 of 7 +1**

Superstructure (six credits)
The design team has confirmed that a Life Cycle Assessment (LCA) will be carried out at key stages to demonstrate that the specification of material build-ups and their impact has been considered. The Stage 2 LCA will be uploaded to the BRE prior to planning submission.

Six out of six credits are targeted.

Substructure and hard landscaping options appraisal during concept design (all building types) (one credit)
The design team has confirmed that during Concept Design, opportunities have been identified to reduce environmental impacts. One credit currently targeted.

One credit is targeted for this issue.

Third party verification (exemplary level credit)
The design team have confirmed that the LCA will be verified by a third party company at Concept and technical design to achieve one exemplary level credit.

Mat 02: Environmental impacts for construction products Environmental Product Declarations (EPD) **1 of 1**

The contractor will be asked to source materials covered by an Environmental Product Declaration (EPD) where possible. A minimum of 15 across all material categories need to be provided.

The available credit is currently targeted for this issue.

Mat 03: Responsible sourcing of materials **1 of 4**

Mandatory requirements
The pre-requisite for this issue must be complied with (even if this issue is not targeted) in order to achieve any rating.

Pre-requisite
The design team has confirmed that all timber used on the project will be legally harvested and traded timber.

Enabling sustainable procurement (one credit)
The design team will not implement a sustainable procurement plan for this development prior to Concept Design to guide specification towards sustainable construction products.

Measuring responsible sourcing (three credits)
The design team has confirmed that, where possible, key building elements will be responsibly sourced (e.g. all timber FSC certified, and any bricks, pavers, concrete, glass, metals, plaster etc. covered by BRE Global, BES 60001 certification, or EMS certified for both the key process and supply chain extraction process). One credit is targeted.

One of four credits are targeted for this issue.

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Mat 05: Designing for durability and resilience **1 of 1**

Protecting vulnerable parts of the building from damage
Materials and features will be specified to protect vulnerable parts of both the internal and external areas of the building.

Protecting exposed parts of the building from material degradation
The relevant building elements incorporate appropriate design and specification measures to limit material degradation due to environmental factors. The elements will either achieve an appropriate quality or durability standard or a resilience assessment will be carried out on the element.

The available credit is targeted for this issue.

Mat 06: Material efficiency **0 of 1**

The design team has not confirmed if opportunities will be identified, and appropriate measures investigated and implemented, to optimise the use of materials in building design, procurement, construction, maintenance and end of life.

The available credit is not targeted for this issue.

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Waste

Wst 01: Construction site waste management — 4 of 5

Pre-demolition audit (one credit)
The design team will complete a pre-demolition audit of any existing buildings or hard surfaces being considered for demolition. This will be used to determine whether refurbishment or reuse of materials is feasible.

Construction resource efficiency (three credits)
The design team has confirmed that a BREEAM compliant Site Waste Management Plan will be produced by the contractor and will ensure that non-hazardous waste generated throughout the building's design and construction (excluding demolition and excavation waste) will be less than 7.5m^3 (or 6.5 tonnes) per 100m2 of gross internal floor area. Two of three credits are currently targeted.

Diversion of resources from landfill (one credit)
The contractor will be required to ensure that at least 70% by volume (80% by weight) of non-hazardous waste generated by the project will be diverted from landfill, and 80% by volume (90% by weight) of demolition waste will be diverted from landfill.

Four of five credits are targeted for this issue.

Wst 02: Use of recycled and sustainably sourced aggregates — 0 of 1

Project sustainable aggregate points (one credit)
It is yet to be confirmed whether the use and type of aggregates within the development will be identified, as well as the total amount of recycled and/or secondary aggregate, the region the aggregate was sourced, and the distance travelled. The contractor will be required to ensure recycled and secondary aggregates are used to achieve this credit.

The available credit is not currently targeted for this issue.

Wst 03: Operational waste — 1 of 1

Mandatory requirements
One credit is required in order to achieve an Excellent rating.

Operational waste (one credit)
The design team has confirmed that a dedicated recyclable waste storage area within the development. The space will be clearly labelled and accessible. A compactor / baler are not currently thought to be required for the building function.

Where consistent and large amounts of compostable waste are generated, vessels will be provided for composting organic waste OR adequate spaces for storing segregated food waste and compostable organic material for collection and delivery to an alternative composting facility. A water outlet must be provided adjacent or within the facility for cleaning and hygiene purposes where organic waste is to be stored or composted on site.

The available credit is targeted for this issue.

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Wst 05: Adaptation to climate change **0 of 1**

Resilience of structure, fabric, building services and renewables installation (one credit)
The design team has confirmed that a climate change adaptation strategy will not be undertaken for the development.

The available credit for this issue is not currently targeted.

Wst 06: Designing for disassembly and adaptability **0 of 2**

Design for disassembly and functional adaptability recommendations (one credit)
The design team will not conduct a study to explore the ease of disassembly and functional adaptation potential of different scenarios before the end of Concept Design.

Disassembly and functional adaptability implementation (one credit)
The design team will not provide an update during Technical Design of how the recommendations of the study have been implemented or developed.

Zero of two credits are targeted for this issue.

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Land Use and Ecology

LE 01: Site selection **1 of 2**

Previously developed land (one credit)
The development is situated on at least 75% previously developed land.

Contaminated land (one credit)
A contamination study will not be undertaken for the development, and it is therefore unknown whether the site is affected by contamination. This credit can therefore not be targeted.

One of two credits are targeted for this issue.

LE 02: Identifying and understanding the risks and opportunities for the project **2 of 2**

Prerequisite - Assessment route role
The contractor will be required to confirm that compliance is monitored against all relevant UK and EU legislation relating to the ecology of the site.

Route 2 - Survey and evaluation (two credits)
The design team has confirmed that the ecologist was appointed at an early project stage to ensure early involvement in the project. An appropriate level of survey and evaluation has been carried out (during the preparation and brief) to determine the ecological baseline of the site.

Two of two credits are targeted for this issue.

LE 03: Managing negative impacts on ecology **3 of 3**

Pre-requisite – Ecological risks and opportunities
LE 02 is achieved to meet the pre-requisite requirements.

Planning and measures on-site (one credit)
The design team has confirmed that individuals are aware of their roles and responsibilities with regards to ecology and biodiversity. The potential impact of site preparation and construction works will be identified by the ecologist to optimise benefits and outputs for biodiversity.

The project team (whilst liaising and collaborating with representative stakeholders and, taking into consideration data collated and shared), has confirmed they will propose solutions and selected measures to be implemented during site preparation and construction works.

One of one credit targeted.

Route 2 - Managing negative impacts of the project (two credits)
The design team expects that there will be no loss of ecological value from site preparation and construction works will be managed according to the hierarchy in line with recommendations from the ecologist. Two of two credits are currently targeted.

In total, three of three credits are targeted for this issue.

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LE 04: Change and enhancement of ecological value. **2 of 4**

Prerequisite – Managing negative impacts on ecology
Roles and responsibilities have been clearly defined by the design team, site preparation and construction works have been planned, and all UK and EU legislation will be complied with.

Route 2 – Ecological enhancement (one credit)
The design team has confirmed they have liaised and collaborated with representative stakeholders, taking into consideration data collated and shared, and they will implement solutions and measures selected in a way that enhances ecological value on and off site.

Route 2 - Change and enhancement of ecology (up to 3 credits)
The project team has confirmed they will liaise and collaborate with representative stakeholders, taking into consideration data collated and shared. There is expected to be a positive change in ecological value occurring as a result of the project, but this has yet to be confirmed by the suitably qualified ecologist for the scheme. One credit is currently targeted.

In total, two of four credits are targeted for this issue.

LE 05: Long term ecology management and maintenance **2 of 2**

Prerequisite – Statutory obligations, planning and site implementation
The design team has confirmed that all UK and EU legislation will be complied with.

Management and maintenance throughout the project (one credit)
The project team has confirmed that they will liaise and collaborate with representative stakeholders, taking into consideration data collated and shared, on solutions and measures implemented. Monitoring and reporting of outcomes and successes will be completed. A section on ecology and biodiversity will be included as part of the building owner information.

Landscape and ecology management plan (or similar) development (one credit)
The project team has confirmed that a landscape and ecology management plan will be developed in accordance with BS 42020:2013, covering, as a minimum, the first five years after the project completes.

In total, two of two credits are targeted for this issue.

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Pollution

Pol 01: Impact of refrigerants 2 of 3

Pre-requisite
All systems with electronic compressors will comply with the requirements of BS EN 378:2016 (parts 2 and 3) and, where systems containing ammonia are installed, the Institute of Refrigeration Ammonia Refrigeration Systems Code of Practice.

Impact of refrigerants (two credits)
The design team confirmed that the refrigerants of the scheme are expected to have Direct Effect Life Cycle CO_2 equivalent emissions (DELC CO_2e) of ≤ 1000 $kgCO_2e/kW$ cooling/heating capacity.
One of two credits targeted.

Leak detection (one credit)
The design team has confirmed a refrigerant leak detection system will be installed. This will either be a permanent automated refrigerant leak detection system, that is robust and tested, and capable of continuously monitoring for leaks. Or contain an inbuilt automated diagnostic procedure for detecting leakage which is capable of automatically responding and managing the remaining refrigerant charge to limit loss of refrigerant.

Two of three credits are targeted for this issue.

Pol 02: Local air quality 2 of 2

The design team has confirmed that the heating, cooling and hot water will be supplied using electricity, however, there will be back up gas fired water heaters. The team have confirmed the water heaters will achieve a NOx of less than 24 (mg/kWh).

Two of two credits are targeted for this issue.

Pol 03: Surface water run-off 4 of 5

Flood risk (two credits)
A site-specific Flood Risk Assessment will be undertaken for the site, confirming the flood risk zone. Initial investigations indicate the site is in flood zone 1.
Two of two credits targeted.

Surface water run-off (two credits)
The design team has confirmed that measures will be specified to ensure that the peak run off rate for the developed site will have a 30% reduction compared to the pre-developed site. The design team has confirmed that the post development run-off volume, over the development lifetime, will not be greater than it would have been prior to the site's development and flooding of property will not occur in the event of local drainage system failure.
Zero of two credits targeted.

Minimising watercourse pollution (one credit)
This credit is currently not targeted but the design team will investigate the potential for no discharge from the site for rainfall depths of up to 5 mm.

In total, four of five credits are targeted for this issue.

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Pol 04: Reduction of night-time light pollution **1 of 1**

The design team has confirmed that external lighting will be designed and installed in compliance with ILP Guidance. All external lighting will have the capacity to be switched off automatically between 11pm and 7am.

One of one credit is targeted for this issue.

Pol 05: Noise attenuation **1 of 1**

A Suitably Qualified acoustic consultant will conduct a noise impact assessment in compliance with BS 4142:2014. 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. Where necessary, attenuation measures will be specified.

One of one credit is targeted for this issue.

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Action Plan

Action plan

The following Action Plan outlines the credits that could be targeted to achieve an EXCELLENT rating. Please note that Eight Versa recommends a safety margin of 3-5% above the minimum score in order to ensure that the rating is secured at assessment stage.

Current Score	EXCELLENT (minimum 70%)	73%
Hea 02 – Indoor air quality plan	Please note to be able to achieve any credits under Hea 02, an indoor air quality plan needs to be produced.	Pre-requisite
Hea 02 – Emissions from construction products	One credit could be achieved where three product types meet the BREEAM requirements for formaldehyde, TVOC and carcinogens. *Please note this is only achievable if an indoor air quality plan is produced.*	0.78%
Ene 04 – Passive design analysis	One credit could be achieved where a passive design analysis is completed at Concept Design stage to identify opportunities for the implementation of passive design measures to reduce the energy demand.	0.76%
Mat 06 – Material efficiency	One additional credit could be awarded if opportunities will be identified, and appropriate measures investigated and implemented, to optimise the use of materials in building design, procurement, construction, maintenance and end of life.	1.07%
Wst 02 – Recycled aggregates	One credit could be achieved the use and type of aggregates are identified, and if information regarding the total amount of recycled and/or secondary aggregate, the region the aggregate was sourced, and the distance travelled is monitored	0.6%
Wst 05 – Adaptation to climate change	Once additional credit could be awarded if a climate change adaptation strategy is developed, which identifies the impact of expected extreme weather conditions arising from climate change on the building over its projected life cycle.	0.6%
Wst 06 – Design for disassembly and functional adaptability - recommendations	One additional credit could be achieved where the design team conduct a study to explore the ease of disassembly and functional adaptation potential of different scenarios before the end of Concept Design.	0.6%
Wst 06 – Disassembly and functional adaptability – implementation	One additional credit could be achieved where design team provide an update during Technical Design of how the recommendations of the study have been implemented or developed. *Please note the credit above (Wst 06 – Design for disassembly and functional adaptability -recommendations)* needs to be achieved to be able to award this credit.	0.6%
Score with actions	EXCELLENT (minimum 70%)	77.9%

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Appendix A – Man 03

Ref	Criteria	Required for two credits plus the exemplary credit
Risk evaluation and implementation		
The principal contractor evaluates the risks (on site sand off site), plans and implements actions to minimise the identified risks, covering the following, where appropriate:		
Vehicle movement		
a	Manage the construction site entrance to minimise the impacts (e.g. safety, disruption) arising from vehicles approaching and leaving the development footprint.	X
b	Ensure the development footprint is accessible for delivery vehicles fitted with safety features (e.g. side under run protection) to remove or limit the need for on street loading or unloading. Where on-street loading is unavoidable, this should be appropriately managed.	X
c	Identify access routes to the development footprint, including for heavy vehicles to minimise traffic disruption and safety risks to others.	X
Pollution management		
d	Minimise the risks of air, land and water pollution.	X
e	Minimise the risks of nuisance from vibration, light and noise pollution.	X
Tidiness		
f	Practices ensure the development footprint is safe, clean and organised at all times. This includes, but is not limited to, facilities, materials and waste storage.	X
g	Ensure clear and safe access in and around the buildings at the point of handover.	X
Health and wellbeing		
h	Provide processes and equipment required to respond to medical emergencies.	X
i	The principal contractor identifies and implements initiatives to promote and maintain the health and wellbeing of all site operatives within the development footprint. This can be via site facilities, site management arrangements, staff policies etc.	X
j	Establish management practices and facilities encouraging equality, fair treatment and respect of all site operatives.	X
k	Provide secure, clean and organised facilities (e.g. changing and storage facilities) for site operatives within the development footprint.	X
Security processes		
l	Minimise risks of the site becoming a focus for antisocial behaviour in the local community (e.g. robust perimeter fencing, CCTV, avoid creating dark corners etc.).	X
Training, awareness and feedback		
The principal contractor is responsible for ensuring:		
m	Aspects of the construction process that might impact the community are communicated regularly, ensuring that nuisance and intrusion are minimised.	X
n	Ensure ongoing training is provided, and up to date, for personnel and visitors (covering items a to l above, as appropriate.)	X
o	The principal contractor ensures that site operatives are trained for the tasks they are undertaking (including any site specific considerations).	X
p	The fleet operators undertake driver training and awareness to promote safety within the development footprint and off site.	X
Monitoring and reporting		
The principal contractor ensures:		
q	The fleet operator captures and investigates any road accidents, incidents and near misses and reports them back to the principal contractor. The principal contractor analyses these items.	X
r	All visitor, workforce and community accidents, incidents and near misses are recorded and action is taken to reduce the likelihood of them reoccurring.	X
s	Processes are in place to facilitate collecting and recording feedback from the community and to address any concerns related to the development footprint.	X