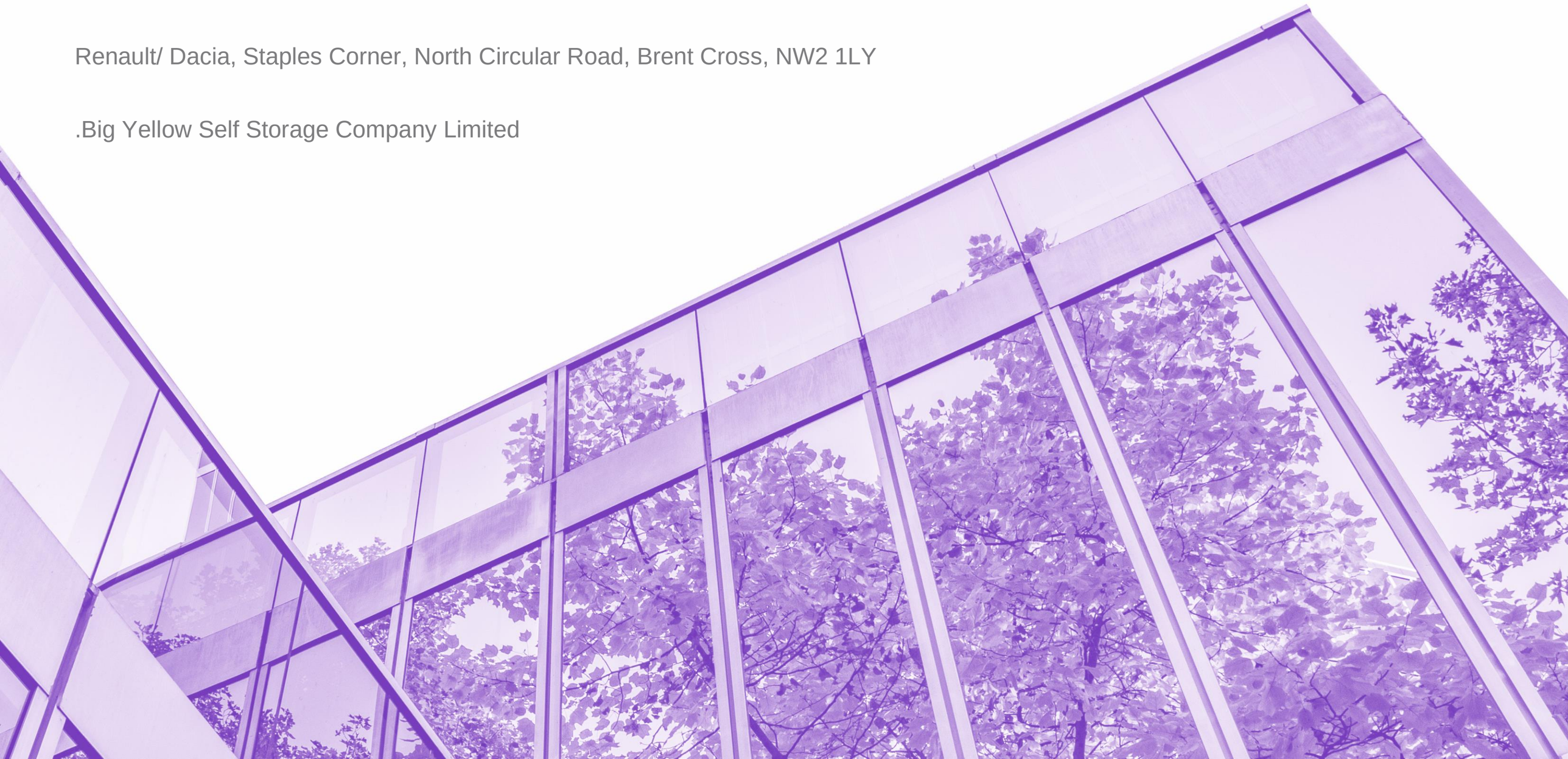
Big Yellow Staples Corner

Sustainability Statement

Renault/ Dacia, Staples Corner, North Circular Road, Brent Cross, NW2 1LY

.Big Yellow Self Storage Company Limited



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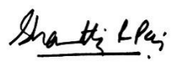
QA by	Supriya Kamath 

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1.0 Executive Summary

This Sustainability Statement has been prepared to support a planning application for the development of .Big Yellow Staples Corner Self Storage Store in Staples Corner in the London Borough of Barnet, London.

The proposals are for the demolition of an existing car dealership within the neighbouring Staples Corner Business Park (London Borough of Brent) and replacing this store in the London Borough of Barnet with the construction of a six-storey self-storage facility (Use Class B8), flexible office space (Use Class E(g)(i)) and larger external storage units (Use Class B8).

The proposal includes the erection of a five-storey self-storage facility (Use Class B8) operated by Big Yellow Self Storage. The facility will comprise a permanent ground floor providing 2,430m2 (GIA) of self-storage floorspace (Use Class B8). Self-storage floorspace would increase through the installation of demountable mezzanine floors across the first, second, third, fourth and fifth floors. The demountable mezzanine floors would be added under permitted development, after practical completion of the storage building. Flexible office space of 378m2 on ground floor and 160m2 of external storage units on the ground floor will be provided. The total area including demountable mezzanine floors is 18,190m2. Permanent floor space is provided on the ground floor only.

This report seeks to outline the approach taken to incorporate and maximize sustainability within the design to address key policies, and the associated BREEAM pre-assessment provides further evidence of this. Tuffin Ferraby Taylor (TFT) Ltd. have been commissioned by .Big Yellow Self Storage Company Limited to produce the Sustainability Statement.

Big Yellow Group PLC's vision for the development involves a holistic sustainability approach which seeks to satisfy the local and regional policies and go beyond the standards set by Building Regulations.

The proposed application is considered to deliver a positive contribution to the key principles of environmental, economic, and social sustainability. The proposed development has been reviewed in the context of local and national policy for sustainability considerations, using the following policies.

- The London Plan (2021)
- Barnet's Local Plan (2012)- Core Strategy (2012), Development Management Policies Development Plan Documents (2012) and the saved Unitary Development Plan (UDP) Policies for Brent Cross and Cricklewood.
- Barnet Draft Local Plan (Reg 19)-2021 to 2036
- Barnet - Supplementary Planning Document – Sustainable Design and Construction (2016)

The Energy Statement (See details in the Energy Statement produced by Tuffin Ferraby Taylor (TFT) Ltd which is produced in support of planning submission) demonstrates that there is 110% carbon emission reductions achieved by the use of energy efficient measures and renewable technologies (ASHP and PV), in accordance with London Plan policy SI 2 Minimise Greenhouse gas emissions and Barnet local plan policy CS13 Ensuring the Efficient use of natural resources. This is above the 35% requirement by the London Plan. Energy efficiency measures alone will reduce regulated CO2 emissions by 19 % for non-residential uses below those of a development compliant with Part L 2021 of the Building Regulations.

The building has been reviewed using the 'Be Lean', 'Be Clean' and 'Be Green' steps defined in the London Plan.

The building looks to maximise on-site carbon reduction in line with the GLA energy hierarchy limiting energy use in the first instance and then selecting energy efficient plant and building services.

Overall, the building is expected to achieve a 110% reduction in regulated carbon emissions in comparison to a Part L compliant building. This total reduction is comprised of a 19% reduction from the ‘Be Lean’ step and 90% reduction from the ‘Be Green’ step.

The energy use intensity (EUI) has been calculated for the proposed building which is 0.415 (kWh/m2/yr) less than the target 55 (kWh/m2/yr).

As part of the drive to reduce the demand for cooling highlighted by the Mayor’s Cooling Hierarchy, as detailed in the London Plan, the design of the building has considered a number of passive and active measures that assist in reducing the cooling demand of the building. The building type is being exempt from the requirement to undertake a detailed overheating assessment as noted in section 8.18 in the GLA Energy assessment guidance document. However, calculations have been undertaken to generate the Baseline emissions for the building include an overheating analysis. The results of the analysis, when incorporating the measures detailed above, indicate that the building is not at risk of overheating.

BREEAM Excellent minimum requirements have been met for Wat 01 credit to meet the requirements of London Plan SI 5 Policy Water infrastructure. A BREEAM rating of ‘Excellent has been targeted for the development to meet the policy requirements of Barnet’s Draft Local Plan (2021-2036)-Policy CDH02 Sustainable and Inclusive Design and exceeds the BREEAM ‘Very Good’ Rating.

Sustainability is at the core of the design strategy for this development and the design team have considered measures to maximize sustainability in the following areas:

- Optimisation of land use
- Climate change mitigation
- Water efficiency
- Climate change adaptation
- Ecology and Biodiversity
- Material efficiency, waste reduction and Circular economy
- Pollution prevention
- Health and Wellbeing
- Employment, training and skills development

2.0 Introduction

2.1 The Applicant

The Applicant is .Big Yellow Self Storage Company Limited (hereafter referred to as 'The Applicant' or 'Big Yellow'). The Applicant has appointed Tuffin Ferraby Taylor (TFT) Ltd. to assess the sustainability performance of the proposed application against relevant sustainability planning policy.

2.2 Purpose

This Sustainability Statement has been prepared to support the planning application for the development of Big Yellow Self Storage development at Staples Corner, London. This statement has been prepared on behalf of The Applicant by TFT. This report seeks to outline the approach taken to incorporate and maximise sustainability within the design to address key sustainability policies, and the associated BREEAM pre-assessment provides further evidence of this.

Big Yellow's vision for the development involves a holistic sustainability approach which seeks to satisfy the local and regional policies and go beyond the standards set by Building Regulations.

2.3 Proposed Development

The proposals are for the demolition of an existing car dealership within the neighbouring Staples Corner Business Park (London Borough of Brent) and replacing this store in the London Borough of Barnet with the construction of a six-storey self-storage facility (Use Class B8), flexible office space (Use Class E(g)(i)) and larger external storage units (Use Class B8).

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Figure 1- Proposed Development Location

3.0 Planning Policies

The following statutory regulations relating to sustainable development and carbon efficiency have been considered as part of the planning submission for the Proposed Development:

3.1 National Planning Policy Framework (September 2023)

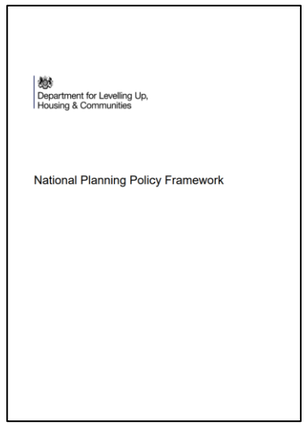

Figure 2 - National Planning Policy Framework (2023)

The National Planning Policy Framework (NPPF) 2023[1] sets out the government's approach to promoting sustainable development in England through the planning system. The National Planning Policy Framework (NPPF) outlines the Government's planning policies for England and how these should be applied. The framework details that sustainable developments should consider economic, social, and environmental objectives, and outlines various aims to meet the challenges of climate change, flooding and coastal change.

The NPPF does not stipulate specific sustainability targets. The framework was revised in September 2023 and puts an emphasis on the pursuit of the 17 Global Goals for Sustainable Development.

3.2 The London Plan (2021)

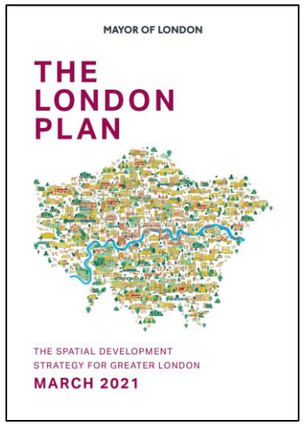

Figure 3-The London Plan (2021)

The London Plan sets out the overall strategic plan for London, providing an integrated economic, environmental, transport and social framework for the development of London over the next 20–25 years. This new London Plan presents a step change in the city's approach and serves as a blueprint for the future development and sustainable, inclusive growth of our city.

The policies detailed below have been reviewed against the Sustainability strategies for the proposed development.

- 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 supporting the circular economy
- Policy SI 8 Waste capacity and net waste self-sufficiency
- Policy SI 12 Flood risk management
- Policy SI 13 Sustainable drainage
- Policy S1 15 Water transport
- Policy T5 Cycling
- Policy T6 Car parking
- Policy G5 urban greening
- Policy G6 Biodiversity and Access to Nature

3.3 Barnet's Local Plan (2012)

Figure 4 - Barnet's Local Plan (2012) including Barnet's Core Strategy (Left) and Barnet's Development Management Policies (Right).

Barnet's Local Plan embodies spatial planning – the practice of 'place shaping' to deliver positive social, economic and environmental outcomes and provide the overarching local policy framework for delivering sustainable development in Barnet.

The Local Plan includes Development Plan Documents (DPDs) and Supplementary Planning Documents (SPDs) and the 13 retained Unitary development Policies. The Local Plan works alongside national policy and the Mayor's London Plan to inform planning decisions.

The policies detailed below have been reviewed against the Sustainability strategies for the proposed development.

- Policy CS13 Ensuring the efficient use of natural resources
- Policy CS14 Dealing with Waste
- Policy DM 02 Development Standards
- Policy DM04 Environmental Considerations for the Development

3.3.1 Supplementary Planning Documents/ Guidance

The Local Plan 2012 includes a number of Supplementary Planning Documents (SPDs). These documents provide detailed relevant further guidance:

- Sustainable Design and Construction SPG (2016)
- Cricklewood, Brent Cross and West Hendon Development Framework SPG (2005)
- London Borough of Barnet Planning Obligations SPD (2013)
- Delivering Skills, Employment, Enterprise, and Training from Development through S106 (2014)

3.4 Barnet's Draft Local Plan

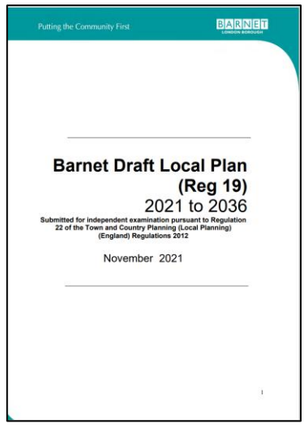

Figure 5 - Barnet's Draft Local Plan (2021-2036)

Barnet's Draft Local Plan Reg 22 Submission[2] was approved by the Council on 19th October 2021 for submission to the Secretary of State.

The Local Plan 2012 remains the statutory development plan for Barnet until such stage as the replacement plan is adopted and as such applications should continue to be determined in accordance with the 2012 Local Plan, while noting that account needs to be taken of the policies and site proposals in the draft Local Plan and the stage that it has reached.

Barnet's Draft Local Plan[3] (2021-2036) provides a positive strategy for delivering the Council's priorities through sustainable development. It identifies areas for housing and employment growth and reflects the benefits of major investment in infrastructure that projects such as the West London Orbital will bring to the Borough.

The policy detailed below has been reviewed against the Sustainability strategies for the proposed development.

- Policy CDH02 Sustainable and Inclusive Design

4.0 Energy and Carbon Emissions

4.1 Background and policy context

The Climate Change Act 2008, last updated in 2019, sets legally binding greenhouse gas emission reduction targets for the UK to deliver a net zero carbon economy by 2050 (with an interim target of 26% by 2020) and has positioned the UK on a transition to a low-carbon economy.

The Mayor of London has declared a climate emergency and has set an ambition for London to be net zero-carbon. This means all new buildings must be net zero carbon. The Mayor's London Plan sets the targets and policies required to achieve this.

It includes:

- a net zero-carbon target for all major developments.
- a requirement for all major development to 'be seen' i.e. to monitor and report its energy performance post-construction to ensure that the actual carbon performance of the development is aligned with the Mayor's net zero-carbon target.
- a requirement for all referable planning applications to calculate and reduce whole life-cycle carbon emissions to fully capture a development's carbon impact.

This project is not a referrable application and hence there is no requirement to calculate and reduce Whole Life Carbon emissions. However, as part of the BREEAM assessment, the Mat 01 Environmental impacts from construction products - Building life cycle assessment (LCA) credits have been targeted and life cycle carbon emissions will be reported through this platform.

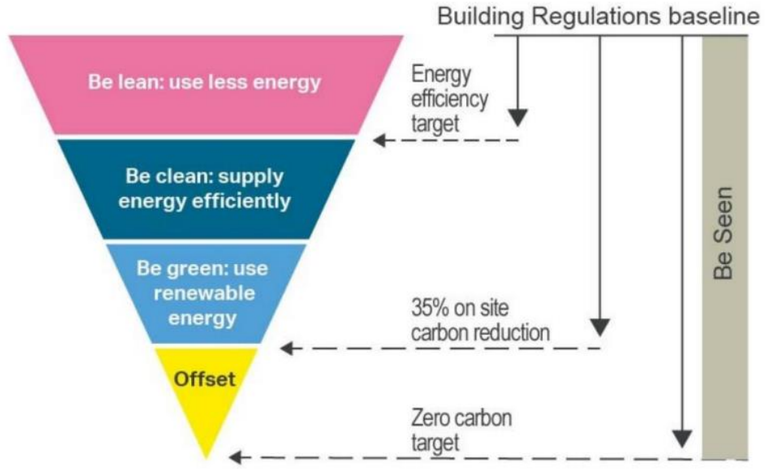

Figure 6- The London Plan Energy Hierarchy

As per Barnet's Local Plan Policy CS13: Climate Change Adaptation, ensuring the efficient use of natural resources, the proposed development is required to follow the principles of the Mayor of London's energy hierarchy as presented in Figure 6.

The London Plan Policy SI 2: Minimising Green House Gas Emissions presents the hierarchy and requirements plus sets targets for non-domestic buildings of 35% regulated carbon reduction over minimum Building Regulations 2021 and 15% must be achieved through energy efficiency measures on-site (i.e. Be Lean stage of the energy hierarchy). Where the net zero-carbon target cannot be fully achieved on-site, any shortfall should be provided as a carbon offset fund. It also places emphasis on new non-domestic buildings to reduce unregulated carbon emissions to deliver zero carbon developments via the be seen principle of committing to monitor, verify and report on energy performance during operation.

Lastly SI 2 requires development proposals to calculate and minimise carbon emissions from any other part of the development, including plant or equipment, that are not covered by Building Regulations, i.e. unregulated emissions. At planning stage energy assessments are expected to report aspects of the 'Be Seen' criteria such as regulated energy use, renewable energy potential and carbon emissions. Submission of information outlining prediction of operational energy use will have to be submitted at least four weeks after being granted planning and in the form of a CIBSE TM54 assessment.

4.2 Big Yellow, Staples Corner Energy Strategy

In support of the planning application, an Energy Statement has been developed by Tuffin Ferraby Taylor (TFT) Ltd. which examines the potential for reduction of carbon emissions for the proposed Self-Storage facility (Use Class B8), with flexible office space (Use Class E(g)(i)), external storage units (Class B8) and installation of demountable mezzanine floors across the first, second, third, fourth and fifth floors.

The energy statement has followed the GLA guidance on preparing energy assessments for planning applications (2022). The strategy for reducing energy use and associated carbon emissions through the design of the scheme follows the London Plan energy hierarchy, namely:

- Be Lean' considers passive design measures to reduce energy demand;
- Be Clean' explores how system efficiencies maximise the use of energy;
- Be Green' identifies additional energy production opportunities through installation of low and zero carbon technologies; and
- Be Seen' monitoring and reporting of energy performance in operation to ensure actual consumption are in line with the GLA's zero carbon target.

4.3 Passive Measures (Be Lean)

In line with the Energy Hierarchy methods of reducing energy use by incorporating passive design measures have been incorporated where possible. This methodology has been incorporated as not using energy is the best way to reduce energy consumption.

Details of the Architectural interventions incorporated within the design to facilitate passive design are detailed in the Design and Access Statement generated by Mountford Pigott to support the planning application. In summary these are:

- Big Yellow do not heat the storage space and annual heating demand is far lower compared to other users.
- The majority of the development is not heated, ventilated or cooled. Only the administration, flexi-office area and back of house areas are proposed to have heating, cooling and ventilation.
- The design will target highly efficient U-values for windows and U-values equal to or better than the limiting values for the building fabric as well as a good level of air tightness.
- The ventilation, heating and cooling systems will be designed to suit the relatively small conditioned areas:
- Natural ventilation will be prioritised wherever possible.
- Mechanical ventilation will use supply and extract ventilation systems with heat recovery devices.
- Heating will be provided via air source heat pumps to the main spaces
- Cooling will be provided via reverse cycle heat pump systems.
- Southern curtain walling will have horizontal solar shading to continually dissipate the suns heat and energy whilst not blocking vision, daylight or ventilation.
- LED luminaires will be installed throughout the site, including motion sensors and daylight compensation controls where appropriate.
- PV array will be installed at roof level to achieve 200 kWp production (this provision is included in the "Be Green" step).

4.4 Cooling Hierarchy and Overheating analysis

As part of the drive to reduce the demand for cooling highlighted by the Mayor's Cooling Hierarchy, as detailed in the London Plan, the design of the building has considered a number of passive and active measures that assist in reducing the cooling demand of the building. The proposed approach is detailed in the table below.

London plan cooling hierarchy item	Proposed measures
Reduce the amount of heat entering the building through orientation, shading, high albedo materials, fenestration, insulation and the provision of green infrastructure	Southern curtain walling will have horizontal solar shading to continually dissipate the suns heat and energy whilst not blocking vision, daylight or ventilation Building fabric has high levels of insulation and air tightness to limit heat ingress. Internal shading and blinds suggested to reduce solar gains.
Minimise internal heat generation through energy-efficient design	Low energy LED lighting specified throughout with the inclusion of occupancy and daylight linked controls where feasible. Availability of natural light is maximised to discourage the use of artificial lighting. Hot water is provided from local water heaters to reduce heat loss from distribution pipework.
Manage the heat within the building through exposed internal thermal mass and high ceilings	The building has incorporated these elements where appropriate for the relevant area.
Provide passive ventilation	Due to external noise levels and the configuration of the building the use of openable windows for passive ventilation is not feasible.
Provided mechanical ventilation	Adequate ventilation will be provided with heat recovery to reduce heating and cooling loads.
Provide active cooling systems	High efficiency refrigerant-based air source heat pump systems will be installed to provide active cooling.

The building type is listed in section 8.18 of the guidance document as being exempt from the requirement to undertake a detailed overheating assessment. However, calculations undertaken to generate the Baseline emissions for the building include an overheating analysis. The results of the analysis when incorporating the measures detailed above indicate that the building is not at risk of overheating. Results of the relevant calculations are included in Appendix A of the Energy statement.

4.5 Provision For Future District Heating Connection (Be Clean)

Since there are no district energy networks within the vicinity of the site and the proposed systems are not suitable for connection to district energy networks no facility for connection will be provided

4.6 Renewable Energy (Be Green)

Following the preceding steps in the Energy Hierarchy the inclusion of renewable energy to reduce site emissions as part of the 'Be Clean' stage is required.

A review of alternative technologies has been undertaken with the results included in Appendix E of the Energy statement. From this review the inclusion of Air Source Heat Pumps and Photovoltaic electricity generation are suitable technologies for this building.

The tables below indicate the carbon emission results following the 'Be Green' step of the GLA Energy Hierarchy.

Stage of the GLA Energy Hierarchy	Carbon Dioxide (CO_2) Emissions (tCO_2/yr)		
	Regulated	Unregulated	Total
Baseline (Part L 2021 Compliant Building)	34.01	75.2	109.21
Be Lean (Demand energy reduction)	27.42	75.2	102.62
Be Clean (Efficient energy supply)	27.42	75.2	102.62
Be Green (Renewable energy supply)	-3.29	75.2	71.91

The BRUKL document relating to the Be Green calculations are included in Appendix C of the Energy Statement.

The table below details the reduction in carbon emissions following the 'Be Green' stage as a percentage of the baseline values.

	Regulated CO_2 emissions (tCO_2/yr)	Regulated CO_2 emission savings (tCO_2/yr)	Percentage Saving
Baseline (Part L 2021 Compliant Building)	34.01	-	-
Be Lean (Demand energy reduction)	27.42	6.6	19%
Be Clean (Efficient energy supply)	27.42	0	0%
Be Green (Renewable energy supply)	-3.29	30.7	90%
Total cumulative savings		**37.3**	**110%**

Overall, the building is expected to achieve a 110% reduction in regulated carbon emissions in comparison to a Part L compliant building. This total reduction is comprised of a 19% reduction from the ‘Be Lean’ step and 90% reduction from the ‘Be Green’ step.

4.7 Energy Use Intensity and Space Heating Demand

The energy use intensity (EUI) and space heating demand have been calculated for the proposed building. The results of the calculations are indicated in the table below with the target values from the relevant GLA guidance document provided for comparison.

	Calculated	Target	Pass
Energy Use Intensity	0.42(kWh/m^2/yr)	55 (kWh/m^2/yr)	Yes
Space Heating Demand	0.02 (kWh/m^2/yr)	15 (kWh/m^2/yr)	Yes

5.0 Other Sustainability indicators

5.1 Optimisation of land use

The proposed development occupies previously developed land. The site currently comprises a central car dealership building, associated outbuildings, hardstanding and small amounts of ephemeral vegetation, introduced shrub, scattered scrub and scattered trees.

The proposed development is targeting the 1no. BREEAM credit 'LE 01 - Previously occupied land', which relates to over 75% of the proposed development footprint being built upon previously occupied land, as demonstrated in the BREEAM Pre-Assessment provided in Appendix A. This strategy promotes the reuse of brownfield sites with low ecological value, mitigation and enhancement of ecology.

5.2 Climate Change Mitigation

Climate change mitigation is action to limit climate change. This action either reduces emissions of greenhouse gases or removes those gases from the atmosphere. The following mitigation strategies are proposed to minimise the effects of climate change.

- The sustainability principles from the London Plan with respect to energy use and climate change mitigation strategies (Be Lean, Be Clean, Be Green and Be seen) have been addressed as detailed in Section 3 of this document.
- The building is designed to be energy efficient to meet BREEAM criteria for Excellent rating under BREEAM Ene 01 Energy performance issue. 4 Credits have been targeted under the Ene 01 issue.
- Operational energy consumption will be modelled, monitored and reported. Four credits under BREEAM Ene 01 Prediction of Operational Energy Consumption are targeted to meet this requirement.
- There will be energy monitoring to identify and reduce high energy demands where possible by accurate measurement of the energy consumption of the building by end use.
- The building's energy consumption will be reduced through the specification of energy efficient external lighting.
- The building's energy consumption is reduced through the adoption of passive design solutions and low or zero carbon (LZC) energy sources.
- The building's energy consumption from lifts is reduced by specifying the optimum number and size of energy efficient transportation systems.
- A site-specific transport assessment and travel plan has been undertaken for planning submission (see Transport Assessment provided by Rappor Ltd (November 2023) as part of planning submission) that provides a long-term management strategy which encourages more sustainable travel. The travel plan includes measures to increase or improve more sustainable modes of transport and movement of people and goods during the building's operation. The Brent Cross West railway station is 650m from the Site and can be reached on foot in around 10 minutes and will improve public transport accessibility to the site significantly once it opens in 2024. The proposed development includes the provision of 12no. covered long stay cycle parking spaces together with 8no. short stay spaces and Electric Vehicle charging points to improve sustainable modes of travel thus reducing transport emissions and mitigating climate change.

5.3 Water efficiency

The proposed building will include, where appropriate, the following features for minimisation of water use:

- The proposed development is targeting 3no. BREEAM credits within the 'Wat 01 – Water Consumption' issue, which is equivalent to a 40% improvement against the baseline component performance. The baseline component specification is equivalent to the water efficiency of industry standard components steered by the minimum levels required by the Water Supply (Water Fittings) Regulations and Part G of the Building Regulations. The targeted performance in this BREEAM issue greatly exceeds the required 1 credit (relating to a 12.5% improvement against the baseline performance) which is required for compliance with London Plan Policy S15 Policy Water infrastructure.
- Flow control devices in WC areas to minimise water leaks and wastage from sanitary fittings.
- Water meters will be specified to ensure water efficiency is monitored and maintained throughout the life of the building.
- Landscaping strategy will include native and hard planting, thereby only relying on precipitation, without reliance on a formal irrigation system where feasible, thus reducing unregulated water consumption.

5.4 Climate Change Adaptation

Climate Change Adaptation seeks to reduce the risks posed by climate changes, and to benefit from any associated opportunities where possible. It is one of the ways to respond to climate change, along with mitigation. The below climate change adaptation strategies for flooding and surface water run-off have been considered for the proposed development.

- Flood Risk Assessment carried out by Evolve in November 2023 for planning submission confirms that the proposed Development would be safe, without increasing flood risk elsewhere, and that a positive reduction in flood risk would be achieved through the inclusion of surface water attenuation in accordance with national policy. The EA (Environmental Agency) flood Map for planning shows the site is located within Flood Zone 2 and Flood Zone 3a. As noted in the report all floor levels must be a minimum of 300mm above the 1% (1 in 100) AEP river flood level, including climate change to mitigate the effects from Fluvial/Tidal flooding. The EA data shows a flood level of 39.960mAOD for node 06238MN_B.208d. Therefore, the finished floor level of the development should be set at 40.260mAOD minimum.

- To meet the requirements of London Plan Policy SI 13 Sustainable Drainage and Barnet's Local plan policy DM04: Environmental considerations for development, the drainage strategy for surface water run-off for the proposed development has been developed to meet the London Plan SUDS (Sustainable Urban Drainage Strategy) hierarchy, as noted in section 6 of the Drainage Strategy developed by evolve for planning submission in November 2023. The post development surface water flow from the site will be restricted to match the greenfield runoff rate for the 1:1yr, 1:30yr and 1:100yr storms. A total of 314m³ of attenuation will be provided. The post development flow from the site will be discharged to the existing connections to the public sewer currently serving the site. Permeable paving and propriety treatment systems will be used to improve water quality and remove hydrocarbons and suspended solids from the hard standing runoff.

- To meet the requirements of BREEAM Wst 05 Adaptation to Climate Change credit a climate change adaptation strategy appraisal to identify the impact of expected extreme weather conditions arising from climate change on the building over its projected life cycle will be carried out. Recommendations or solutions based on the climate change adaptation strategy appraisal will be developed and implemented where practical and cost effective.

- Development is expected to reduce overheating risk through following the steps in the cooling hierarchy.

- Internal overheating will be mitigated by design strategies such as well positioned windows, good ventilation strategy, openable windows, use of blinds and Brise Soleil and achieving appropriate thermal comfort levels within the occupied spaces.

- External overheating will be mitigated through the use of landscape strategy which will include trees, and vegetation, specifying high reflectance paving and roofing materials which can help reduce urban heat island effects by shading building surfaces, deflecting radiation from the sun, and releasing moisture into the atmosphere.

5.5 Ecology and Biodiversity

An ecologist has been appointed at an early stage and have actively collaborated with the rest of the team with the aim of optimising the ecological value of the site post-development. A Preliminary ecological appraisal has been completed by RPS Group in November 2023 in support of the planning application.

- The current outline Landscape Strategy proposes dedicated urban greening, comprising soft landscaping which includes external amenity space to the enclosed rear of the proposed development, in addition to proposed soft landscaping to the public realm to the south of the proposed development. The proposed soft landscaping plan will support the provision of species rich interventions to improve biodiversity gain in comparison with the existing site. Compared to the existing site which provided limited landscaped space, there will be a substantial increase in biodiversity and urban greening. Under current proposals the biodiversity net gain requirement will be achieved in excess and the proposals will satisfy the urban greening factor target as confirmed in the Preliminary Ecological Appraisal. The Proposed Development is targeting 2no. BREEAM credits under 'LE 04 - Change and enhancement of ecology', which equates to no net loss in biodiversity for the habitats within the scope of assessment of the proposed development in terms of foliage related, watercourses and area-based habitats, when compared with the biodiversity of the existing site. Majority of the BREEAM ecology credits are targeted to address measures such as habitat protection and creation, and improvement of long-term biodiversity for the building's site and surrounding land.

- The ecologist has presented key recommendations to protect birds and bats within their ecological assessment. Recommendations include carrying out demolition outside of the bird nesting season, not exceeding the present lighting lux levels of light cast on the river and northern boundary of the site and avoid lighting the new proposed landscaping elements to avoid artificial lighting of bat roosts, access points and their foraging pathways.

- Recommendations from the ecologist to enhance biodiversity include installing bird boxes, insect boxes and including suitable climbing shrubs in the soft landscaping strategy.

5.6 Material efficiency, Waste reduction and Circular Economy

The below material efficiency, waste reduction and circular economy strategies will be implemented to reduce the environmental and social impact of construction products used on a project. The project will take a 'whole life cycle' approach to construction product impacts, encouraging consideration of impacts during manufacture, design, procurement, installation, in-use and end-of-life. The design team are committed to specifying environmentally considerate materials. The principles of circular economy have been included within the design proposals such as building in layers, designing out waste, designing for longevity, designing for adaptability and flexibility and designing for disassembly.

- Materials will be sourced in accordance with the project's Sustainable Procurement Plan and procured locally, wherever possible.

- All timber and timber-based products will be procured from legal sustainable sources, using third party certification e.g., FSC /PEFC as verification evidence.

- Buildings' environmental life cycle impacts will be reduced through conducting Life Cycle Assessment and integrating its outcomes in the design decision-making process.
- Materials with low environmental impact will be specified, where possible, and the team will seek to verify this through specifying materials with responsible certifications e.g. ISO 14001, BES 6001etc
- Manufacturers that can demonstrate through Environmental Product Declarations (EPDs) will be favoured, for the low carbon impact of their products.
- A fabric-first building design approach has been taken, leading to the specification of materials with a high thermal performance.
- Specify products with either no formaldehyde or low VOC containing materials to improve indoor air quality.
- Materials with recycled content will be specified where feasible.
- The life span of the building will be increased through designing for durability and protection from degradation and specifying appropriate construction products.
- The reduction of environmental impacts through optimising the use of materials during all stages of the project is encouraged through the design and construction phase of the project.
- Manufacturer take back schemes and End of Life certificates will be requested from supply chain where feasible to retain the value of materials at the end of the building life cycle and reducing waste to achieve the circular economy objectives for the project.
- Where feasible materials identified for reuse in the pre-demolition audit will be used back on site.
- Avoid and restrict the specification of hazardous materials.
- A Resource Management Plan will be produced that details opportunities for reducing waste and maximising recycling and recovery rates. The appointed Contractor will segregate construction waste and process it in accordance with the waste hierarchy, with the aim of maximising waste recovery and diverting waste from landfill.
- A suitably sized waste area is included within the design to provide a secure space that will facilitate the segregation of different recycling and waste streams.
- There will be diversion of operational waste form landfill through the provision of space and facilities allowing the segregation and storage of recyclable waste.

The design includes measures such as demountable mezzanine floors and partitions that facilitate adaptability, flexibility and disassembly to minimise the creation of waste in the future. A building adaptability and disassembly guide will be developed to communicate the characteristics allowing functional adaptability and disassembly thus contributing to meeting the principles of circular economy strategies.

5.7 Pollution Prevention

The below design strategies will be implemented to mitigate air pollution, noise pollution and light pollution.

- An Air quality assessment has been produced by RPS Group (November 2023) which provides mitigation measures for reducing air pollution on site during construction and operation in section 7 of the report. A Construction Environmental Management Plan to address environmental management issues addressed during construction will be submitted in support of planning submission.
- The appointed demolition and principal contractor will be required to implement best practice pollution prevention policies and produces in accordance with PPG6: Pollution Prevention Guidelines. These will include use of dustsheets, regular sweeping of construction dust, damping down of the site during dry weather, wheel washes and covers to skips.
- ASHPs will be installed to generate heating, cooling, and hot water for the treated areas of the building. With the building being powered by electricity, there will be no flue gasses from the development.
- Electric car charging points will be installed to encourage the use of Electric Vehicles thus reducing air pollution.
- Noise impact assessment produced by Sharp Acoustics in support of the planning submission confirms that the BREEAM Hea 05 and Pol 5 acoustics credits can be achieved and noise pollution is mitigated on site.
- The external lighting strategy has been designed to reduce light pollution 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[1].
- Automatic external lighting will be controlled by photocells and timers to ensure that lights do not operate during daylight hours.
- Where safety or security lighting is provided, this part of the lighting system will comply with the lower levels of lighting, recommended by the Institute of Lighting Professionals (ILP) guidance notes.
- External lighting will not exceed the present lighting lux levels of light cast on the river and northern boundary of the site. Lighting will be avoided on the new proposed landscaping elements. These strategies will address avoiding artificial lighting of bat roosts, access points and their foraging pathways to meet the recommendation within the ecology report.

5.8 Health and Wellbeing

The development has been designed with the end-users health and wellbeing in mind. The below Health and Wellbeing strategies will be implemented as part of design and operation.

- Occupants will be provided with the conditions that facilitate good visual comfort by designing out the potential for glare.

- Internal and external lighting systems will be designed to provide appropriate illuminance (lux) levels, thereby giving a more comfortable environment for occupants Internal lighting is zoned to allow for occupant control.
- Good indoor air quality will be facilitated by considering indoor air pollution early in the design process so that a mitigation strategy can be put in place. An Indoor Air Quality Plan will be produced for the project.
- Harmful emissions from construction products will be managed by specifying finishes and products that have been tested in accordance with the appropriate standards for VOC and Formaldehyde.
- Thermal modelling will inform the building design to provide a comfortable thermal environment. Building staff will be given control over their environment through appropriate temperature control strategies and thermal zoning.
- Building occupants will experience best practice acoustic performance levels appropriate to the functional activities in occupied spaces. Noise impact assessment produced by Sharp Acoustics in support of the planning submission confirms that the BREEAM Hea 05 acoustics credits can be achieved and the criteria for achieving sound insulation, indoor ambient noise levels and room acoustics in occupies spaces has been met.
- The building will be designed to consider and take into account security needs to ensure occupants safety and wellbeing. A secure by design and SABRE security assessment has been instructed for the proposed development to meet the requirements of the BREEAM Hea 06 Security credit requirements. Recommendations for security control arising from the security needs assessment will be embedded in the design.
- Provision of a natural landscaping and an outside amenity space with a seating area for building users be provided.
- High quality materials will be used to create a thermally comfortable space for occupants.
- Design will be inclusive for all users and regular reviews with be undertaken as the design develops to ensure suitable access measures are in place.

5.9 Community Responsibility and Social value

Big Yellow Group PLC positively contribute to the local communities of their stores through community investments and engagement. The below are some of the key initiatives.

- Provide discounted and free space at each store to local charities,
- Encouraging job applications from all backgrounds and experiences and providing work placements to people with disabilities from local communities.
- Where possible provide apprenticeship, work placements and training opportunities to local people directly through the construction programme and during operation of the building.

6.0 BREEAM

6.1 Background

There are a range of potential certifications that seek to demonstrate a building's sustainability credentials for major refurbishment. The Building Research Establishment's Environmental Assessment Method (BREEAM) is the UK's first and most widely used holistic sustainability rating scheme for the built environment and has contributed to the emerging focus in the UK on sustainability in building design, construction and use. Through its application and use BREEAM helps clients measure and reduce the environmental impacts of their buildings and in doing so creates higher value, lower risk assets.

6.2 Policy Requirements

As per Barnet's Local Plan Policy DM02: Development standards, the Proposed Development is expected to demonstrate compliance with the guidance set out in the council's suite of Supplementary Planning Documents, including BREEAM, the environmental assessment method for non-residential development.

Barnet's Local Plan Supplementary Planning Document: Sustainable Design and Construction requires that Major and Large-Scale development proposals should achieve a minimum 'Very Good' rating.

The London Plan Policy SI 5 Water infrastructure also requires development proposals to achieve at least a BREEAM Excellent standard for Wat 01 - Water consumption, which is equivalent to 1 credit and a 12.5% improvement against the baseline performance.

6.3 BREEAM Assessment: BREEAM UK New Construction Version 6.1

A BREEAM Pre-Assessment has been conducted to analyze the potential to achieve the BREEAM 'Excellent' rating.

6.3.1 BREEAM UK New Construction Version 6.1 Rating Benchmarks

BREEAM rating benchmarks for projects assessed using BREEAM UK New Construction Version 6.1 are:

BREEAM Rating	% Score
Outstanding	≥ 85
Excellent	≥ 70
Very Good	≥ 55
Good	≥ 45
Pass	≥ 30
Unclassified	< 30

Table 2 – BREEAM Rating Benchmarks

BREEAM rating benchmarks enable a client and all other stakeholders to compare the performance of a newly constructed building with other BREEAM rated buildings, and the typical sustainability performance of a stock of new non-domestic buildings in the UK.

6.3.2 BREEAM UK New Construction Version 6.1 Category Weightings

Category weightings are fundamental to any building environmental assessment method providing a means of defining and ranking the relative impact of environmental issues. BREEAM uses an explicit weighting system to determine the overall BREEAM score.

The proposed development will be assessed as a fully fitted Industrial building. For fully fitted out BREEAM Assessments, the BREEAM Environmental section weighting defined are presented below.

BREEAM Environmental Section	Weighting (Fully Fitted Out)
Management	11%
Health and Wellbeing	14%
Energy	16%
Transport	10%
Water	7%
Materials	15%
Waste	6%
Land Use and Ecology	13%
Pollution	8%
Total	100%
Innovation (additional)	10%

Table 3– BREEAM Environmental section weightings

6.3.3 BREEAM UK New Construction Version 6.1 Minimum Standards

To ensure performance against fundamental environmental issues is not overlooked in pursuit of a particular rating, BREEAM sets minimum standards of performance in key areas, e.g. energy, water, waste etc. The majority of BREEAM credits can, however, be traded, so non-compliance in one area can be offset through compliance in another to achieve the target BREEAM rating.

The minimum acceptable levels of performance for each rating are summarised below:

BREEAM Issue	Minimum Standards by BREEAM Rating Level				
	Pass	Good	Very Good	Excellent	Outstanding
Man 03 Responsible Construction Practices	None	None	None	One credit (responsible construction management)	Two credits (responsible construction management)
Man 04 Commissioning and Handover	None	None	One credit (commissioning – test schedule and responsibilities)	One credit (commissioning – test schedule and responsibilities)	One credit (commissioning – test schedule and responsibilities)
Man 04 Commissioning and Handover	None	None	Criterion 11 (Building User Guide)	Criterion 11 (Building User Guide)	Criterion 11 (Building User Guide)
Man 05 Aftercare	None	None	None	One credit (commissioning – implementation)	One credit (commissioning – implementation)
Ene 01 Reduction of Energy Use and Carbon Emissions	None	None	None	Four credits (Energy performance or Prediction of operational energy consumption)	Six credits (Energy performance) and Four credits (Prediction of operational energy consumption)
Ene 02 Energy Monitoring	None	None	One credit (First sub-metering credit)	One credit (First sub-metering credit)	One credit (First sub-metering credit)
Wat 01 Water Consumption	None	One credit	One credit	One credit	Two credits
Wat 02 Water Monitoring	None	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only
Mat 03 Responsible Sourcing of Construction Products	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only
Wst 01 Construction Waste Management	None	None	None	None	One credit
Wst 03 Operational Waste	None	None	None	One credit	One credit

Table 4– Minimum BREEAM standards by rating level

As the Proposed Development is targeting a BREEAM 'Excellent' rating, the requisite minimum standards, highlighted in Table 4 have been targeted in the BREEAM Pre-Assessment contained within Appendix A of this document.

In exceedance of the London Plan Policy SI 5 Water infrastructure and the BREEAM minimum standard for 'Excellent', the Proposed Development is targeting three BREEAM credits, which relates to a 25% improvement in the water consumption (litres/person/day) over the baseline performance. This will be achieved by the specification of water efficient components.

A BREEAM Pre-Assessment workshop was held with the Client and design team on 9th November 2023, and since then, regular meetings have been carried out to discuss early-stage actions and highlight further sustainable design opportunities. The current targeted score is **73.11% (Excellent).** A copy of the current BREEAM assessment tracker is detailed in **Appendix A.**

7.0 Conclusion

This Sustainability Statement has been prepared to support a planning application for the development of Big Yellow Staples Corner Self Storage Store in Staples Corner in the London Borough of Barnet, London.

All relevant sustainability policy requirements from the London Plan 2021 and Barnet Local plan 2012 and emerging Barnet Local Plan have been addressed within the proposed development.

The Energy Statement (See details in the Energy Statement produced by Tuffin Ferraby Taylor (TFT) Ltd which is produced in support of planning submission) demonstrates that there is 110% carbon emission reductions achieved by the use of energy efficient measures and renewable technologies (ASHP and PV), in accordance with London Plan policy SI 2 Minimise Greenhouse gas emissions and Barnet local plan policy CS13 Ensuring the Efficient use of natural resources. This is above the 35% requirement by the London Plan. Energy efficiency measures alone will reduce regulated CO2 emissions by 19 % for non-residential uses below those of a development compliant with Part L 2021 of the Building Regulations.

The building has been reviewed using the 'Be Lean', 'Be Clean' and 'Be Green' steps defined in the London Plan.

The building looks to maximise on-site carbon reduction in line with the GLA energy hierarchy limiting energy use in the first instance and then selecting energy efficient plant and building services.

Overall, the building is expected to achieve a 110% reduction in regulated carbon emissions in comparison to a Part L compliant building. This total reduction is comprised of a 19% reduction from the 'Be Lean' step and 90% reduction from the 'Be Green' step.

The tables below provide a breakdown of the on-site savings

Stage of the GLA Energy Hierarchy	Carbon Dioxide (CO_2) Emissions (tCO_2/yr)		
	Regulated	Unregulated	Total
Baseline (Part L 2021 Compliant Building)	34.01	75.2	109.21
Be Lean (Demand energy reduction)	27.42	75.2	102.62
Be Clean (Efficient energy supply)	27.42	75.2	102.62
Be Green (Renewable energy supply)	-3.29	75.2	71.91

The table below details the reduction in carbon emissions following the 'Be Green' stage as a percentage of the baseline values.

Regulated CO_2 Emissions Savings	Tonnes of CO_2 per annum	%
Be lean: Savings from energy demand reduction	6.6	19%
Be clean: Savings from heat network	0.0	0%
Be green: Savings from renewable energy	30.7	90%
Total cumulative savings	**37.3**	**110%**

The energy use intensity (EUI) has been calculated for the proposed building which is 0.415 (kWh/m2/yr) less than the target 55 (kWh/m2/yr). Details are included in section 4.7 of this report.

As part of the drive to reduce the demand for cooling highlighted by the Mayor's Cooling Hierarchy, as detailed in the London Plan, the design of the building has considered a number of passive and active measures that assist in reducing the cooling demand of the building. The building type is being exempt from the requirement to undertake a detailed overheating assessment as noted in section 8.18 in the GLA Energy assessment guidance document. However, calculations have been undertaken to generate the Baseline emissions for the building include an overheating analysis. The results of the analysis, when incorporating the measures detailed above, indicate that the building is not at risk of overheating. Details have been provided in section 4.5 of this report.

Sustainability measures to maximize sustainability in the following areas have been addressed in section 5 of the report :

- Optimisation of land use
- Climate change mitigation
- Water efficiency
- Climate change adaptation
- Ecology and Biodiversity

- Material efficiency, waste reduction and Circular economy
- Pollution prevention
- Health and Wellbeing
- Employment, training and skills development

A BREEAM rating of ‘Excellent has been targeted for the development to meet the policy requirements of Barnet’s Draft Local Plan (2021-2036)-Policy CDH02 Sustainable and Inclusive Design and exceeds the BREEAM ‘Very Good’ Rating. BREEAM Excellent minimum requirements have been met for Wat 01 credit to meet the requirements of London plan SI 5 Policy Water infrastructure.

The proposed development is being assessed against the BREEAM New Construction V6.1 Industrial Buildings fully fitted out criteria, which further demonstrates the development’s sustainability credentials. A BREEAM Pre-Assessment workshop was held with the Client and design team on 9th November 2023, and since then, regular meetings have been carried out to discuss early-stage actions and highlight further sustainable design opportunities. The current targeted score is **73.11% (Excellent).** A copy of the current BREEAM assessment tracker is detailed in **Appendix A**.

APPENDIX A: BREEAM Pre-Assessment

Big Yellow - Staples Corner

BREEAM Pre-assessment Summary Report

Pre-assessment

01 Dec 2023

Tuffin Ferraby Taylor (TFT) Ltd

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Introduction

This report is intended as a summary of the BREEAM pre-assessment review for the following project:

Project Name	Big Yellow - Staples Corner
Version	BREEAM UK NC V6
Assessment stage	Pre Assessment
Lead Consultant	Supriya Kamath
Target Rating	Excellent (70%)
Downloaded By	Supriya Kamath
Download Date	01/12/23
Download Time	9:37:24 (GMT)

Site assumptions (Project Info details) that have been used to filter the credits in accordance with the scheme can be found in the Appendix at the end of this document.

Scoring scenarios

It should be noted that the pre-assessment scores have been based on the following scoring scenarios;

- Current - The number currently achieved.

On this basis, the following scores are considered achievable under each scenario;

Scenario	Score	BREEAM Rating
Current	73.11%	Excellent

Minimum Standards

In addition performance against the minimum standards (required for the specified target rating) under each scenario is summarised below;

Issue	Current
Man 03 - Responsible construction practices	✔
Man 04 - Commissioning and handover	✔
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 construction products	✔
Wst 01 - Construction waste management	✔
Wst 03 - Operational waste	✔

If the required minimum standards are not met then the target rating will not be achieved regardless of overall score.

The following is a list of all credits available for this project, along with the following:

Current	The number currently achieved.

Credit Progress Log

Management				
Man 01 - Project brief and design				
	Credit	**Available**	**Current**	**Comments**
1	Project delivery planning	1	1	Criteria: *Requirement 1* Prior to completion of the Concept Design, the project delivery stakeholders (see Definitions) meet to identify and define for each key phase of project delivery: 1. Roles 2. Responsibilities 3. Contributions. *Requirement 2* Consider each one of the following items when defining roles, responsibilities and contributions for each key phase of the project: 1. End user requirements 2. Aims of the design and design strategy 3. Particular installation and construction requirements or limitations 4. Occupiers' budget and technical expertise in maintaining any proposed systems 5. Maintainability and adaptability of the proposals 6. Operational energy (see Assessment scope) 7. Requirements for the production of project and end user documentation 8. Requirements for commissioning, training and aftercare support. Where the building occupants are not known, the list of considerations above still applies.The appropriate project delivery stakeholder considers each item, based on likely scenarios of building occupancy. *Requirement 3* The project team demonstrates how the project delivery stakeholders' contributions and the consultation process outcomes influence the following: 1. Initial Project Brief 2. Project Execution Plan (see Definitions) 3. Communication Strategy (see Definitions) 4. Concept Design. Responsibility PM Evidence required at design stage Letter of compliance from PM Roles and Responsibilities Matrix Client Brief Design Brief Construction programme RIBA Stage 2 drawings and reports BREEAM pre-assessment report Sustainability planning reports **Credit targeted**
2	Stakeholder consultation (interested parties)	1	0	**Credit not targeted**
3	BREEAM AP (concept design)	1	1	Criteria: *Requirement 8* Prerequisite for BREEAM Advisory Professional credits (Concept and Developed Design): The project team, including the client, formally agree strategic performance targets (see Definitions) early in the design process (with the support of the BREEAM AP where appointed). *Requirement 9* Involve a BREEAM AP in the project at an appropriate time and level to: 1. Work with the project team, including the client, to consider the links between BREEAM issues and assist them in maximising the projects overall performance against BREEAM, from their appointment and throughout Concept Design 2. Monitor progress against the performance targets (see Definitions) agreed under criterion 8 throughout all stages after their appointment where decisions critically impact BREEAM performance 3. Proactively identify risks and opportunities related to the achievement of the targets agreed under criterion 8 4. Provide feedback to the project team as appropriate, to support them in taking corrective actions and achieving their agreed performance targets 5. Monitor and, where relevant, coordinate the generation of appropriate evidence by the project team. Responsibility: Client BREEAM AP/Sustainability Consultant Evidence required at design stage: Client Brief confirming BREEAM Excellent target BREEAM AP appointment letter BREEAM AP report **Credit targeted**
4	BREEAM AP (developed design)	1	1	Criteria: *Requirement 10* Criteria 8 and 9 are achieved. *Requirement 11* Involve the BREEAM AP in the project at an appropriate time and level to: 1. Work with the project team, including the client, to consider the links between BREEAM issues and to assist them in maximising the projects overall performance against BREEAM throughout Developed Design 2. Monitor progress against the performance targets agreed under criterion 8 throughout all stages where decisions critically impact the specification and tendering process and the BREEAM performance 3. Proactively identify risks and opportunities related to the achievement of the targets agreed under criterion 8 4. Provide feedback to the project team as appropriate, to support them in taking corrective actions and achieving their agreed performance targets. 5. Monitor and, where relevant, coordinate the generation of appropriate evidence by the project team. Responsibility: BREEAM AP/Sustainability Consultant Client Evidence required at design stage: BREEAM AP reports at design stage **Credit targeted**
Man 02 - Life cycle cost and service planning				
	Credit	**Available**	**Current**	**Comments**

1	Elemental LCC	2	2	Criteria: *Requirement 1* A competent person (see Definitions) carries out an outline, entire asset LCC plan at Process Stage 2 (equivalent to Concept Design - RIBA Stage 2) together with any design options appraisals in line with 'Standardised method of life cycle costing for construction procurement' PD 156865: 2008. *Requirement 2* The elemental LCC plan: 1. Provides an indication of future replacement costs over a period of analysis as required by the client (e.g. 20, 30, 50 or 60 years); 2. Includes service life, maintenance and operation cost estimates. The study period should ideally be agreed by the client, in line with the design life expectancy of the building. However, where the life expectancy of the building is not yet formally agreed (due to being at very early design stages), the default design life of 60 years should be used for modelling purposes (in line with the UK default). *Requirement 3* Demonstrate, using appropriate examples provided by the design team, how the elemental LCC plan has been used to influence building and systems design and specification to minimise life cycle costs and maximise critical value. Responsibility: LCC consultant Evidence requried at design stage : Elemental LCC report **Two credits targeted**
2	Component level LCC options appraisal	1	1	Criteria: *Requirement 4* A competent person develops a component level LCC options appraisal by the end of Process Stage 4 (equivalent to Technical Design RIBA Stage 4) in line with PD 156865: 2008. The component level LCC includes (where present): 1. Envelope, e.g. cladding, windows, or roofing 2. Services, e.g. heat source cooling source, or controls 3. Finishes, e.g. walls, floors or ceilings 4. External spaces, e.g. alternative hard landscaping, boundary protection. The Component level LCC option appraisal should review all of the above component types (where present). However, you do not need to consider every single example cited under each component; only a selection of those most likely to draw valued comparisons. This is to ensure that a wide range of options are considered and help focus the analysis on components which would benefit the most from appraisal. *Requirement 5:* Demonstrate, using appropriate examples provided by the design team, how the component level LCC options appraisal has been used to influence building and systems design and specification to minimise life cycle costs and maximise critical value. Responsibility: LCC Consultant Evidence required at design stage : Component level LCC options appraisal report **Credit targeted**
3	Capital cost reporting	1	1	Criteria: *Requirement 6* Report the capital cost for the building in pounds per square metre of gross internal floor area (£k/m) as part of the submission to BRE. See also Methodology and Additional information. Responsibilities: Client Evidence required at design stage : Signed predicted capital cost letter by Client **Credit targeted**
Man 03 - Responsible construction practices				
	Credit	**Available**	**Current**	**Comments**
Pre-req 1	Prerequisite - Legally harvested and traded timber		✔	Criteria: *Requirement 1* All timber and timber-based products used during the construction process of the project are 'legally harvested and traded timber' (see Definitions). For other materials there are no prerequisite requirements at this stage. Responsibility: Contractor Evidence required at design stage: Contractor tender prelims **Pre-requiste criteria must be met**
1	Environmental management	1	1	Criteria: *Requirement 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. The EMS must: 1. Be third party certified, to ISO 14001: 2015, EMAS (EU Eco-Management and Audit Scheme) or equivalent standard; OR 2. In compliance with BS 8555: 2016 have: 1. Appropriate structure 2. Reached implementation stage phase four implementation and operation of the environmental management system 3. Completed defined phase audits one to four. *Requirement 4* All parties who at any point manage the construction site (e.g. the principal contractor, the demolition contractor) implement best practice pollution prevention policies and procedures on-site in accordance with Working at construction and demolition sites: PPG6, Pollution Prevention Guidelines. Responsibility: Contractor Evidence required at design stage: Contractor Tender prelims **Credit targeted**

2	BREEAM AP (site)	1	1	Criteria: *Requirement 5* The client and the contractor formally agree performance targets. *Requirement 6* Involve a BREEAM AP in the project at an appropriate time and level to: 1. Work with the project team, including the client, to consider the links between BREEAM issues and assist them in achieving and if possible going beyond the design intent, to maximise the projects performance against the agreed performance targets throughout the Construction, Handover and Close Out stages 2. Monitor construction progress against the performance targets agreed under criterion 5 throughout all stages where decisions critically impact BREEAM performance 3. Proactively identify risks and opportunities related to the procurement and construction process and the achievement of the targets agreed under criterion 5 4. Provide feedback to the constructors and the project team as appropriate, to support them in taking corrective actions and achieving their agreed performance targets 5. Monitor and, where relevant, coordinate the generation of appropriate evidence by the project team and the provision to the assessor. Responsibility: BREEAM AP/Sustainability Consultant Evidence required at design stage: Appointment letter from Client confirming appoint of BREEAM AP at construction stage **Credit targeted**
3	Responsible construction management	2	2	Criteria: *Requirement 7* Achieve items listed as required for one credit in Table 4.1 Responsible construction management items. *Requirement 8* Achieve criterion 7. *Requirement 9* Achieve six additional items in Table 4.1 Responsible construction management items. Responsibility: Contractor Evidence required at design stage: Contractor tender prelims Notes : CCS scoring below **One credit** requires a minimum of **9** points per section and **27** overall. **Two credits** require a minimum of **11** points per section and **35** overall. **Exemplary credit** requires a minimum of **13** points per section and **39** overall. **Two credits targeted plus exemplary**
4	Monitoring of construction site impacts	2	2	Criteria: *Requirement 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. To ensure the robust collection of information, this individual must have the appropriate authority and responsibility to request and access the data required. Where appointed, the BREEAM AP could perform this role. *Requirement 11* First monitoring credit - Utility consumption Energy consumption Achieve criterion 10. *Requirement 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. *Requirement 13* Monitor and record data for the energy consumption described in criterion 12. *Requirement 14* Report the total carbon dioxide emissions (total kgCO/project value) from the construction process via BREEAM Projects (for the purposes of potential future BREEAM performance benchmarking). *Requirement 15* Water consumption Achieve criterion 10. *Requirement 16* Set targets for the potable water consumption (m) arising from the use of construction plant, equipment (mobile and fixed) and site accommodation. *Requirement 17* Monitor and record data for the potable water consumption described in criterion 16. *Requirement 18* Use the collated data to report the total net water consumption (m), i.e. consumption minus any recycled water use from the construction process via BREEAM Projects (for the purposes of potential future BREEAM performance benchmarking). *Requirement 19* Second monitoring credit - transportation of construction materials and waste Achieve criterion 10. *Requirement 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 cover: 1. Transportation of materials from the point of supply to the building site, including any transport, intermediate storage and point of supply (see Definitions). Monitor as a minimum: 1. Materials used in major building elements (i.e. those defined in BREEAM issue Mat 01 Environmental impacts from construction products - Building life cycle assessment (LCA)). 2. Ground works and landscaping materials. 2. 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. *Requirement 21* Monitor and record data for the transportation movements as described in criterion 20. *Requirement 22* Using the collated data, report separately for materials and waste, the total transport-related carbon dioxide emissions (kgCOeq), plus total distance travelled (km) via BREEAM Projects (for the purposes of potential future BREEAM performance benchmarking). Responsibility Contractor Evidence required at design stage: Contractor tender prelims **Two credits targeted**

e1	Responsible construction management	1	1	Criteria: *Requirement 23* Achieve all items in Table 4.1. Responsibility: Contractor Evidence required at design stage: Contractor tender prelims **One exemplary credit targeted**
Man 04 - Commissioning and handover				
	Credit	**Available**	**Current**	**Comments**
Pre-req	Prerequisite (Very Good to Outstanding)		✔	Criteria: Prior to handover, develop two building user guides (see Methodology) for the following users: 1. A non-technical user guide for distribution to the building occupiers 2. 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. Responsibility: Contractor MEP Evidence required at design stage: Contractor tender prelims **Pre-requisite requirement will be met**
1	Commissioning - testing schedule and responsibilities	1	1	Criteria: *Requirement 1* Prepare a schedule of commissioning and testing. The schedule 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. *Requirement 2* The schedule identifies the appropriate standards for all commissioning activities to be conducted, where applicable, in accordance with: 1. Current Building Regulations 2. BSRIA guidelines 3. CIBSE guidelines 4. Other appropriate standards (see Methodology) Exclude from the assessment any process or manufacture-related equipment specified as part of the project. However, include such equipment in cases where they form an integral part of the building HVAC services, such as some heat recovery systems. *Requirement 3* Where a building management system (BMS) is specified: 1. Carry out commissioning of air and water systems when all control devices are installed, wired and functional 2. Include physical measurements of room temperatures, off-coil temperatures and other key parameters, as appropriate, in commissioning results 3. The BMS or controls installation should be running in auto with satisfactory internal conditions prior to handover 4. All BMS schematics and graphics (if BMS is present) are fully installed and functional to user interface prior to handover 5. Fully train the occupier or facilities team in the operation of the system. *Requirement 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. *Requirement 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. Responsibility: MEP Contractor Evidence required at design stage: Commissioning programme MEP specifications Contractor tender prelims **One credit targeted**
2	Commissioning - design and preparation	1	1	Criteria: *Requirement 6* Achieve criteria 1-5. *Requirement 7* During the design stage, the client or the principal contractor appoints an appropriate project team member (see criterion 4), provided they are not involved in the general installation works for the building services systems, with responsibility for: 1. Undertaking design reviews and giving advice on suitability for ease of commissioning 2. Providing commissioning management input to construction programming and during installation stages 3. 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 (see Definitions). Responsibility: Client/Contractor Evidence required at design stage Appointment letter of specialist commissioning manager by Client/contractor Commissioning programme MEP specifications Contractor tender prelims **One credit targeted**
3	Testing and inspecting building fabric	1	0	Criteria: *Requirement 8* Achieve criteria 1-5. *Requirement 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 air tightness testing and a thermographic survey). A suitably qualified professional (see Definitions) undertakes the survey and testing in accordance with the appropriate standard. *Requirement 10* Rectify any defects identified during post-construction testing and inspection prior to building handover and close out. Any remedial work meets the required performance characteristics for the building or element as defined at the design stage (see Methodology). Responsibility: Contractor Evidence required at design stage: Contractor tender prelims Confirmation of appointment fo Thermography survey specialist **This credit is targeted as potential**

4	Handover	1	1	Criteria: *Requirement 11* Prior to handover, develop two building user guides (see Methodology) for the following users: 1. A non-technical user guide for distribution to the building occupiers 2. 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. *Requirement 12* Prepare two training schedules timed appropriately around handover and proposed occupation plans for the following users: 1. A non-technical training schedule for the building occupiers 2. A technical training schedule for the premises facilities managers. Responsibility Contractor Evidence required at design stage : Contractor tender prelims **One credit targeted**
Man 05 - Aftercare				
	Credit	**Available**	**Current**	**Comments**
1	Aftercare support	1	1	Criteria: *Requirement 1* Provide aftercare support to the building occupiers through having in place operational infrastructure and resources. This includes as a minimum: 1. 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: 1. Introduce the aftercare support available, including the building user guide (where existing) and training schedule and their content. 2. 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. 2. On-site facilities management training including: 1. A walkabout of the building AND 2. Introduction to and familiarisation with the building systems, their controls and how to operate them in accordance with the design intent and operational demands. 3. Provide initial aftercare support for at least the first month of building occupation, e.g. weekly attendance on-site, to support building users and management (the level of frequency will depend on the complexity of the building and building operations). 4. Provide longer term aftercare support for occupiers for at least the first 12 months from occupation, e.g. a helpline, nominated individual or other appropriate system to support building users and management. *Requirement 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. Responsibility: Contractor/Client Evidence required at design stage: Contractor tender prelims for compliance with criteria 1 Letter of commitment from Client/Contractor for complaince with criteria 2 at design stage **One credit targeted**
2	Commissioning - implementation	1	1	Criteria: *Requirement 3* Complete the following commissioning activities over a minimum 12-month period, once the building becomes substantially occupied: 1. Complex systems: The specialist commissioning manager will: 1. Identify changes made by the owner or operator that might have caused impaired or improved performance 2. Test all building services under full load conditions, i.e. heating equipment in mid-winter, cooling and ventilation equipment in mid-summer and under part load conditions (spring and autumn) 3. Where applicable, carry out testing during periods of extreme (high or low) occupancy 4. Interview building occupants (where they are affected by the complex services) to identify problems or concerns regarding the effectiveness of the systems 5. Produce monthly reports comparing sub-metered energy performance to the predicted one (see Ene 01 Reduction of energy use and carbon emissions) 6. Identify inefficiencies and areas in need of improvement 7. 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. Responsibility: Client/Contractor Evidence required at design stage: Letter of commitment from Client/Contractor to confirm seasonal commissioning manager will be appointed Contractor tender prelims where applicable **One credit targeted**
3	Post occupancy evaluation (POE)	1	1	Criteria: *Requirement 4* The client or building occupier commits to carry out a POE exercise (see Definitions) one year after the building is substantially occupied. This gains comprehensive in-use performance feedback (see criterion 5.b.v) 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. *Requirement 5* An independent party (see Definitions) carries out the POE covering: 1. A review of the design intent and construction process (review of design, procurement, construction and handover processes) 2. Feedback from a wide range of building users including facilities management on the design and environmental conditions of the building covering: 1. Internal environmental conditions (light, noise, temperature, air quality) 2. Control, operation and maintenance 3. Facilities and amenities 4. Access and layout 5. Energy and water consumption (see criterion 2 and Methodology) 6. Other relevant issues, where appropriate (see Definitions). *Requirement 6* The independent party provides a report with lessons learnt to the client and building occupiers. *Requirement 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 criterion 5. Evidence of the appointment of the independent party and schedule of responsibilities which fulfils the BREEAM criteria are acceptable to demonstrate compliance. Responsibility: Client Evidence required at design stage : Letter of commitment from Client/Contractor to confirm Post Occupancy evaluation will take place to meet BREEAM criteria **One credit targeted**
		21	19	**Standard Management Credit Total**
		1	1	**Exemplary Management Credit Total**
		11.92	10.88	**% Management Total (Standard + Exemplary)**
Health & Wellbeing				
Hea 01 - Visual comfort				
	Credit	**Available**	**Current**	**Comments**

1	Control of glare from sunlight	1	1	Criteria: *Requirement 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. *Requirement 2* Where risk has been identified within a relevant building area (Definitions on page 85 of BREEAM 2018 Guidance), a glare control strategy is used to design out the potential for glare. *Requirement 3* The glare control strategy does not increase energy consumption used for lighting. This is achieved by: 1. Maximising daylight levels in all weather, cloudy or sunny AND 2. Ensuring the use or location of shading does not conflict with the operation of lighting control systems. Responsibility: Architect Electrical engineer Client Contractor Evidence required at design stage: Glare control strategy for relevant areas being affected by glare (Those areas that have been designed to contain or use workstations- Reception areas , flexible office spaces) Blind specification/ manufacturers details Architectural specification Compliance note from electrical engineer that glare control strategy does not increase energy consumption used for lighting. Contractor tender prelims **One credit targeted**
2	Daylighting (building type dependent)	1	0	**Credit not targeted**
3	View out	1	0	Credit targeted as potential
4	Internal and external lighting levels, zoning and control	1	1	Criteria: *Requirement 7* Internal lighting 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[32] and any other relevant industry standard. Internal lighting should be appropriate to the tasks undertaken, accounting for building user concentration and comfort levels. *Requirement 8* For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Guide 7[33] sections 2.4, 2.13 to 2.15, 2.20, and 6.10 to 6.20. This gives recommendations highlighting: 1. Limits to the luminance of the luminaires to avoid screen reflections. (Manufacturers data for the luminaires should be sought to confirm this.) 2. 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. 3. Recommendations for direct lighting, ceiling illuminance, and average wall illuminance. *Requirement 9* External lighting 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[34] and BS EN 12464-2:2014[35] Light and lighting - Lighting of work places - Part 2: Outdoor work places. External lighting should provide illuminance levels that enable users to perform outdoor visual tasks efficiently and accurately, especially during the night. *Requirement 10* Where no external light fittings are specified (either separate from or mounted on the external building faade or roof), the criteria relating to external lighting do not apply and the credit can be awarded on the basis of compliance with criteria 78.c above. If no internal lighting is specified, the credit cannot be awarded. *Requirement 11* Zoning and occupant control Internal lighting is zoned to allow for occupant control. Zoning is in accordance with the criteria below for relevant areas present within the building: 1. In office areas, zones of no more than four workplaces 2. Workstations adjacent to windows or atria and other building areas separately zoned and controlled 3. Seminar and lecture rooms: zoned for presentation and audience areas 4. Library spaces: separate zoning of stacks, reading and counter areas 5. Teaching space or demonstration area 6. Whiteboard or display screen 7. Auditoria: zoning of seating areas, circulation space and lectern area 8. Dining, restaurant, caf areas: separate zoning of servery and seating or dining areas 9. Retail: separate zoning of display and counter areas 10. Bar areas: separate zoning of bar and seating areas 11. Wards or bedded areas: zoned lighting control for individual bed spaces and control for staff over groups of bed spaces 12. Treatment areas, dayrooms, waiting areas: zoning of seating and activity areas and circulation space with controls accessible to staff. *Requirement 12* Areas used for teaching, seminar or lecture purposes have lighting controls provided in accordance with CIBSE Lighting Guide 5[36]. *Requirement 13* In addition, the building type criteria in Table 5.7 (where relevant). Responsibility: MEP Engineer Contractor Evidence required at design stage: Electrical Spec covering BREEAM requirements Electrical drawings showing the location of internal lighting Confirmation that the lighting design complies with CIBSE lighting Guide 7. Lumainaire schedule and lighting schedule Compliance letter to be signed by electrical engineer to demostarte BREEAM compliance. Credit targeted
e1	Daylighting (building type dependent)	1	0	**Credit not targeted**
e2	Internal and external lighting levels, zoning and control	1	0	**Credit not targeted**
Hea 02 - Indoor air quality				
	Credit	**Available**	**Current**	**Comments**

Pre-req	Prerequisite - Indoor air quality (IAQ) plan		✔	Criteria: *Requirement 1* A site-specific indoor air quality plan has been produced and implemented in accordance with the guidance in Guidance Note GN06. The objective of the plan is to facilitate a process that leads to design, specification and installation decisions and actions that minimise indoor air pollution during occupation of the building. The indoor air quality plan must consider the following: 1. Removal of contaminant sources 2. Dilution and control of contaminant sources 3. Procedures for pre-occupancy flush out 4. Third party testing and analysis 5. Maintaining good indoor air quality in-use. 6. Any relevant local authority plans or policies (for example, Air Quality Management Areas or Local Air Quality Action Plans) Responsibility: Contractor, PM , Client Evidence required at design stage Indoor Air Quality Plan Contractor tender prelims **Credit targeted**
1	Ventilation	1	0	Credit not targeted.
2	Emissions from construction products	2	2	Criteria: *Requirement 3* One credit Three out of the five product types meet the emission limits, testing requirements and any additional requirements listed in Table 5.11. 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. *Requirement 4* Two credits All of the product types listed meet the emission limits, testing requirements and any additional requirements listed in Table 5.11. Responsibility: Architect Contractor Evidence required at design stage Completed Hea 02: Indoor air quality proforma Architectural specifications Manufacturer's literature confirming testing standards and emissions achieved. Contractor tender prelims **Two credits targeted**
3	Post-construction indoor air quality measurement	1	0	Criteria: *Requirement 5* The formaldehyde concentration in indoor air is measured post construction (but pre-occupancy) and does not exceed 100βg/m averaged over 30 minutes (World Health Organisation guidelines for indoor air quality: Selected pollutants, 2010). *Requirement 6* The formaldehyde sampling and analysis is performed in accordance with ISO 16000-2 and ISO 16000-3. *Requirement 7* The total volatile organic compound (TVOC) concentration in indoor air is measured post construction (but pre-occupancy) and does not exceed 500βg/m over 8 hours. *Requirement 8* The TVOC sampling and analysis is performed in accordance with ISO 16000-5 and ISO 16000-6 or ISO 16017-1. *Requirement 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. *Requirement 10* The measured concentration levels of formaldehyde (βg/m) and TVOC (βg/m) are reported, via the BREEAM Scoring and Reporting Tool. Responsibility: Contractor Evidence required at design stage Testing results/ report detailing the results for the testing for formaldehyde and TCOC's and confirmation of compliance with the recomemndations to mitigate non compliance during testing as noted in the Indoor Air Quality Plan **Credit targeted as potential**
e1	Minimising sources of air pollution - Emissions from construction products	1	0	**Credit not targeted.**

Hea 04 - Thermal comfort

	Credit	Available	Current	Comments
1	Thermal modelling	1	1	Criteria: *Requirement 1* Thermal modelling has been carried out using software in accordance with CIBSE AM11[179] Building Energy and Performance Modelling. *Requirement 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). *Requirement 3* The modelling demonstrates that: 1. 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 Environmental design[80], Table 1.5; or other appropriate industry standard (where this sets a higher or more appropriate requirement or level for the building type); or the thermal environment in occupied spaces meet the Category B requirements for PPD, PMV and local discomfort set out in Table A.1 of Annex A of ISO 7730:2005. 2. For naturally ventilated buildings: 1. 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 (where this sets a higher or more appropriate requirement or level for the building type). 2. 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: The limits of thermal comfort: avoiding overheating in European buildings[81] or CIBSE TM59: Design methodology for the assessment of overheating risk in homes[82]. *Requirement 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. Responsibility: Energy specialist Evidence required at design stage : Thermal comfort report **Credit targeted**

2	Design for future thermal comfort	1	0	Criteria: *Requirement 5* Criteria 1-4 are achieved. *Requirement 6* The thermal modelling demonstrates that the relevant requirements set out in criterion 3 are achieved for a projected climate change environment (see Definitions). *Requirement 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. *Requirement 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. Responsibility: Energy specialist Evidence required at design stage: Thermal comfort report (Design for future thermal comfort) **Credit targeted as potential.**
3	Thermal zoning and controls	1	1	Criteria: *Requirement 9* Criteria 1-4 are achieved. *Requirement 10* The thermal modelling analysis (criteria1-4) has informed the temperature control strategy for the building and its users. *Requirement 11* The strategy for proposed heating or cooling systems demonstrates that it has addressed the following: 1. 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 2. 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: 1. User knowledge of building services 2. Occupancy type, patterns and room functions (and therefore appropriate level of control required) 3. 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. 4. 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) 3. 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 4. The need or otherwise for an accessible building user actuated manual override for any automatic systems. Responsibility: Mechanical engineer Evidence required at design stage: Thermal comfort report Thermal zoning drawings Letter of compliance from Mechanical engineer Contractor tender prelims **Credit targeted**
Hea 05 - Acoustic performance				
	Credit	**Available**	**Current**	**Comments**
1	Acoustic performance	3	3	Criteria: *Requirement 1* The building meets the appropriate acoustic performance standards and testing requirements defined in the relevant table. These tables define criteria for the acoustic principles of: 1. Sound insulation 2. Indoor ambient noise level 3. Room acoustics. **OR** *Requirement 2* A suitably qualified acoustician (SQA) is appointed to define a bespoke set of performance requirements for all function areas in the building. The bespoke performance requirements use the three acoustic principles defined in criterion Hea 05 Acoustic performance - criterion 1, setting out the performance requirements for each and the testing regime required. Responsibility PM Acoustician Contractor Evidence required at design stage: BREEAM compliant Acoustic report (Recieved) Contractor tender prelims to include pre- completing testing requirements **Three credits targeted**
Hea 06 - Security				
	Credit	**Available**	**Current**	**Comments**
1	Security of site and building	1	1	Criteria: *Requirement 1* A Suitably Qualified Security Specialist (SQSS) conducts an evidence based Security needs Assessment (SNA) during or prior to Concept Design. 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. *Requirement 2* The SQSS develops a set of security controls and recommendations for incorporation in to the proposals. Those controls shall directly relate to the threats and assets identified in the preceding SNA. *Requirement 3* The recommendations shall be incorporated into proposals and implemented in the as-built development. Any deviation from those recommendations shall be justified and agreed with the SQSS. Responsibility: Security Consultant PM Architect Engineer Evidence required at design stage: Security needs assessment (SNA) /SABRE report carried out at RIBA Stage 2 Qualifications of suitably qualified security specialist Design drawings and specifications to confirm recommendations from SNA report are included Contractor tender prelims **One credit targeted**

e1	Security of site and building	1	0	Criteria: *Requirement 4* A compliant risk based security rating scheme has been used. The performance against the scheme has been confirmed by independent assessment and verification. Responsibility: Security Consultant PM Architect Engineer Evidence required at design stage: Security needs assessment (SNA) /SABRE report carried out at RIBA Stage 2 Qualifications of suitably qualified security specialist Design drawings and specifications to confirm recommendations from SNA report are included Contractor tender prelims **Credit targeted as potential**
Hea 07 - Safe and healthy surroundings				
	Credit	**Available**	**Current**	**Comments**
1	Safe access	1	0	Criteria: *Requirement 1* Where external site areas form part of the assessed development the following apply: Dedicated and safe cycle paths are provided from the site entrance to any cycle storage, and connect to offsite cycle paths where applicable. *Requirement 2* Dedicated and safe footpaths are provided on and around the site providing suitable links for the following: 1. The site entrance to the building entrance 2. Car parks (where present) to the building entrance 3. The building to outdoor space, and 4. Connecting to off-site paths where applicable. *Requirement 3* Pedestrian drop off areas are designed off of, or adjoining to, the access road and should provide direct access to other footpaths. *Requirement 4* Where vehicle delivery access and drop-off areas form part of the assessed development, the following apply: Delivery areas are not accessed through general parking areas and do not cross or share the following: 1. Pedestrian and cyclist paths 2. Outside amenity areas accessible to building users and general public. *Requirement 5* There is a dedicated parking or waiting area for goods vehicles with appropriate separation from the manoeuvring area and staff and visitor car parking. *Requirement 6* 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. Responsibility: Architect Evidence required at design stage: Marked up drawings showing dedicated footpahts from the site entrance to any cycle storage, and connection to off cycle paths where applicable. Drawings must also show that delivery areas are not accessed through general parking areas and do not cross or share pedestrain and cyclist paths and any outside amenity areas accessible to building users or the general public. **Credit targeted as potential**
2	Outside space	1	0	Criteria: *Requirement 7* There is an outside space providing building users with an external amenity area. Responsibility: Architect Landscape Architect Evidence required at design stage: Drawings **Credit targeted as potential**
		17	10	**Standard Health & Wellbeing Credit Total**
		4	0	**Exemplary Health & Wellbeing Credit Total**
		17.94	8.20	**% Health & Wellbeing Total (Standard + Exemplary)**
Energy				
Ene 01 - Reduction of energy use and carbon emissions				
	Credit	**Available**	**Current**	**Comments**
1	Energy performance	9	4	Criteria Calculate an Energy Performance Ratio for New Constructions (EPR NC). Compare the EPR NC achieved with the benchmarks in Table 6.1 and award the corresponding number of BREEAM credits. Responsbility: Energy specialist MEP engineer Evidence required at design stage. inp files and as desgned BRUKL reports **4 credits targeted for this issue as a minmum compliance for Excellent rating. Two credist targeted as potential credits.**

2	Prediction of operational energy consumption	4	4	Criteria: *Requirement 2* Involve relevant members of the design team in an energy design workshop focusing on operational energy performance (see Methodology). *Requirement 3* Undertake additional energy modelling during the design and post-construction stage to generate predicted operational energy consumption figures (see Prediction of operational energy consumption). *Requirement 4* Report predicted energy consumption targets by end use, design assumptions and input data (with justifications). *Requirement 5* Carry out a risk assessment to highlight any significant design, technical, and process risks that should be monitored and managed throughout the construction and commissioning process. Responsibility: MEP engineer Evidence required at design stage: Workshop minutes Agreed outcomes Operational Energy Report/ Model Predicted energy consumption values, design assumptions, input data and risk assessments report. Confirmation of suitably qualified energy modeller's qualifications and experience. **Four credits targeted**
e1	Beyond zero net regulated carbon - - Exemplary level criteria	2	0	Credits not targeted.
e2	Carbon negative - Exemplary level criteria	3	0	**Credits not targeted**
e3	Post-occupancy evaluation of operational energy consumption - Exemplary level criteria	2	0	
Ene 02 - Energy monitoring				
	Credit	**Available**	**Current**	**Comments**
1	Sub-metering of end use categories	1	1	Criteria: *Requirement 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 (see Methodology). *Requirement 2* Meter the energy consumption in buildings according to the total useful floor area: 1. If the area is greater than 1,000m, by end-use category with an appropriate energy monitoring and management system 2. If the area is less than 1,000m, use either: 1. an energy monitoring and management system or 2. separate accessible energy sub-meters with pulsed or other open protocol communication outputs, for future connection to an energy monitoring and management system (see Definitions). *Requirement 3* Building users can identify the energy consuming end uses, for example through labelling or data outputs. Responsibility: MEP engineer Contractor Evidence required at design stage : MEP specification Schematics showing energy sub metering locations Letter of compliance signed by the MEP engineer Contractor tender prelims **One credit targeted**
2	Sub-metering of high energy load and tenancy areas	1	1	Criteria: *Requirement 4* Monitor a significant majority of the energy supply with: 1. An accessible energy monitoring and management system for: 1. tenanted areas or 2. relevant function areas or departments in single occupancy buildings. OR 2. Separate accessible energy sub-meters with pulsed or other open protocol communication outputs for future connection to an energy monitoring and management system for: 1. tenanted areas or 2. relevant function areas or departments in single occupancy buildings. *Requirement 5* Sub-meter per floor plate in large single occupancy or single tenancy buildings with one homogeneous function, for example hotel bedrooms, offices. Responsibility: MEP engineer Contractor Evidence required at design stage MEP specification Schematics showing energy sub metering locations Letter of compliance signed by the MEP engineer Contractor tender prelims **One credit targeted**
Ene 03 - External Lighting				
	Credit	**Available**	**Current**	**Comments**

1	External lighting	1	1	Criteria: *Requirement 1* No external lighting (which includes lighting on the building, at entrances and signs). *Requirement 2* External light fittings within the construction zone with: 1. Average initial luminous efficacy of no less than 70 luminaire lumens per circuit Watt 2. Automatic control to prevent operation during daylight hours 3. Presence detection in areas of intermittent pedestrian traffic. Responsibility: Electrical engineer Evidence required at design stage Electrical specification Luminare schedule Lighting drawings Letter of compliance signed by engineer Contractor tender prelims **One credit targeted**
Ene 04 - Low carbon design				
	Credit	**Available**	**Current**	**Comments**
1	Passive design	2	1	**One credit - Passive design analysis** 1. Achieve the first credit Hea 04 Thermal comfort: One credit - Thermal modelling to demonstrate that the building design delivers appropriate thermal comfort levels in occupied spaces. 2. The project team analyses the proposed building design and development during Concept Design to identify opportunities for the implementation of passive design measures (see Passive design analysis). 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. 4. Quantify the reduced total energy demand and carbon dioxide (CO_2-eq) emissions resulting from the passive design measures. Evidence required at design stage Passive design analysis report completed at concept stage Thermal comfort report This credits is required to achieve the four credits targeted under Ene 01 - Prediction of operational energy consumption **One credit targeted**
2	Low and zero carbon technologies	1	1	Criteria: *Requirement 9* An energy specialist (see Definitions) completes a feasibility study (see Low and zero carbon feasibility study) by the end of the Concept Design. *Requirement 10* Establish the most appropriate recognised local (on site or near site) low or zero carbon (LZC) energy sources for the building or development (see Scope of LZC systems and how they are assessed), based on the feasibility study. *Requirement 11* Specify local LZC technologies for the building or development in line with the feasibility study recommendations. *Requirement 12* Quantify the reduced regulated carbon dioxide (CO) emissions resulting from the feasibility study. Evidence required at design stage: BREEAM compliant LZC Report Contractor tender prelims **One credit targeted**
Ene 06 - Energy efficient transportation systems				
	Credit	**Available**	**Current**	**Comments**
1	Energy consumption	1	1	Criteria: *Requirement 1* For specified lifts, escalators or moving walks (transportation types): 1. Analyse the transportation demand and usage patterns for the building to determine the optimum number and size of lifts, escalators or moving walks 2. Calculate the energy consumption in accordance with BS EN ISO 25745 Part 2[132] or Part 3[132] for one of the following: 1. At least two options for each transportation type (e.g. for lifts, hydraulic, traction or machine roomless (MRL)) OR 2. At least two options considering different system arrangements and control strategies. 3. Consider the use of regenerative drives, subject to the requirements in Regenerative drives on the next page 4. Specify the transportation system with the lowest energy consumption. Responsibility: Lift engineer Evidence Required: Transportation Analysis determining the optimum number and size of equipment. Lift specifications. Manufacturer's literature. Contractor tender prelims **One credit targeted**
2	Energy efficient features	1	1	Criteria: *Requirement 2* Achieve criteria 1. *Requirement 3* Specify the following three energy efficient features for each lift: 1. A standby condition for off-peak periods 2. 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 3. Use of a drive controller capable of variable speed, variable-voltage, and variable-frequency (VVVF) control of the drive motor. *Requirement 4* Specify regenerative drives where their use is demonstrated to save energy. Responsibility: MEP Lift engineer Evidence Required: Transportation Analysis determining the optimum number and size of equipment. Lift specifications. Manufacturer's literature. Contractor tender prelims **Two credits targeted**
		21	15	**Standard Energy Credit Total**
		7	0	**Exemplary Energy Credit Total**

		22.96	11.40	**% Energy Total (Standard + Exemplary)**
Transport				
Tra 01 - Transport assessment and travel plan				
	Credit	**Available**	**Current**	**Comments**
1	Travel plan	2	2	Criteria: *Requirement 1* No later than Concept Design stage, undertake a site-specific transport assessment (or develop a travel statement) and draft travel plan, which can demonstrably be used to influence the site layout and built form; see Methodology. *Requirement 2* The site-specific travel assessment (or statement) shall cover as a minimum: 1. If relevant, travel patterns and attitudes of existing building or site users towards cycling, walking and public transport, to identify relevant constraints and opportunities. 2. Predicted travel patterns and transport impact of future building or site users. 3. Current local environment for pedestrians and cyclists, accounting for any age-related requirements of occupants and visitors. 4. Reporting of the number and type of existing accessible amenities, see Table 7.1 below, within 500m of the site. 5. Disabled access accounting for varying levels and types of disability, including visual impairment. 6. Calculation of the existing public transport Accessibility Index (AI), see Methodology on the facing page. 7. Current facilities for cyclists. *Requirement 3* Following a transport assessment (in accordance with the requirements set out in requirement 2), develop a site-specific travel plan that provides a long term management strategy which encourages more sustainable travel. The travel plan includes measures to increase or improve more sustainable modes of transport and movement of people and goods during the building's operation see Methodology. *Requirement 4* If the occupier is known, involve them in the development of the travel plan. *Requirement 5* Demonstrate that the travel plan will be implemented and supported by the building's management in operation. Responsibility: Transport Consultant Evidence required at design stage: Transport Assessment/ Statement (Received) Travel Plan Transport assessment and Travel plan will be submitted as planning deliverable. **Two credits targeted**
Tra 02 - Sustainable transport measures				
	Credit	**Available**	**Current**	**Comments**
Pre-req	Pre-requisite		✔	Criteria: *Requirement 1* Achieve requirements 3-5 in the Tra 01 Transport assessment and travel plan credit. Responsibility: Transport Consultant Evidence required at design stage : Transport Assessment/ Statement Travel Plan Transport assessment and Travel plan will be submitted as planning deliverable. **Pre-requisite criteria is met**
1	Transport options implementation	10	2	Criteria: *Requirement 2* Identify the sustainable transport measures, see Table 7.4. *Requirement 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. Responsibility: Transport Consultant Architect Client Notes Site has a PTAL of 3 Targeted two points Provide electric recharging stations of a minimum of 7kW for at least 10% of the total car parking capacity for the development (1 point) Install compliant cycle storage spaces to meet the minimum levels (1 point) 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 (Potential point- With the New Barnet Cross station being fully operational during practical complation additional one point may be achieved to increase the Accessibility Index of the site) Evidence required at design stage Drawings and PTAL report **Two points targeted. One point targeted as potential**
		12	4	**Standard Transport Credit Total**
		0	0	**Exemplary Transport Credit Total**
		9.96	3.32	**% Transport Total (Standard + Exemplary)**
Water				
Wat 01 - Water consumption				
	Credit	**Available**	**Current**	**Comments**

1	Water consumption	5	3	Criteria: *Requirement 1* Use the BREEAM Wat 01 calculator to assess the efficiency of the domestic water-consuming components. *Requirement 2* Use the standard Wat 01 method (see Methodology) to compare the water consumption (L/person/day) for the assessed building against a baseline performance. Award BREEAM credits based upon Table 8.1. Where it is not possible to use the standard method, complete the assessment using the alternative Wat 01 method (see Methodology). *Requirement 3* If a greywater or rainwater system (see Definitions) is specified, use its yield in L/person/day to offset potable water demand from components. *Requirement 4* If a greywater or rainwater system is specified and installed: 1. Greywater systems in compliance with BS 8525-1:2010 Greywater Systems - Part 1 Code of Practice 2. Rainwater systems in compliance with BS 8515:2009+A1:2013 Rainwater Harvesting Systems - Code of practice or for BREEAM NC 2018 V2.0 use BS EN 16941-1:2018. Achieve Wat 02 criterion 6, if you intend to pursue a post occupancy stage certification. Requirement 5 and 6 not applicable. Responsibility: MEP Evidence required at design stage: Sanitaryware Schedule complete with flow rates and flush volumes. Manufacturer's literature for all sanitary ware Contractor tender prelims Architecture specifications Wat 01 proforma Wat 01 calculator tool **Three credits targeted**
e1	Water consumption	1	0	**Credit not targeted**
Wat 02 - Water monitoring				
	Credit	**Available**	**Current**	**Comments**
Pre-req	Prerequisite (Good to Outstanding)		✔	Criteria: *Requirement 0* Specify a water meter on the mains water supply to each building. This includes instances where water is supplied via a borehole or other private source. Responsibility: MEP Notes- There is no water consuming systems which consumes more than 10% of the water demand Evidence Required: Signed compliance letter by engineer Schematics Specifications Contractor tender prelims **Pre-requisite will be met**
1	Water monitoring	1	1	Criteria: *Requirement 1* Specify a water meter on the mains water supply to each building. This includes instances where water is supplied via a borehole or other private source. *Requirement 2* For water-consuming plant or building areas consuming 10% or more of the buildings total water demand: 1. Fit easily accessible sub-meters, OR 2. Install water monitoring equipment integral to the plant or area. *Requirement 3* For each meter (main and sub): 1. Install a pulsed or other open protocol communication output, AND 2. Connect it to an appropriate utility monitoring and management system, e.g. a building management system (BMS), for the monitoring of water consumption. If there is no BMS system in operation at Post-Construction stage, award credits provided that the system used enables connection when the BMS becomes operational. *Requirement 4* In buildings with swimming pools, or large water tanks and aquariums, fit separate sub-meters on the water supply of the above and any associated changing facilities (toilets, showers etc.) irrespective of their water consumption levels. *Requirement 5* In buildings containing laboratories, fit a separate water meter on the water supply to any process or cooling loop for plumbed-in laboratory process equipment, irrespective of their water consumption levels. *Requirement 6 (If pursuing a post-occupancy stage certification)* The water monitoring strategy used enables the identification of all water consumption for sanitary uses as assessed under Wat 01 (L/person/day), if a post occupancy stage certification is sought. Responsibility: MEP Notes- There is no water consuming systems which consumes more than 10% of the water demand Evidence Required: Signed compliance letter by engineer Schematics Specifications Contractor tender prelims **One credit targeted**
Wat 03 - Water leak detection				
	Credit	**Available**	**Current**	**Comments**

1	Leak detection system	1	1	Criteria: *Requirement 1* Install a leak detection system capable of detecting a major water leak: 1. On the utilities water supply within the buildings, to detect any major leaks within the buildings AND 2. Between the buildings and the utilities water supply, to detect any major leaks between the utilities supply and the buildings under assessment. *Requirement 2* The leak detection system is: 1. A permanent automated water leak detection system that alerts the building occupants to the leak OR an inbuilt automated diagnostic procedure for detecting leaks 2. 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 3. 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 4. Programmable to suit the owner's or occupier's water consumption criteria 5. Where applicable, designed to avoid false alarms caused by normal operation of large water consuming plant such as chillers. Where there is physically no space for a leak detection system between the utilities water meter and the building, alternative solutions can be used, provided that a major leak can still be detected. Responsibility: MEP Evidence Required: Signed compliance letter by engineer Schematics Specifications Contractor tender prelims **One credit targeted**
2	Flow control devices	1	1	Criteria: *Requirement 3* Install flow control devices that regulate the supply of water to each WC area or facility according to demand, in order to minimise undetected wastage and leaks from sanitary fittings and supply pipework. Responsibility: MEP Evidence Required: Signed compliance letter by engineer Schematics Specifications Contractor tender prelims **One credit targeted**
		8	6	**Standard Water Credit Total**
		1	0	**Exemplary Water Credit Total**
		8.04	5.28	**% Water Total (Standard + Exemplary)**

Materials

Mat 01 - Environmental impacts from construction products - Building life cycle assessment (LCA)

	Credit	Available	Current	Comments
1	Superstructure	6	4	Criteria: *Requirement 1* **Comparison with the BREEAM LCA benchmark during Concept Design (offices, industrial and retail buildings only)** Superstructure (offices, industrial and retail buildings (except for Simple Buildings and where Notes 1.1 and 1.2 apply) During the Concept Design, demonstrate the environmental performance of the building as follows: 1. Carry out a building LCA on of the superstructure design using either the BREEAM Simplified building LCA tool or an IMPACT Compliant LCA tool according to the methodology (see Methodology). 2. Submit the Mat 01/02 Results Submission Tool to BRE at the end of Concept Design, and before planning permission is applied for (that includes external material or product specifications). *Requirement 2* **Comparison with the BREEAM LCA benchmark during Technical Design (offices, industrial and retail buildings only)** During Technical Design, demonstrate the environmental performance of the building as follows: 1. As requirement 1.a 2. Submit the Mat 01/02 Results Submission Tool to BRE at the end of Technical Design. Where a project has not achieved requirement 1, requirement 2 may still be achieved. *Requirement 3* **Option appraisal during Concept Design (all building types)** For offices, industrial and retail building types, achieve criterion 1 (except where Notes 1.0, 1.1 and 1.2 apply). *Requirement 4* During Concept design, identify opportunities for reducing environmental impacts as follows: 1. Carry out building LCA options appraisal of 2 to 4 significantly different superstructure design options (applicable to the Concept Design stage, see Methodology). 2. Use a building LCA tool that is recognized by BREEAM (as suitable for assessing superstructure during Concept Design) according to the methodology (see Methodology). 3. For each design option, fulfil the same functional requirements specified by the client and all statutory requirements (to ensure functional equivalency). 4. Integrate the LCA options appraisal activity within the wider design decision-making process. Record this in an options appraisal summary document. 5. Record the following in the Mat 01/2 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. 6. Submit the Mat 01/02 Results Submission Tool to BRE at the end of Concept Design, and before planning permission is applied for (that includes external material or product specifications). If the building LCA tool recognised by BREEAM used for requirements 3 to 5 (and 6 to 9, if pursued) is not an IMPACT Compliant LCA tool and requirements 1 to 2 are applicable, then the BREEAM Simplified building LCA tool (or an IMPACT Compliant LCA tool) shall be used for requirements 1 to 2. *Requirement 5* **Options appraisal during Technical Design (all building types)** During Technical Design identify opportunities for reducing environmental impacts as follows: 1. 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 stage, see Methodology). 2. Use a building LCA tool that is recognized by BREEAM (as suitable for assessing superstructure during Technical Design) according to the methodology (see Methodology). 3. As requirements 4.c to 4.e above. Where an options appraisal summary document was produced during Concept Design, update it to include the Technical Design options. 4. Submit the Mat 01/02 Results Submission Tool to BRE at the end of Technical Design. Where a project has not achieved requirements 3 and 4, requirement 5 may still be achieved. Responsibility: Carbon consultant Architect Structural engineer Design team Evidence required at concept and design stage: The Mat 01/02 Results submission tool- date stamped with BRE at concept stage The options appraisal summary document Evidence that the LCA options appraisal summary document has been received by the deisgn team and client (meeting minutes, letter of acknowledgement). Evidence of how the LCA design options have informed the decision-making process (e.g. meeting minutes, documented design develop showing how the LCA options have affected the design). **Four credits targeted**

2	Substructure and hard landscaping options appraisal during Concept Design (all building types)	1	1	Criteria: *Requirement 6* Requirements 3 and 4 are achieved. *Requirement 7* During Concept Design identify opportunities for reducing environmental impacts as follows: 1. 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) 2. Using a building LCA tool that is recognized by BREEAM (as suitable for assessing substructure and hard landscaping during Concept Design) according to the methodology (see Methodology). 3. As requirements 4.c to 4.f above. Responsibility: Architect/Landsacpe architect Carbon Consultant Evidence required at concept and design stage : The LCA options appraisal summary document includes substructure and hard landscaping according to the requirements. The Mat 01/02 Results submission tool- date stamped with BRE at concept stage Evidence that the LCA options appraisal summary document has been received by the deisgn team and client (meeting minutes, letter of acknowledgement). Evidence of how the LCA design options have informed the decision-making process (e.g. meeting minutes, documented design develop showing how the LCA options have affected the design). **One credit targeted**
e1	Core building services options appraisal during Concept Design (all building types)	1	0	Criteria: *Requirement 8* Requirements 3 to 4 are achieved. *Requirement 9* During Concept Design identify opportunities for reducing environmental impacts as follows: 1. Carry out building LCA options appraisal of at least 3 significantly different core building services design options. 2. Use a building LCA tool that is recognized by BREEAM (as suitable for assessing core building services during Concept Design) according to the methodology (see Methodology). 3. As requirements 4.c to 4.f. Responsibility: Carbon Consultant MEP engineeer Evidence Required: The LCA options appraisal summary document includes core building services according to the criteria. The Mat 01/02 Results submission tool- date stamped with BRE at concept stage Evidence that the LCA options appraisal summary document has been received by the deisgn team and client (meeting minutes, letter of acknowledgement). Evidence of how the LCA design options have informed the decision-making process (e.g. meeting minutes, documented design develop showing how the LCA options have affected the design). **One credit targeted as potential credit**
e2	LCA and LCC alignment (all building types)	1	1	**LCA and LCC alignment** **Criteria** 10. Achieve criteria 3 to 5. 11. Achieve Elemental LCC plan and Component Level LCC options appraisal credits (Man 02 Life cycle cost and service life planning). 12. Include design options appraised for criteria 3 to 4 (and 6 to 7 and 8 to 9, if pursued) during Concept Design in Man 02 Life cycle cost and service life planning: 2 The elemental LCC plan: . 13. Include the design options appraised for criterion 5 during Technical Design in the 'Component level LCC option appraisal' (in Man 02 Life cycle cost and service life planning). 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. Responsibility Carbon consultant Design team Evidence required at design stage LCA and LCC alignment report **One credit targeted**
e3	Third party verification (all building types) - Exemplary level criteria	1	0	Criteria: *Requirement 15* Requirements 1 to 7 (as applicable to the building type) are achieved. *Requirement 16* A suitably qualified third party (see Definitions) either carries out the building LCA work or verifies the building LCA work (if by others), and produces a report describing how they have checked the building LCA work accurately represent the designs under consideration during Concept Design and Technical Design with reference to the requirements of requirements 1 to 7 (and 8 to 14 if pursued). *Requirement 17* For each LCA option, itemise in the report the checks made by the suitably qualified third party including, as a minimum, the quality requirements shown in Table 9.4. *Requirement 18* Include details of the suitably qualified third party's relevant skills and experience and a declaration of their third party independence from the project client and design team in the report. Responsibility: Carbon Consultants Evidence Required: Verifying that building LCAs accurately represent the designs under considerations. Itemising the findings of their verification checks. Evidence that the requirements of a Suitably qualified third party are fulfiled. **Credit targeted as potential credit**
Mat 02 - Mat 02 Environmental impacts from construction products - Environmental Product Declarations (EPD)				
	Credit	**Available**	**Current**	**Comments**
1	Specification of products with a recognised environmental product declaration (EPD)	1	1	Criteria: *Requirement 1* Specify construction products with EPD that achieve a total EPD points score of at least 20, according to the methodology. *Requirement 2* Enter the details of each EPD into the Mat 01/02 Results Submission Tool, including the material category classification. The Mat 01/02 Results Submission Tool will verify the EPD points score and credit award. Responsibility: Contractor Evidence required at design stage: The Mat 01/02 Results Submission tool. Copies of EPD certificates. Contractor tender prelims **Credit targeted**
Mat 03 - Responsible sourcing of construction products				
	Credit	**Available**	**Current**	**Comments**

Pre-req	Prerequisite		✔	Criteria: *Requirement 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) (189) (see Definitions). Compliance with requirement 1 is a minimum requirement for achieving any BREEAM rating. There are no prerequisite requirements for other materials. Responsibility: Contractor Architect Notes : Timber is specified in the partitions installed in the reception area . All timber will be FSC certified. Evidence required at design stage: Contractor tender prelims **Pre-requisite criteria will be met**
1	Enabling sustainable procurement	1	1	Criteria: *Requirement 2* A sustainable procurement plan must be used by the design team to guide specification towards sustainable construction products. The plan must: 1. Be in place before Concept Design. 2. Include sustainability aims, objectives and strategic targets to guide procurement activities. Note: targets do not need to be achieved for the credit to be awarded but justification must be provided for targets that are not achieved. 3. Include a requirement for assessing the potential to procure construction products locally. There must be a policy to procure construction products locally where possible. 4. Include details of procedures in place to check and verify the effective implementation of the sustainable procurement plan. In addition, if the plan is applied to several sites or adopted at an organisational level it must: 5. Identify the risks and opportunities of procurement against a broad range of social, environmental and economic issues following the process set out in BS ISO20400:2017[170]. Responsibility: Contractor /Client Evidence required at design stage: Sustainable Procurement Plan **One credit targeted**
2	Measuring responsible sourcing	3	2	Criteria: *Requirement 3* Use the Mat 03 calculator tool and methodology to determine the number of credits achieved for the construction products specified or procured. Credits are awarded in proportion to the scope of the assessment and the number of points achieved, as set out in Table 9.10. Responsibility: Architect Sustainability Consultant Evidence required at design stage Contractor tender prelims Completed and signed Mat 03 proforma by design team to include quantities, manufacturers details and reference to resposible sourcing certificates Mat 03 calculator tool Responsible sourcing certificates **Two credits targeted**
e1	Measuring responsible sourcing	1	0	**Credit not targeted**

Mat 05 - Designing for durability and resilience				
	Credit	**Available**	**Current**	**Comments**
1	Protecting vulnerable parts of the building from damage/material degradation	1	1	Criteria: *Requirement 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 buildings fabric or materials in case of accidental or malicious damage occurring. These measures must provide protection against: 1. Negative impacts of high user numbers in relevant areas of the building (e.g. corridors, lifts, stairs, doors etc.). 2. Damage from any vehicle or trolley movements within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas. 3. External building fabric damage by a vehicle. Protection where parking or manoeuvring areas are within 1 metre of the building faade and where delivery areas or routes are within 2 metres of the faade, i.e. specifying bollards or protection rails. 4. Potential malicious damage to building materials and finishes, in public and common areas where appropriate. *Requirement 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. This can be demonstrated through one of the following: 1. The element or product achieving an appropriate quality or durability standard or design guide. See Table 9.14. If none are available, use BS 7543:2015[172] as the default appropriate standard OR 2. A detailed assessment of the element's resilience when exposed to the applicable material degradation and environmental factors. *Requirement 3* Include convenient access to the roof and faade for cost effective cleaning, replacement and repair in the building's design. *Requirement 4* Design the roof and faade to prevent water damage, ingress and detrimental ponding. See Table 9.14 for an example list of relevant industry durability and quality standards. Responsibility: Architect Evidence required at design stage: Marked up plans and drawings identifying vulnerable areas of the building internally and externally. Drawings showing protection measures incorporated to protect damage. Schedule or proforma identifying measures to protect from material degradation **One credit targeted**

Mat 06 - Material efficiency				
	Credit	**Available**	**Current**	**Comments**

1	Material efficiency	1	1	Criteria: *Requirement 1* At the Preparation and Brief and Concept Design stages, set targets and report on opportunities and methods to optimise the use of materials. These must be done for each of the following stages. See Table 9.15. 1. Preparation and Brief 2. Concept Design 3. Developed Design 4. Technical Design 5. Construction *Requirement 2* Develop and record the implementation of material efficiency, see Table 9.15, during 1. Developed Design 2. Technical Design 3. Construction *Requirement 3* Report the targets and actual material efficiencies achieved. Responsibility: Architect Structural engineer MEP engineer Evidence required at design stage: Contractor tender prelims Completed Mat 06 proforma to record material effcieny targets and opportunities at all RIBA Stages Supporting evidence such as specifications, reports , drawings, sketches etc **One credit targeted**
		14	11	**Standard Materials Credit Total**
		4	1	**Exemplary Materials Credit Total**
		18.98	12.77	**% Materials Total (Standard + Exemplary)**

Waste

Wst 01 - Construction waste management

	Credit	Available	Current	Comments
1	Pre-demolition audit	1	1	Criteria: *Requirement 1* Complete a pre-demolition audit of any existing buildings, structures or hard surfaces being considered for demolition. This must be used to determine whether refurbishment or reuse is feasible and, in the case of demolition, to maximise the recovery of material for subsequent high grade or value applications. The audit must cover the content of Pre-demolition audit scope on page 262 and: 1. Be carried out at Concept Design stage by a competent person (see Definitions) prior to strip-out or demolition works 2. Guide the design, consider materials for reuse and set targets for waste management 3. Engage all contractors in the process of maximising high grade reuse and recycling opportunities. *Requirement 2* Make reference to the audit in the resource management plan (RMP) (see Definitions). *Requirement 3* Compare actual waste arisings and waste management routes used with those forecast and investigate significant deviations from planned targets. Responsibility: Evidence required at design stage: Contractor tender prelims Pre Demolition Audit Resource management plan from demolition contractor recording actual waste **One credit targeted**
2	Construction resource efficiency	3	2	Criteria: *Requirement 4* Prepare a compliant Resource Management Plan (RMP) covering: 1. Non-hazardous waste materials (from on-site construction and dedicated off-site manufacture or fabrication, see Definitions), including demolition and excavation waste 2. Accurate data records on waste arisings and waste management routes. *Requirement 5* Meet or improve upon the benchmarks in Table 10.1 for non-hazardous construction waste, excluding demolition and excavation waste. Responsibility: Contractor Evidence required at design stage: Contractor tender prelims Resource Management Plan to include the Wst 01 resource efficiency targets **Two credits targeted** (Achieve <6.6 tonnes of waste per 100m2 or less) . One credit targeted as potential credit.
3	Diversion of resources from landfill	1	1	Criteria: *Requirement 6* Meet, where applicable, the diversion from landfill benchmarks in Table 10.2 for non-hazardous construction waste and demolition and excavation waste generated. *Requirement 7* Sort waste materials into separate key waste groups as per Table 10.35, either on-site or through a licensed contractor for recovery. Responsibility: Contractor Evidence required at design stage: Contractor tender prelims Resource Management Plan to include the Wst 01 diversion of waste from landfill targets **One credit targeted** (90% diversion for demolition waste and 80% diversion for non demolition waste)
e1	Construction resource efficiency/Diversion of resources from landfill	1	0	**Credit not targeted.**

Wst 02 - Use of recycled and sustainably sourced aggregates

	Credit	Available	Current	Comments
Pre-req	Prerequisite		✔	**N/A - Credit not targeted**
1	Project Sustainable Aggregate points	1	0	**Credit not targeted**
e1	Project Sustainable Aggregate points	1	0	**Credit not targeted.**

Wst 03 - Operational waste

	Credit	Available	Current	Comments

1	Operational waste	1	1	Criteria: *Requirement 1* Provide a dedicated space for the segregation and storage of operational recyclable waste generated. The space is: 1. Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams 2. Accessible to building occupants or facilities operators for the deposit of materials and collections by waste management contractors 3. Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily or weekly operational activities and occupancy rates. *Requirement 2* For consistent and large amounts of operational waste generated, provide: 1. Static waste compactors or balers; situated in a service area or dedicated waste management space 2. Vessels for composting suitable organic waste OR adequate spaces for storing segregated food waste and compostable organic material for collection and delivery to an alternative composting facility 3. A water outlet provided adjacent to or within the facility for cleaning and hygiene purposes where organic waste is to be stored or composted on site. Responsibility: Client Architect Evidence required at design stage: Drawings demonstrating the location of the waste storage Confirmation of type and volume of waste streams Labelling of bins on drawings to show waste streams Drawing showing water outlet in waste area Waste deposition and collection startegy **One credit targeted**
Wst 05 - Adaptation to climate change				
	Credit	**Available**	**Current**	**Comments**
1	Resilience of structure, fabric, building services and renewables installation	1	1	Criteria: *Requirement 1* Conduct a climate change adaptation strategy appraisal using: 1. A systematic risk assessment to identify the impact of expected extreme weather conditions arising from climate change on the building over its projected life cycle. The assessment covers the installation of building services and renewable systems, as well as structural and fabric resilience aspects and includes (see Methodology): 1. Hazard identification 2. Hazard assessment 3. Risk estimation 4. Risk evaluation 5. Risk management. *Requirement 2* Develop recommendations or solutions based on the climate change adaptation strategy appraisal, during or prior to Concept Design, that aim to mitigate the identified impact. *Requirement 3* Provide an update during Technical Design demonstrating how the recommendations or solutions proposed at Concept Design have been implemented where practical and cost effective. Omissions have been justified in writing by the assessor. Responsibility: Architect Structural engineer MEP engineer Evidence Required: Climate Change Adaption Strategy Appraisal Stage 2 and propose recomendations for implementation at design stage Climate Change Adaption Strategy Appraisal Stage 4- Demostrate how the recommendations or solutions proposed at Concept Design have been implemented where practical and cost effective. Omissions have been justified in writing by the assessor. Supporting reports, drawings etc **One credit targeted**
e1	Responding to climate change	1	0	**Targeted as potential credit**
Wst 06 - Design for disassembly and adaptability				
	Credit	**Available**	**Current**	**Comments**
1	Design for disassembly and functional adaptability - recommendations	1	1	Criteria: *Requirement 1* Conduct a study to explore the ease of disassembly and the functional adaptation potential of different design scenarios (see Methodology) by Concept Design. *Requirement 2* Develop recommendations or solutions (see Functional adaptation implementation) based on the study (criterion 1 above), during or prior to Concept Design, that aim to enable and facilitate disassembly and functional adaptation. Responsibility: Architect Structural engineer MEP engineer Evidence required at RIBA Stage 2 : Disassembly and Functional Adaptability Study, Develop recommendations or solutions that aim to enable and facilitate disassembly and functional adaptation. Supporting drawings, specifications and reports **One credit targeted**
2	Disassembly and functional adaptability – implementation	1	1	Criteria: *Requirement 3* Achieve requirements 1 and 2. *Requirement 4* Provide an update, during Technical Design, on: 1. How the recommendations or solutions proposed by Concept Design have been implemented where practical and cost effective. Omissions have been justified in writing to the assessor. 2. Changes to the recommendations and solutions during the development of the Technical Design. *Requirement 5* Produce a building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants. **Responsibility** Architect Structural engineer MEP engineer Evidence required at RIBA Stage 4 : Confirmation that the recommendations or solutions proposed by Concept Design have been implemented where practical and cost effective. Omissions have been justified in writing to the assessor. Changes to the recommendations and solutions during the development of the Technical Design. Building adaptability and disassembly guide to communicate the characteristics allowing functional adaptability and disassembly to prospective tenants. Supporting drawings, reports and specifications **One credit targeted**
		10	8	**Standard Waste Credit Total**
		3	0	**Exemplary Waste Credit Total**
		9	4.80	**% Waste Total (Standard + Exemplary)**
Land Use & Ecology				

LE 01 - Site selection				
	Credit	**Available**	**Current**	**Comments**
1	Previously occupied land	1	1	Criteria: *Requirement 1* At least 75% of the proposed development is on previously occupied land (see Definitions). Responsibility: Architect Evidence required at design stage Existing Site Drawing Proposed Site Drawing **One credit targeted**
2	Contaminated land	1	0	**Credit not targeted**
LE 02 - Ecological risks and opportunities				
	Credit	**Available**	**Current**	**Comments**
Pre-req	Prerequisite - Statutory obligations		✔	Criteria: *Requirement 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. Responsibility: Ecologist Landscape architect Client Evidence required at design stage: Ecology report **Pre-requisite criteria will be met**
1	Survey and evaluation/Determining ecological outcomes	2	2	Criteria: *Requirement 2* **Foundation route (Route 1)** The site is evaluated using the BREEAM Ecological Risk Evaluation Checklist (Guidance Note 34) confirming that the Foundation route can be used (see Methodology and Definitions). *Requirement 3* **Comprehensive route (Route 2)** A Suitably Qualified Ecologist (SQE) carries out a survey and evaluation (see Methodology) for the site early enough to influence site preparation works, layout and, where necessary, strategic planning decisions (typically Preparation and brief stage) (see Definitions). *Requirement 4* The SQEs survey and evaluation determines the sites ecological baseline (see Definitions), including: 1. Current and potential ecological value and condition of the site and related areas within the Zone of Influence. 2. Direct and indirect risks to current ecological value from the project. 3. Capacity and feasibility for enhancement of the site's ecological value and, where relevant, areas within the Zone of Influence. *Requirement 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 (see Methodology and Definitions). *Requirement 6* **Foundation and Comprehensive routes (Routes 1 and 2)** Survey and evaluation criteria relevant to the chosen route (criterion 2 if following the Foundation route or Criteria 35 above for the Comprehensive route). *Requirement 7* The project team liaise and collaborate with representative stakeholders (see Methodology) early enough to influence key planning decisions (typically Concept Design stage), to: 1. Identify the optimal ecological outcomes for the site. 2. Identify, appraise and select measures to meet the optimal ecological outcomes for the site (criterion a), in line with the mitigation hierarchy of action, according to the route being used (see Definitions). Responsibility: Ecologist Client Landscape Architect Evidence required at design stage A copy of the Ecological Survey and Evaluation document (PEA for planning completed)- Received as part of planning deliverable BREEAM compliant ecologist report Proposed landscape plan Proposed planting schedule **Two credits targeted**
e1	Wider site sustainability - Exemplary level criteria	1	0	Credit not targeted.
LE 03 - Managing impacts on ecology				
	Credit	**Available**	**Current**	**Comments**
Pre-req	Prerequisite – Ecological risks and opportunities		✔	Criteria: *Requirement 1* LE 02's 'Survey and evaluation and Determining ecological outcomes criteria have been achieved using the Foundation route (Route 1) or the Comprehensive route (Route 2). Responsibility Ecologist Evidence required at design stage BREEAM compliant ecology report **Three credits targeted**

1	Planning and measures on-site	1	1	Criteria: *Requirement 2* **Foundation and comprehensive route (Routes 1 and 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). *Requirement 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). *Requirement 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). Responsibility: Landscape Architect Contractor Ecologist Evidence required at design stage BREEAM compliant ecology report Landscape proposals **One credit targeted**
2	Managing negative impacts	2	2	Criteria: *Requirement 5* **Foundation route (Route 1) (one credit)** Criteria 2 and 3 have been achieved. *Requirement 6* Negative impacts from site preparation and construction works are managed according to the mitigation hierarchy (see Methodology on the facing page) and no overall loss (see Definitions) of ecological value has occurred. *Requirement 7* **Comprehensive route (Route 2) (up to two credits)** Criteria 2-4 have been achieved. *Requirement 8* Negative impacts from site preparation and construction works have been managed according to the mitigation hierarchy, in line with the SQE's recommendations (see Methodology) and, either: 1. No overall loss of (see Definitions) ecological value has occurred (two credits). OR where criterion a is not possible: 2. The loss of ecological value has been minimised (Minimising Loss) (one credit) Responsibility: Contractor Ecologist Landscape Architect Evidence required at design stage: BREEAM compliant Ecologist Calculations and report **Two credits targeted**
LE 04 - Ecological change and enhancement				
	Credit	**Available**	**Current**	**Comments**
Pre-req	Prerequisite - Managing negative impacts on ecology		✔	Criteria: *Requirement 1* Criterion 6 (for Foundation route) or 8 (for Comprehensive route) in LE 03 has been achieved. *Requirement 2* The client or contractor confirms compliance is monitored against all relevant UK, EU or international legislation relating to the ecology of the site. Responsibility: Ecologist Client Contractor Evidence required at design stage: BREEAM compliant Ecologist report **Pre-requisite criteria will be met**
1	Change and enhancement of ecology / Ecological enhancement	1	1	**Comprehensive route (Route 2) only** 4. 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: 4.a: On site, and where this is not feasible, 4.b: Off site within the Zone of Influence. 5. Data collated are analysed and where potentially valuable, provided to the local environmental records centres nearest to, or relevant for, the site. Responsibility: Ecologist Client Contractor Evidence required at design stage: BREEAM compliant Ecologist report Landscape proposals and drawings **One credit targeted**
2	Change and enhancement of ecology	3	2	Criteria: *Requirement 6* **Comprehensive route (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. Responsibility: Ecologist Landscape Architect Evidence required at design stage: BREEAM compliant Ecologist report Landscape proposals and drawings **Two credits targeted**
e1	Change and enhancement of ecology - Exemplary level criteria	1	0	**Credit not targeted.**
LE 05 - Long term ecological management and maintenance				

	Credit	Available	Current	Comments
Pre-req	Prerequisite - Statutory obligations, planning and site implementation		✔	Criteria: *Requirement 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. *Requirement 2* The following must be achieved, according to the route being assessed: 1. Foundation route (Route 1) - Criterion 6 in LE 03 has been achieved. 2. 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. Responsibility: Client Contractor Ecologist Evidence required at design stage: BREEAM compliant ecologist report Contractor tender prelims Landscape drawings **Pre-requisite criteria will be met**
1	Management and maintenance throughout the project / Landscape and ecology management plan	2	2	Criteria: *Requirement 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. *Requirement 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. *Requirement 5* A Landscape and Ecology Management Plan, or equivalent, has been developed in accordance with BS 42020:2013 Section 11.1 covering at least the first five years after project completion as a minimum and including: 1. Actions and responsibilities of relevant individuals prior to handover 2. The ecological value and condition of the site at handover and how this is expected to develop and change over time 3. Identification of opportunities for ongoing alignment with activities beyond the development project, which support the aims of BREEAM's Strategic Ecology Framework 4. Identification and guidance to trigger appropriate remedial actions to address previously unforeseen impacts 5. Clearly defined and allocated roles and responsibilities for delivering the plan *Requirement 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). Responsibility: Landscape Architect Ecology Client Evidence required at design stage: Landscape and ecology management plan BREEAM compliant ecologist report Contractor tender prelims Landscape drawings **Two credits targeted**
		13	11	**Standard Land Use & Ecology Credit Total**
		2	0	**Exemplary Land Use & Ecology Credit Total**
		15	11	**% Land Use & Ecology Total (Standard + Exemplary)**
Pollution				
Pol 01 - Impact of refrigerants				
	Credit	**Available**	**Current**	**Comments**

1	Impact of refrigerants	3	1	Criteria: *Requirement 1* **Three credits - No refrigerant use** No refrigerant use within the installed plant or systems. OR alternatively, where the building does use refrigerants, the three credits can be awarded as follows: *Requirement 2* **Prerequisite** All systems with electric compressors comply with the requirements of BS EN 378:2008[211] (parts 2 and 3). Refrigeration systems containing ammonia comply with the Institute of Refrigeration Ammonia Refrigeration Systems code of practice[212]. *Requirement 3* **Impact of refrigerant** **Two credits** The direct effect life cycle CO equivalent emissions (DELC) of 100 $kgCO_e$/kW. For systems which provide cooling and heating, the worst performing output based on the lower of kW cooling output and kW heating output is used to complete the calculation. To calculate the DELC refer to the relevant definitions in the Methodology below and Additional information sections. OR *Requirement 4* 4 Refrigerants used have a Global Warming Potential (GWP) 10. OR *Requirement 5* **One credit** Systems using refrigerants have DELC of 1000 $kgCO_e$/kW cooling and heating capacity. *Requirement 6* **One credit - Leak detection** All systems are hermetically sealed or only use environmentally benign refrigerants. See Leak detection and Hermetically sealed systems OR *Requirement 7* Where the systems are not hermetically sealed. 1. Systems have: 1. A permanent automated refrigerant leak detection system, that is robust and tested and capable of continuously monitoring for leaks. OR 2. An inbuilt automated diagnostic procedure for detecting leakage is enabled. 2. 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 (see Automatic isolation and containment of refrigerant on) Responsibility: MEP Contractor Evidence requried at design stage: Mechanical/Services Spec Statement from Mechanical/Services Engineer Manufacturers technical data sheet Completed copy of the Pol 01 Calculator tool. Documentary evidence supporting the data used to complete the calculator tool. Manufacturers technical data sheet for installed units Contractor tender prelims **One credit targeted** (Impact of refrigerant)

Pol 02 - Local air quality				
	Credit	**Available**	**Current**	**Comments**
1	Local air quality	2	2	Criteria: *Requirement 1* All heating and hot water is supplied by non-combustion systems. For example, only powered by electricity. OR alternatively; *Requirement 2* Emissions from all installed combustion plant that provide space heating and domestic hot water do not exceed the levels set in Table 12.4 and Table 12.5. Responsibility: MEP Contractor Evidence Required: Contractor tender prelims Mechanical Specification M&E drawings showing location of the electric heating and ASHP Make and model of boiler Manufacturers technical data sheet **Two credits targeted**

Pol 03 - Flood and surface water management				
	Credit	**Available**	**Current**	**Comments**
1	Flood resilience	2	1	Criteria: *Requirement 1* **Prerequisite** An appropriate consultant is appointed to carry out and demonstrate the development's compliance with all criteria. *Requirement 2* **Two credits - Low flood risk** 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 (see Sources of flooding). *Requirement 3* **One credit - Medium or high flood risk** 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 (see Sources of flooding). For smaller sites refer to Level of detail required in the FRA for smaller sites, which overrides requirement 2. *Requirement 4* To increase the resilience and resistance of the development to flooding, one of the following must be achieved: 1. The ground level of the building and access to both the building and the site, are designed (or zoned) so they are at least 600mm above the design flood level of the site's flood zone (see 600mm threshold). 2. 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 BS8533:2017[218]. Responsibility: Drainage/ Flood Risk Consultant Evidence required at design stage Flood risk report (Received) **One credit targeted**

2	Surface water run-off	2	2	Criteria: *Requirement 5* **Prerequisite for surface water run-off credits** 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. The priority levels detailed in the Methodology must be followed, with justification given by the appropriate consultant where water is allowed to leave the site. *Requirement 6* **One credit - Surface Water Run-Off - Rate** For brownfield sites, 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 predeveloped site. This should comply at the 1-year and 100-year return period events. *Requirement 7* For Greenfield sites, drainage measures are specified so that the peak rate of run-off from the site to the watercourses (natural or municipal) is no greater for the developed site than it was for the pre-development site. This should comply at the 1-year and 100-year return period events. *Requirement 8* Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified Sustainable Drainage Systems (SuDS) are in place. *Requirement 9* Calculations include an allowance for climate change. This should be made in accordance with current best practice planning guidance (see Definitions). *Requirement 10* **One credit - Surface Water Run-Off - Volume** 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 EITHER *Requirement 11* 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 sites development. This must be for the 100-year 6-hour event, including an allowance for climate change (see requirement 15). *Requirement 12* Any additional predicted volume of run-off for this event is prevented from leaving the site by using infiltration or other SuDS techniques. OR (only where requirements 11 and 12 cannot be achieved): *Requirement 13* Justification from the appropriate consultant indicating why the above criteria cannot be achieved, i.e. where infiltration or other SuDS techniques are not technically viable options. *Requirement 14* 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: 1. The pre-development one-year peak flow rate 2. The mean annual flow rate (Qbar) 3. 2L/s/ha. *Requirement 15* For the one-year peak flow rate, the one-year return period event criterion applies. Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS are in place. *Requirement 16* For either option, above calculations must include an allowance for climate change; this should be made in accordance with current best practice planning guidance. Responsibility: Flood Risk/ Drainage Consultant Evidence required at design stage: BREEAM compliant surface water run-off report **One credit targeted** Criteria: *Requirement 5* **Prerequisite for surface water run-off credits** 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. The priority levels detailed in the Methodology must be followed, with justification given by the appropriate consultant where water is allowed to leave the site. *Requirement 6* **One credit - Surface Water Run-Off - Rate** For brownfield sites, 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 predeveloped site. This should comply at the 1-year and 100-year return period events. *Requirement 7* For Greenfield sites, drainage measures are specified so that the peak rate of run-off from the site to the watercourses (natural or municipal) is no greater for the developed site than it was for the pre-development site. This should comply at the 1-year and 100-year return period events. *Requirement 8* Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified Sustainable Drainage Systems (SuDS) are in place. *Requirement 9* Calculations include an allowance for climate change. This should be made in accordance with current best practice planning guidance (see Definitions). *Requirement 10* **One credit - Surface Water Run-Off - Volume** 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 EITHER *Requirement 11* 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 sites development. This must be for the 100-year 6-hour event, including an allowance for climate change (see requirement 15). *Requirement 12* Any additional predicted volume of run-off for this event is prevented from leaving the site by using infiltration or other SuDS techniques. OR (only where requirements 11 and 12 cannot be achieved): *Requirement 13* Justification from the appropriate consultant indicating why the above criteria cannot be achieved, i.e. where infiltration or other SuDS techniques are not technically viable options. *Requirement 14* 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: 1. The pre-development one-year peak flow rate 2. The mean annual flow rate (Qbar) 3. 2L/s/ha. *Requirement 15* For the one-year peak flow rate, the one-year return period event criterion applies. Relevant maintenance agreements for the ownership, long term operation and maintenance of all specified SuDS are in place. *Requirement 16* For either option, above calculations must include an allowance for climate change; this should be made in accordance with current best practice planning guidance. Responsibility: Drainage Consultant Evidence required at design stage: BREEAM compliant surface water run-off report Contractor tender prelims **One credit targeted**

3	Minimising watercourse pollution	1	0	**Credit not targeted**
Pol 04 - Reduction of night time light pollution				
	Credit	**Available**	**Current**	**Comments**
1	Reduction of night time light pollution	1	1	Criteria: *Requirement 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 alternatively, where the building does have external lighting, one credit can be awarded as follows: *Requirement 2* The external lighting strategy has been designed in compliance with Table 2 (and its accompanying notes) of the Institute of Lighting Professionals (ILP) Guidance notes for the reduction of obtrusive light, 2011[179]. *Requirement 3* All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00. *Requirement 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. *Requirement 5* Illuminated advertisements are designed in compliance with ILP PLG05 The Brightness of Illuminated Advertisements[226]. Responsibility: MEP Evidence Required: Electrical Specification Signed letter of compliance Drawing showing location of all external lighting Contractor tender prelims **One credit awarded**
Pol 05 - Reduction of noise pollution				
	Credit	**Available**	**Current**	**Comments**
1	Reduction of noise pollution	1	1	**Criteria** Where there are noise-sensitive areas within the assessed building or noise-sensitive areas within 800 m radius of the assessed site, a noise impact assessment compliant with BS 4142:20141 is commissioned. Noise levels must be measured or determined for: 2.a: Existing background noise levels: 2.a.i at the nearest or most exposed noise-sensitive development to the proposed assessed site 2.a.ii including existing plant on a building, where the assessed development is an extension to the building 2.b: Noise rating level from the assessed building. 3 The noise impact assessment must be carried out by a suitably qualified acoustic consultant. 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 5 dB lower than the background noise throughout the day and night. 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. Responsibility Acoustician Evidence required at design stage Pol 5 Noise report (Received) **One credit targeted**
		12	8	**Standard Pollution Credit Total**
		0	0	**Exemplary Pollution Credit Total**
		8.04	5.36	**% Pollution Total (Standard + Exemplary)**
Innovation				
AI - Approved Innovation				
	Credit	**Available**	**Current**	**Comments**
e1	Approved innovations	1	0	
		0	0	**Standard Innovation Credit Total**
		1	0	**Exemplary Innovation Credit Total**
		1	0	**% Innovation Total (Standard + Exemplary)**

Appendix - Site assumptions (Project Info details)

Assessment Information	Selection
Building type (main description)	Industrial
Building Type sub-group	Industrial - Warehouse storage/distribution
Does this industrial building have an office area?	Yes
Assessment stage	Design (Interim)
Project scope	Fully Fitted
Building Net internal floor area m²	18000
Building Gross internal floor area m²	17900
Is the building designed to be untreated?	No
Building services - heating system type	Air system
Building services - cooling system type	Comfort cooling
Are commercial or industrial-sized refrigeration and storage systems specified?	No
Are building user lifts present?	Yes
Are building user transportation systems (escalators or moving walkways) present?	No
Are laboratories present?	No
Fume cupboard(s) and/or other containment devices	No
Are there any water demands present other than those assessed in Wat 01?	No
Does the building have external areas within the boundary of the assessed development?	Yes
Are there statutory requirements, or other issues outside of the control of the project, that impact the ability to provide outdoor space?	No
Are the Post-occupancy stage credits targeted in Ene 01 issue?	No
Is demolition occurring under the developer's ownership for the purpose of enabling the assessed development?	Yes
Are WC facilities only provided within the residential areas of a long-term residential accommodation?	N/A
Are there any systems specified that contribute to the unregulated energy load?	No
Is this a speculative development?	No

Is the project required to connect to a District Heating system, and it supplies all heating and hot water demands to the building?	No