

105 JUDD STREET LTD 105 Judd Street Sustainability Statement

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Norman Disney& Young A TETRA TECH COMPANY

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RECORD OF REVISION

Revision	Date	Amendment Details	Revision prepared by	Revision Approved by
1.0	04/03/2022	Draft for comments	Andreas Alygizos / Emily Garrard	Alex Mitchell
2.0	17/03/2022	Updated to incorporate comments	Andreas Alygizos	Alex Mitchell
3.0	07/04/2022	Updated to include additional information	Andreas Alygizos	Alex Mitchell
4.0	13/04/2022	Planning issue	Andreas Alygizos	Alex Mitchell



EXECUTIVE SUMMARY

Norman Disney & Young (NDY) has been appointed by 105 Judd Street Ltd ('the Applicant') to produce a Sustainability Statement to support a full planning application to be submitted to Camden City Council.

The application relates to the refurbishment and new extension of the existing building at 105 Judd Street, Camden Town, London, WC1H 9NE ('the Site').

This application seeks planning permission for: "Partial demolition and erection of extension at part third floor, fourth floor, fifth floor and rooftop plant in connection with the ongoing use of the building for commercial, business and service uses (Class E); associated external alterations to the elevations, improvements to the public realm and replacement of the existing ramp; roof terraces at levels three, four and five; provision of cycle parking, waste/recycling storage and other services; associated external alterations."

The above will be henceforth referred as the 'Development'. The proposed Development includes the following land uses:

- Commercial, business and service uses (Class E): 8,905.4 (GIA)

This report should be read alongside the Design and Access Statement prepared by Stiff + Trevillion which is submitted in support of this planning application as standalone documents.

This Sustainability Statement sets out the environmental sustainability strategy for the Development. The key sustainability drivers for this project have been set in response to the national, Greater London Authority's (GLA) and Camden Planning Guidance.



Figure 1: Perspective view of the proposed scheme (Image: Stiff and Trevillion)

<u>Sustaina</u>bility

Sustainability has been a key aspect of the design of the proposed Development from the very early design stages. Environmentally sustainable measures have been integrated into the design and will be incorporated during the construction and operation of the proposed Development.

The proposed Development aims to establish itself as a highly sustainable building, satisfying the requirements of the adopted local and regional planning policy and exceed the standards set by Building Regulations, wherever it is technically, functionally and economically feasible. The design of the proposed Development has considered environmentally sustainable measures from nine thematic areas:

- Energy and CO₂ emissions;
- Water and surface run-off;
- Materials and Waste A circular economy approach;
- Pollution;
- Ecology;
- Health and Wellbeing:
- Management;
- Transport.

BREEAM

The sustainability credentials of the office areas of the proposed Development are also demonstrated by its assessment under BREEAM Scheme.

A BREEAM pre-assessment workshop was carried out and attended by all relevant design team members. The pre-assessment meeting concluded that a score of 74.6% can be achieved, which corresponds to a BREEAM "Excellent" rating, as shown in Figure 2 below. The outcomes of the BREEAM pre-assessment are presented in section 3 and Appendix B.

105 Judd Street - BREEAM Pre-assessment





1 INTRODUCTION

This Sustainability Statement has been prepared by Norman Disney & Young (NDY) on behalf of 105 Judd Street Ltd (the Applicant'), to support a full planning application for the refurbishment and new extension of 105 Judd Street.

Section 2 Planning policy requirements presents an overview of the relevant planning policy requirements related to environmental sustainability. The detailed planning policies that influence the sustainability strategies for the Development are presented in Appendix A.

The environmental performance of the proposed Development is also demonstrated by its assessment under the BREEAM scheme. The BREEAM pre-assessment results are presented in section 3 and the BREEAM pre-assessment checklist is included in Appendix B.

The sustainable design and construction measures proposed for the Development are presented in section 4 Sustainability Strategy.

2 PLANNING POLICY REQUIREMENTS

2.1 Current Planning Policy Framework

The planning policy documents which set out the environmental sustainability targets for the proposed Development are outlined below:

- National Planning Policy Framework (NPPF), published in February 2019;
- The London Plan 2021, published in March 2021;
- Greater London Authority (GLA) Energy Planning Guidance, published in October 2020;
- GLA Be Seen Energy Monitoring Guidance, version May 2020;
- GLA Guidance on Circular Economy Statements, version May 2020;
- Camden Local Plan, published 2017;
- Camden Planning Guidance (CPG) Energy Efficiency and Adaptation, published January 2021;
- Camden Planning Guidance (CPG) Air Quality, published January 2021;
- Camden Planning Guidance (CPG) Transport, published January 2021;
- Camden Planning Guidance (CPG) Water and Flooding, published January 2021;

A detailed review of the above-mentioned documents has been undertaken. The policies relating to environmental sustainability are provided in detail in Appendix A. The next section provides a summary of the key planning policy requirements that set performance targets in relation to environmental sustainability.

2.2 Summary of targets

Following a thorough review of the national, regional and local policy requirements the development proposes to address the environmental sustainability targets and objectives listed below as far as it relevant and practical.

Benchmarking



and adaptation (January 2021),

Energy and CO₂ Emissions



The proposed Development will aim to:

- Reduce CO₂ emissions following the Mayor's energy hierarchy to meet the net zero carbon target set by the London Plan 2021, Policy SI 2 (i.e. reduce CO₂ emissions by at least 35% over the to the local authorities).
- Prioritise passive design and energy efficiency (Be Lean) measures and aim to reduce CO₂ emissions by at least 15% over the baseline (notional) building via 'lean' measures only, in accordance with the London Plan 2021, Policy SI 2.
- Incorporate communal heating and cooling systems, in accordance with the GLA's Energy assessment Guidance.
- Incorporate renewable energy technologies, where feasible, in line with the Mayor's energy hierarchy.
- be developed near the site, in line with Policy SI3 of the London Plan 2021.
- unregulated energy) to meet the requirements of the 'Be Seen' Energy Monitoring Guidance.
- Incorporate monitoring equipment and systems to enable monitoring and reporting of the Monitoring Guidance.
- Undertake a Whole Life Cycle Carbon Assessment (WLCA) to estimate CO₂ emissions through the whole life cycle of the Development.
- Assess the feasibility of incorporating thermal storage, in accordance with GLA's Energy assessment Guidance.
- Assess the feasibility of incorporating demand response measures, GLA's Energy assessment Guidance.

Water and Surface Water Run-off



The proposed Development will aim to:

- buildings, in line with Policy SI5 of the London Plan 2021.
- Achieve the BREEAM 'Excellent' standard for the 'Wat 01' water category, in line with Policy SI5 of the London Plan 2021.
- Incorporate water meters to enable monitoring and efficient control of the building's water demand.
- Include Sustainable Urban Drainage Systems (SuDs) to reduce surface water run-off rates, if feasible, in line with Policy SI13 of the London Plan 2021.
- Undertake a Flood Risk Assessment (FRA) in line with Policy SI12 of the London plan 2021.



Achieve a BREEAM "Excellent" rating in accordance with Policy CC2 Adapting to climate change of the Camden Local Plan, and Chapter 11 of the Camden Planning Guidance (GPG)-Energy efficiency

baseline emissions and offset the remaining regulated CO₂ emissions via cash-in-lieu contributions

Be designed with provision for future connectivity to district heating or cooling networks that may

Estimate the anticipated operational energy consumption of the building (including regulated and

building's energy consumption during operation to meet the requirements of the 'Be Seen' Energy

Prioritise the minimisation of potable water demand via water efficient fixtures and appliances in

Incorporate green roofs and/or blue roofs, in line with Policy G5 Urban greening of the London Plan 2021.

Sustainable Materials



The proposed Development will aim to implement the following, in accordance with Policy SI 7 of the London Plan 2021:

Promote circular economy and resource efficiency.

- Assess the potential to use pre-fabrication elements, use of existing resources and materials and minimise waste generated during the demolition and construction process through the implementation of waste hierarchy.
- Prioritise materials that have low embodied carbon, including those that can be reused or recycled.
- Prioritise sustainably sourced materials.
- Incorporate legally harvested and traded timber and timber-based products.
- Meeting or exceeding the recycling targets for each of the following waste streams and generating low-carbon energy in London from suitable remaining waste:
 - municipal waste 60 per cent by 2031

Ecology



- The proposed Development will incorporate measures to:
- Maintain and enhance the ecological value of the site, in line with Policy SI13 of the London Plan 2013.
- Incorporate planting and soft landscaping elements (including green roofs) aiming to increase the Urban Greening Factor (UGF) to achieve an UGF of 0.30 as far as practically possible, in line with Policy G5 of the London Plan 2021.
- Carry out ecological survey on-site to determine the ecological value of the existing site,
- Protect any features of ecological value existing on-site

Health and well-being



The proposed Development will incorporate measures to:

- Be a high quality, active, safe and accessible place and for new major developments to carry out a Health Impact Assessment (HIA) in line with Policy C1 of the Camden Local Plan (2017).
- Provide thermal comfort and avoid overheating risk in line with the cooling hierarchy, in accordance with Policy SI4 of the London Plan 2021,
- Provide high air quality levels to the building occupants and contribute to improved air quality for the surrounding area, in line with Policy SI1 of the London Plan 2021
- Be at least air quality neutral, in line with Policy SI1 of the London Plan 2021.

Pollution



The proposed Development will incorporate measures to:

- Minimise the generation of air pollution from and minimise and prevent increased exposure to poor air quality, in line with Policy SI1 of the London Plan 2021.
- Minimise air pollution during construction in line with Policy SI1 of the London Plan 2021.

Transport



The proposed Development will:

- Prepare a transport assessment, statement or note and Travel Plan in accordance with the requirements of the Camden Local Plan Policy A1 and section 3 of the Camden Planning Guidance (GPG)-Transport (January 2021) with the aim to:
- Encourage the use of sustainable means of transport with the aim to increase mode share. _ - Reduce the traffic generated by the development and non-essential car trips.
- Encourage good urban design principals.
- To ensure effective site management, to avoid any impacts associated with the construction activities and construction traffic,
- Enable regularised servicing through adoption of a delivery/servicing plan
- Provide secure and accessible cycle storage in line with the standards set by the London Plan 2021 and section 8 of the Camden Planning Guidance (GPG)-Transport (January 2021).



3 BENCHMARKING

The proposed Development aims to promote sustainability principles through the provision of a well-designed built environment and maximising the potential for energy efficiency for the proposed Development. The proposed office areas will be assessed under the BREEAM scheme. Given the nature of the Development which includes the refurbishment of an existing building and the construction of a new extension, the BREEAM Bespoke scheme is considered as the most suitable BREEAM scheme. This is recommended as:

- The existing building area is greater than 2,500m² and
- The new extension area is greater than 500m²

An application for a BREEAM Bespoke Refurbishment and New Construction assessment will be submitted to the BRE to develop the particular BREEAM criteria for the Development's assessment.

The assessment criteria from the below BREEEAM Refurbishment and fitout 2014 scheme have been acknowledged , based on the scope of works of the proposed Development, which will be delivered to a Cat A Standard:

- Part 1: Building Fabric
- Part 2: Core Services
- Part 3: Local Services

The BREEAM pre-assessment review indicates that the proposed Development is feasible to achieve a score of 74.6%, which corresponds to a BREEAM 'Excellent' rating, as shown in Figure 3. This offers a safety buffer of 4.6% to ensure that the BREEAM rating of 'Excellent' is achieved.

Figure 4 provides a summary overview of the number of credits of credits targeted in each BREEAM category against those available, whilst Appendix B provides a full breakdown of the BREEAM credits targeted credits and the credits which are not considered feasible for the proposed Development, reflecting the outcomes of the BREEAM pre-assessment.

105 Judd Street - BREEAM Pre-assessment



Figure 3: 105 Judd Street- BREEAM Pre-assessment score

105 Judd Street - BREEAM Pre-assessment scores



Figure 4: 105 Judd Street- BREEAM Pre-assessment score per section



4 SUSTAINABILITY STRATEGY

4.1 Introduction

The proposed sustainability strategy has been developed in response to the national, regional and local planning policy framework.

The following sections present the measures that have been incorporated in the design and will be implemented during the construction phase of the proposed Development.

4.2 Energy and CO₂ emissions

The proposed Development will be designed and constructed to minimise the CO_2 emissions associated with its operation, through energy efficiency measures and incorporation of low carbon technologies, in line with the Mayor's energy hierarchy:

- Be Lean: Use less energy and manage demand during operation.
- Be Clean: Exploit local energy resources and supply energy efficiently and cleanly.
- **Be Green**: Maximise opportunities for renewable energy by producing, storing and using renewable energy on-site.
- **Be Seen**: Monitor, verify and report on energy performance.

The energy strategy uses the new carbon factors (SAP 10) that were released in July 2018 in accordance with the London Plan (March 2021) and the GLA's Energy Assessment guidance (April 2020). These carbon factors will not be incorporated into Part L of the Building Regulations until the Government has concluded on Building Regulations updates. A new approved Building Regulations document for the conservation of fuel and power incorporating the updated carbon factors has been released in late 2021 and is expected to take effect in June 2022. Therefore, as per the Greater London Authority (GLA), the London plan and the GLA's Guidance document on energy strategies require planning applicants to use updated carbon emissions factors to assess the expected carbon performance of a new development.

The proposed energy strategy has been developed as an all-electric solution, without any gas or other fossil fuels supplied to site, to benefit the Development from the low carbon intensity of the grid-supplied electricity.

The proposed energy strategy meets and exceeds the targets set by Building Regulations by incorporating a combination of energy efficiency measures and low/zero carbon technologies as summarised below:

- Best practice building fabric properties for the new building elements beyond the standards set out in Building Regulations Approved Document L2B (AD L2B) 2010¹ and Approved Document L2A (AD L2A) 2013²;
- Replacement of the existing windows at the first to third floor with highly efficient double glazed units;
- High-efficiency mechanical ventilation with heat recovery throughout;
- Energy efficient light fittings and controls throughout;
- High efficiency VRF units to provide heating and cooling throughout;
- Energy meters and sub-meters to monitor, record and report the operational energy consumption of the various • end-uses for each land-use of the Development.
- High efficiency air source heat pumps (ASHPs) linked to a thermal storage tank to provide hot water to the end of • trip facilities;
- Point of use electric heaters to provide hot water to the toilet areas at ground floor and the upper levels. •

³ The baseline building performance has been calculated separately for the existing building under refurbishment and the new extension. For the existing building under refurbishment the baseline performance has been calculated following the guidance and notional specification for as shown in Appendix 4 of the GLA's Energy assessment guidance document (April 2020) which is based on Approved Documents L1B and L2B as well as the Government's 105 Judd Street | Sustainability Statement Report 6 of 18

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The feasibility of connecting the proposed Development to a district heating network has been explored. The Development is not feasible to be connected to a district heating network, as no existing local network has been identified in close proximity to the Site. Should a district heating network become available in the future within a viable distance from the Site, plant space will be provided to allow connection to future infrastructure with the main road.

It is also acknowledged that the proposed VRF system is incompatible with a connection to a DH network. However, taking into account the service life of the proposed system (15 - 20 years) and the absence of local networks currently, it is anticipated that future connection to a DH network could be accommodated in the future as part of a future refurbishment exercise.

Figure 5 in the next page illustrates the overall carbon emissions savings from the whole Development, following the energy hierarchy set out by the London Plan and the GLA's latest energy assessment guidance: Demand reduction (be lean approach), Heating infrastructure (be clean approach) and use renewable energy (be green approach) for the proposed Development.

It has been estimated that the area-weighted average cumulative savings for the refurbished and new-built areas of the Development will be 54.0% over the baseline building performance³.

This percentage reduction exceeds the minimum 35% reduction required by the London Plan, for compliance with the net zero-carbon target. The remaining regulated CO₂ emissions to reach the London Plan's net zero carbon target will be offset via cash-in-lieu contributions.

The carbon emissions reduction from the demand saving measures (Be Lean) has been calculated at 16.1% which significantly exceeds the 15% carbon emissions reduction target set by the London Plan.

The new extension areas of the proposed Development have been assessed separately, against Building Regulations Approved Document L2A (AD L2A) 2013, as stipulated by the GLA's Energy Assessment Guidance (April 2020). The results of the energy modelling demonstrated that the new extension areas achieve the below performance, based on the proposed energy strategy:

- > The new extension areas achieve a 21.8% reduction of CO₂ emissions over the AD L2A 2013 notional building from energy efficiency measures only ('Be Lean' case). This percentage reduction exceeds the minimum 15% target set by Policy SI2 of the London Plan.
- The new extension areas achieve an overall 36.6% reduction of CO₂ emissions over AD L2A 2013. This percentage reduction exceeds the minimum 35% reduction target set by Policy SI2 of the London Plan.

The refurbished areas of the proposed Development have been assessed separately, against Building Regulations Approved Document L2B (AD L2B) 2010 incorporating 2013 and 2016 amendments, as stipulated by the GLA's Energy Assessment Guidance (April 2020).

The results of the energy modelling demonstrated that the refurbished areas achieve the below performance, based on the proposed energy strategy:

- The refurbished areas achieve an overall 15% reduction of CO_2 emissions over the notional baseline from energy demand reduction measures ('Be Lean' case).
- The refurbished areas achieve a 58.0 % reduction of CO₂ emissions over the notional baseline. This percentage reduction exceeds the minimum 35% reduction target set by Policy SI2 of the London Plan.

Building services compliance Guidance. For the new extension areas, the baseline performance is considered the notional building of the 'Be Lean' Scenario. The energy performance improvement above the baseline has been based on the Energy model areas which are shown in the GLA reporting spreadsheet in Appendix F.



¹ Current version: 2010 version incorporating 2011, 2013 and 2016 amendments

² Current version AD L2A: 2013 editions incorporating 2016 amendments.



105 Judd Street - Whole building - Carbon Savings over Baseline CO₂ emissions

Figure 5: Overall carbon dioxide emissions at each stage of the energy hierarchy (Whole Development)

4.2.1 Operational energy

The Development will also incorporate energy meters and sub-meters to enable an appropriate level of monitoring of the energy consumption of the various end-uses of the Development. Operational energy modelling in accordance with CIBSE TM 54 has also been undertaken for the proposed Development, in response to the 'Be Seen' requirements of the Mayor's energy hierarchy. The results of the operational energy modelling are presented in detail in the Energy Statement produced by NDY for the Development, which is submitted in support of this planning application as a standalone document. The results indicated that the overall energy consumption of the proposed Development during operation is estimated between 108.6KWh/m²/year and 119.5kWh/m²/year, depending on the management strategy; as this is reflected in the management factors set by the CIBSE TM54 methodology. Figure 7 presents a breakdown of the energy consumption per end-use, for the different management factors. This breakdown highlights that small power is the end-use with the highest contribution to the building's overall energy consumption, followed by lighting. The energy consumption for lifts seem to have the lowest contribution to the building's overall consumption.

Currently, the London Plan 2021 does not impose performance targets for operational energy. According to Policy SI2 and the Be Seen Energy Monitoring Guidance (2020), the calculated operational energy performance is reported at planning application stage, as above. The development will also incorporate appropriate meters and sub-meter to monitor and report its energy consumption during operation in compliance with Policy SI2 and the Be Seen Energy Monitoring Guidance (2020).

105 Judd Street - Operational Energy Consumption breakdown by end use



Figure 6: Calculated operational energy consumption by end-use

4.2.2 Whole life cycle Assessment

A Whole Life Cycle Assessment (WLCA) has been undertaken by NDY for the proposed Development, in line with Policy SI2 of the London Plan 2021, which has been submitted in support of this planning application as a separate document. The purpose of the WLCA for the Development was to assess the carbon impacts of the Development through its whole life cycle. The outcomes of the WLCA for the Development are summarised below:

- The Whole life cycle impact (stages A-C) is estimated to be 9,577 tCO_{2e} over a 60-year period.
- The embodied carbon over the life cycle (stages A-C) of the project accounts for 6,300 tCO_{2e}, which corresponds to a carbon intensity (stages A-C, excluding B6 and B7) of 707 kgCO_{2e}/m².

The WCLA for the proposed Development has been undertaken in accordance with the RICS Professional Statement: Whole Life Carbon assessment for the built environment (referred to as the RICS PS for the remainder of this document)⁴ which is referenced throughout the GLA's Guidance document and covers the following life cycle modules:

- Module A1- A5: Product sourcing and construction stage
- Module B1-B7: Use stage
- Module C1-C4: End of life stage
- Module D: Benefits and loads beyond the system boundary.

The WLCA results of the Development have been compared against the GLA WLC benchmarks in accordance with the GLA Whole Life Cycle Assessment Guidance (October 2020). The proposed Development is expected to have a carbon impact 52.8% lower than the current WLC benchmark and a carbon value of 707kgCO₂/m². The development also compares better than the WLC aspirational benchmark, with a 21.4% decrease. The improvement in performance is due to the significant amount of structure that has been retained for this development.



⁴ RICS professional statement, Whole life carbon assessment for the built environment, 1st edition (November 2017)

For further details on the WLCA for the proposed Development refer to the Whole Life Cycle Assessment report submitted as part of the planning submission as a standalone document..



Figure 7: Comparison with GLA WLC and aspirational benchmarks

Objective Targets The Development will reduce CO₂ emissions by 54.0% over Part-Reduce energy demand and • L Baseline emissions in line with the zero-carbon target set by consumption and CO₂ emissions Policy SI2 of the London Plan 2021. during building operation, through passive design, energy The Development will achieve 11 credits under BREEAM Ene 01 efficiency measures and low and issue. zero carbon technologies. The energy consumption of the proposed Development during operation has been estimated between 108.6KWh/m²/year and 119.5kWh/m²/year. The annual energy performance of the building will be monitored as per the GLA's Be Seen Energy Monitoring Guidance. A Whole Life Cycle Assessment (WLCA) has been undertaken to estimate the environmental impact of the Development through its whole life cycle: - Whole life cycle impact (stages A-C): 9,577 tCO_{2e} over a 60year period.

4.3 Water and surface water run-off

The Development will aim to specify low water consumption fittings and appliances. The Development aims to achieve at least the BREEAM Excellent standard for the 'Wat 01' water category and reduce potable water consumption by 40% over the BREEAM baseline via water efficient sanitary fittings.

A leak detection system capable of detecting major water leaks on the mains water supply will be installed to reduce the impact of major water leaks that may otherwise go undetected. Flow controlled devices will be fitted to each toilet facility to prevent minor water leaks. Remotely readable water meters will be provided to monitor and reduce mains water use. Accessible sub-meters will also be installed to monitor mains water supply to major water consuming plants and building areas.

The proposed development will minimise the unregulated water consumption in sanitary applications and irrigation. Low water use fixtures and fittings will be installed in the proposed development where feasible and available to market.

A Flood Risk Assessment (FRA) and Sustainable Urban Drainage (SuDs) Strategy has been produced for the proposed Development by HTS consultants. The FRA showed the risk of flooding from all sources including fluvial and tidal, groundwater and artificial sources. This of flooding from these sources is found to be low by the FRA. Following a SuDS appraisal, blue roofs are considered viable to provide appropriate storage requirement and are included within the surface water drainage proposals.

A rainwater harvesting system is not proposed for this Development as it considered not to be feasible, due to limited space available for incorporation of rainwater harvesting storage tank.

 Objective	Targets
Use water efficiently, minimise potable water consumption and if technically and economically feasible reduce reliance on mains water supplies.	 Reduce po baseline vi All water u operation. Provide wa wastage du



otable water consumption by 40% over the BREEAM via water efficient sanitary fittings.

uses to be metered and monitored during building n.

vater leak detection systems to minimise water due to leaks.

4.4 Materials and Waste – A Circular Economy approach

Implementing circular economy principles to the design of the proposed Development has been a key aspect of the design since the early stages, in line with the principles outlined in the GLA's Circular Economy Guidance (April 2020).

Circular Economy is defined in the London Plan 2021 Policy SI7 'Reducing waste and supporting the Circular Economy' of the London Plan 2021 as one where materials are retained in use at their highest value for as long as possible and are then reused or recycled, leaving a minimum of residual waste.

A detailed Circular Economy Statement has been produced for the proposed Development in accordance with the requirements of the GLA's Circular Economy Guidance and has been submitted in support of this planning application as a standalone document. A summary of the key Circular Economy principles incorporated in the proposed Development is provided below.

Strategic Approach

The strategic approach involves:

- The reuse of the existing sub-structure and super structure.
- The reuse of the majority of the existing façades, including existing windows.
- The construction of a new extension, which will be designed and constructed to allow for longevity, flexibility and adaptability.

4.4.1 Proposed Circular Economy Measures

Minimising quantities of materials and resources

- The proposed development has reduced the quantity of materials used primarily through the retention of a majority of the existing development.
- The proposed Development will aim to minimise waste generated during the construction process through the _ implementation of the waste hierarchy (reduce, reuse, recycle, recover).
- The structural design will incorporate use of GGBS for cement replacement.
- Durable materials, that require less maintenance and replacement to reduce materials used in later stages of the building's life cycle will be specified.
- The design will aim to specify materials with recycled content. This will be explored at the next stages when the design and specification of materials will be developed in further detail.
- Three storey extension accomplished without need for significant changes to the substructure.
- Central plant and the services distribution has been optimised to reduce any transfers, or excessive lengths of pipe work, ductwork, containment and cables.
- Where possible standard building material dimensions will inform the design for efficiency.

Minimising other resources used

The proposed Development will be designed and constructed to reduce the use of resources other than materials, including land, energy and water.

- The proposed scheme retains the existing structure on site and increases the density, thus preventing urban sprawl and the use of greenfield land.
- The energy strategy for the proposed Development has prioritised measures for energy demand reduction in line with the Mayor's energy hierarchy. The proposed energy strategy is described in detail in the Energy Statement, which is submitted in support of this planning application as a stand-alone document. The Energy Statement combines energy efficiency measures and low and zero carbon technologies to reduce the energy consumption of the Development.
- The proposed Development will reduce potable water demand through the specification of efficient water fittings and water leakage detection systems.
- The Development also aims to reduce unregulated water demand, incorporating efficient irrigation system and plants with low water demand.

Specify and source materials and other resources responsibly and sustainably

The proposed Development will aim to source materials responsibly and sustainably, following the relevant requirements of BREEAM as follows:

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- New materials with responsible sourcing certificates will be prioritised, where available to the market
- _ A sustainable procurement plan will be produced in future stages to ensure materials are sourced sustainably and responsibly
- Procurement of local materials will be prioritised, where feasible

Design for longevity, adaptability or flexibility and reusability or recoverability

- Proposed structure can be disassembled and reused on a different site at the end of the building life
- Concrete decking is precast and does not have an in-situ topping. _
- _ Steel beams are bolted to each other / columns to aid disassembly.
- The extension facade will generally be formed from separate rather than composite elements, minimising waste in _ maintenance & disassembly.
- Over provision of riser space for future expansion of building services
- Most of the MEP systems are designed to be independent to ensure that these are accessible and can be maintained and replaced without resulting in waste production. Access will be designed for all systems that require it and therefore avoid the need for destructive access.
- The design of the building is primarily for office use but can also be for lab use if required. The building has 'lab enabled' cores, plant areas, and utility connections to have flexibility to have both type of these tenants throughout its lifetime.
- Sustainable Procurement Plan to be discussed with contractor at later stages.
- 4.4.2 Waste management

The proposed Development will maximise the use of existing resources and materials, where feasible and will minimise waste generated during the demolition and construction process through the implementation of the waste hierarchy (prevent, reuse, recycle, recover, dispose). The proposed design will also enable sustainable management of operational waste, providing dedicated, clearly labelled, accessible and of appropriate capacity storage spaces for non-recyclable and recyclable waste generated by the building's occupants.

The proposed design proposals have incorporated measures to address the principles of circular economy related to waste management as outlined below:

Design out construction, demolition, excavation and municipal waste arising

- _ Demolition minimised through retention of a majority of the existing building.
- Demolition waste will be sustainably managed in line with a pre-demolition audit to be produced for the Development, to ensure opportunities for reuse or recycling of existing materials are maximised.
- _ The super structure will consist of recyclable materials (i.e. steel), designing out waste to landfill at the end of life stage.
- Façade, concrete slabs, and building services have potential to be manufactured off-site, reducing waste generation. _ Further opportunities for incorporation of pre-fabricated elements will be explored in the next design stages.
- The proposed design provides dedicated space is for the segregation and storage of operational general and recyclable waste volumes generated by the building occupants' and activities during operation.
- Potential to reuse slate from existing mansards as mansard cladding pending detailed condition survey.

Manage demolition waste

- A pre-demolition audit of the existing buildings on-site will be carried out. This will aim to audit identify existing materials that can be reused or recycled of-site and will determine percentage of demolition materials which will be diverted from landfill, aiming for diversion rates of 90% by volume or 95% by tonnage, as a minimum

Manage construction waste

- The construction waste will be sorted into separate key waste groups either on-site or through a licensed contractor _ for recovery.
- _ A Resource Management Plan (RMP) will be developed and implemented according to best practice with the aim to reduce and manage the construction site waste effectively. The development will achieve a maximum amount of construction waste benchmark of $\leq 11.5 \text{ m}^3/100 \text{m}^2$ or 3.5 tonnes/100m² of gross internal floor area.



- Construction waste will be reduced and diverted from landfill where technically and economically feasible, to meet the targets set by Policy SI 7 of the London Plan 2021 and the draft Circular Economy Guidance (October 2020). Non-hazardous construction waste will be diverted from landfill. The diversion from landfill rates should be as a minimum:
 - Construction waste = 85% by tonnage

Manage municipal waste

The proposed Development will also adhere to an operational waste management plan which will include estimates of volumes and types of waste that will be generated during operation. The operational waste management plan will include proposed means for waste separation, recycling, movement within the development and their storage, locations and sizes of storage areas, access for waste and recycling collections, measures to keep all waste off-street, any arrangements for collection and disposal of special waste, use of compactors and baler (if applicable) and any on-site equipment to process waste. Adequate, dedicated, clearly labelled, accessible and of appropriate capacity storage spaces for non-recyclable and recyclable waste generated by the building's occupants will be provided at the ground floor level of the development to enable adequate management of operational waste.

Objective	Targets
Minimise waste during demolition and construction and reduce waste arising during operation.	 Manage strip out and demolition waste sustainably, in accordance with the pre-refurbishment/demolition audit, with the aim to achieve 95% per tonnage diversion of waste from landfill. Prepare and implement an Operational Waste Management plan to inform the segregation, storage and management of waste during operation. Aim to enable future occupants to achieve the municipal waste recycling target of 60 per cent by 2031; The amount of non-hazardous on-site/off-site construction waste to be generated to be 11.5 m³/100m2 or 3.5 tonnes/100m² as a maximum. The main contractor will be required to produce a Site Waste Management Plan to manage construction waste in a sustainable manner.

4.4.3 Environmental impact of materials

Materials will be selected not only considering their environmental impact alongside functionality, aesthetics and durability, but also based on their environmental impact. Procurement of materials will be sourced in a responsible way and have a low embodied impact over their life.

Construction materials with low embodied carbon and low environmental impact over the full life cycle of the building will be prioritised. The retention of the existing foundations and sub-structure also contributes to the reduction of the whole life cycle impacts of the proposed Development, as it retains existing materials in use for longer. A whole life cycle assessment (WLCA) has been produced for the Development in line with the GLA Guidance on WLCA.

The proposed design will intend to specify materials that are responsibly sourced. The timber and timber-based products used on the project will be "Legally harvested and treated timber", i.e. legally sourced and certified (e.g. FSC certified). The project will intent to select suppliers who can provide an environmental management system (EMS) certificate.

Adequate attention will be given to vulnerable parts of the development and landscape (e.g. areas exposed to high pedestrian traffic and vehicular movement) to minimize the frequency of material replacement.

The thermal insulation installed to the building envelope and building services systems will have low embodied environmental impact relative to its thermal properties. Insulation products with insulation index equal to or greater than 2.5 will be specified.

dance	Objective	Targets
plan e the vaste is a able	Reduce the impact of materials on environment and human health and use materials with low environmental impact over their life cycle.	 Materials with minimise envi Undertake a li Produce a Sus Procurement responsible sc 100% of timbe FSC certified) Frequency of adequate prot Achieve at lea BREEAM besp



s with low environmental impact to be prioritised to environmental impact

e a life cycle assessment

a Sustainable Procurement Plan (SPP)

nent of materials, services and fittings with ole sourcing certification to be prioritised

timber used in the buildings to be legally sourced (e.g. fied)

y of material replacement to be minimised through protection

at least ≥18% of the available RSM points under bespoke scheme

4.5 Pollution

The Development will be designed to have no negative impact on air quality, through the incorporation of plant equipment which will contribute to minimum emissions. The exclusion of plant with direct NO_x emissions such as boilers and the incorporation of non-combustion plant as the air source heat pumps aim to reduce the impact of 105 Judd Street to the surrounding environment.

The proposed Development will be designed to eliminate excessive external noise levels. A Noise Impact Assessment will be undertaken to confirm that the noise levels of the Development do not have any negative impact to the surrounding environment.

An air quality assessment has been prepared by TetraTech Air Quality Consultants, which confirms that the proposed Development will be air quality neutral and will not have any negative impact to the surrounding environment.

Night-time light pollution will be minimised through the appropriate location and selection of external luminaires and light controls.

All systems using refrigerants will comply with the requirements of BS EN 378:2016 and where refrigeration systems containing ammonia are installed, the Institute of Refrigeration Ammonia Refrigeration Systems Code of Practice.

 Minimise the impact of the development on the local environment via implementation of adequate mitigation measures related to materials and systems, air quality, external lighting and noise. Have no negative impact on noise levels. Have no negative impact on noise levels. Have no negative impact on air quality Prevent nigh-time light pollution Refrigerants to have Direct Effect Life Cycle CO₂ equivalent emissions (DELC CO₂e) ≤1000 kgCO_{2e}/ cooling/heating capacity. Utilise all electric/ non-combustion systems to eliminate direct NO_x emissions. 	². :/kW

4.6 Ecology

The Development relates to the re-development of an existing site; hence it utilises previously developed land.

The proposed design has emphasised on urban greening, maximising the areas that could be utilised for planting and soft landscaping, to increase the ecological value of the Site.

An ecology report will be produced for the proposed Development to confirm existing ecological value and provide recommendations for improving the site's ecological value and biodiversity.

The proposed landscape design and greening features will result in significant improvements in the site's ecological value The calculated Urban Greening Factor (UGF) is 0.27.

Objective	Tar	gets
Protect the existing ecological features and enhance the	•	Protect a recomme
ecological value of the site.	•	Produce a
Minimise the long-term impact of the development on	•	Adopt the the ecolo
the local blockersity.	•	Incorpora
	•	Achieve a



ny existing ecological features as per the endations of the ecologist.

a landscape and habitat management plan.

e key recommendations of the ecologist to enhance ogical value of the site.

ate green and blue roof areas.

an UGF of 0.27

4.7 Health and Well-being

The design of the proposed Development has emphasised on improving health and well-being of the building occupants, by incorporating measures as described below:

- Internal and external lighting will be designed in line with best practice for visual performance and comfort. Accessible and intuitive lighting controls will be installed within each space. Occupancy sensors will be specified in all spaces where occupants and building managers have access into. Daylight dimming, and occupancy sensors will be specified in spaces with regular occupancy.
- The lighting design will minimise any glare or conflict with street or traffic light.
- > The proposed design will maintain thermal comfort conditions based on current climatic conditions and future projections.
- All water systems will be designed in order to reduce the risk of legionella in operation.
- The proposed Development will incorporate "inclusive design" techniques so that the public spaces, access routes to and around the building are, wherever possible, accessible to wheelchairs. The Development will meet Part M of the Building Regulations and BS 8300: Design of buildings and their approaches to meet the needs of disabled people.
- The Development will achieve adequate indoor ambient noise levels. An acoustic report will be produced to set out the noise criteria for the indoor ambient noise levels and sound insulation levels for the spaces within the Development.
- A Security Needs Assessment will be undertaken by a suitably qualified security specialist to identify effective measures that promote safe and secure use and access to and from the building.
- > The ventilation strategy has been designed to supply sufficient fresh air to the occupied spaces. This will remove any pollutants, reduce the risk to health associated with poor indoor air quality and reduce the risk of overheating.

Objective	Targets
Ensure a healthy and comfortable environment for the occupants by designing for thermal and visual comfort, air quality, water quality and controllability of the indoor environmental conditions.	 External lighting to be designed in accordance with best practice visual performance guides (BS5489-1:2013 Lighting of roads and public amenity areas and BS EN 12464-2:2014 Light and lighting - Lighting of workplaces - Part 2: Outdoor workplaces) No negative impact on air quality and noise. Clean and fresh water to be supplied to the occupants and all wate systems to reduce the risk of legionella The ventilation and heating/cooling strategy will ensure sufficient fresh air supply into the building and thermal comfort to the occupiers.

4.8 Management

Through a consultation process, the project key stakeholders have been involved in the design process in order to deliver a functional, accessible and inclusive development. A sustainability champion has been appointed since the feasibility stage to facilitate the setting and achievement of BREEAM performance targets for the Development.

The construction site will be managed in an environmentally and socially considerate manner by contractually requiring the building contractor to comply with and implement best practice principles. The principal contractor will operate an environmental management system (EMS) covering their main operations and will implement best practice pollution prevention policies and procedures on-site in accordance with Pollution Prevention Guidelines (PPG6). Energy, water and transport data resulting from the on-site construction process will be monitored, recorded and reported.

An appropriate level of building services commissioning will be carried out to ensure optimum performance under actual occupancy conditions.

A building user guide (BUG) will be prepared prior to handover and will be distributed to the building occupiers and premises managers, which will cover information on the operation and environmental performance of the building. The building occupiers and premises managers will be appropriately trained during handover, to inform them about the sustainability and energy efficiency features of the building, to ensure the building is suitably managed during operation.

	Objective	Targets
	Promote and implement	 The appointed pr management syst
	sustainable management solutions during building design, construction and in-	 Monitor, record a transport of mate
		 Plan and impleme and handover.
	use phase.	 Provide adequate managers.

4.9 Transport

The Development is located in central London and is in close proximity to public transport networks and local amenities. The public transport access level (PTAL) is 6b (the highest level).

A Transport assessment and Travel Plan will be produced for the proposed Development with the aim of the Travel Plan is to set up appropriate management tools to enable employees and visitors of the Development to utilise sustainable means of transport whilst minimising the adverse impacts of their travel on the environment.

The proposed Development will include 152 long-stay cycle storage spaces and 12 short-stay cycle storage spaces, which will be located at the basement level of the building. The Development will also provide cyclist facilities including showers, changing facilities and lockers, to encourage cycling and promote sustainable and active models of transport.

Objective	Targets	
Minimise impact of transport on the local environment, reduce transport related GHG emissions and ensure building users well-being through access to sustainable means of transport.	 Provide Provide cycle store Provide Develop use of sureduction environ Develop develop 	n 1 n a i n r



ncipal contractor to operate an environmental em (EMS)

and report energy and water consumption and erials and waste during the construction phase.

ent effective commissioning, seasonal commissioning

training and a BUG for building users and facilities

no new car parking spaces

152 long-stay cycle storage spaces and 12 short-stay rage spaces)

adequate showers, lockers and changing facilities.

a travel plan for the building users and promote the stainable means of transport while encouraging the n of reliance on forms of travel that have the highest nental impact.

a transport assessment to investigate the nent on the capacity of the transport network

5 CONCLUSIONS

This report detailed the sustainability strategy for the proposed Development, in support to a full planning application submitted to the Camden Council.

The proposed sustainability strategy has been developed in response to the requirements set by the national, regional and local planning policy framework, with the aim to provide a highly sustainable development, which improves the occupants' health and well-being, whilst being energy and water efficient, utilising sustainable materials and preventing air, noise and light pollution.

The proposed sustainability strategy involves measures that cover the following main thematic categories:

Energy and CO₂ emissions

- The Development will reduce CO₂ emissions by 52.8% over Part L2A 2013, in line with the zero-carbon target set by Policy SI2 of the London Plan 2021.
- The energy consumption of the proposed Development during operation is estimated between 108.6kWh/m²/year and 119.5kWh/m²/year
- The Development will incorporate a detailed metering system to allow monitoring and reporting the annual energy performance of the building as per the GLA's Be Seen Energy Monitoring Guidance.
- A Whole Life Cycle Assessment (WLCA) has been undertaken to estimate the environmental impact of the Development through its whole life cycle:
 - -Whole life cycle impact (stages A-C): 9,577 tCO2e, over a 60-year period.

Water

- The Development will reduce potable water consumption by 40% over the BREEAM baseline via water efficient sanitary fittings.
- All water uses will be metered and monitored during building operation.
- The Development will incorporate water leak detection systems to minimise water wastage due to leaks.
- A Flood Risk Assessment has been produced for the Development showing low risk of flooding.

Materials and Waste - A Circular economy Approach

- Demolition waste will be managed sustainably, in accordance with the pre-demolition audit, with the aim to achieve _ 90 % diversion of waste from landfill.
- An Operational Waste Management plan will be prepared and implemented to inform the segregation, storage and management of waste during operation. The Development will Aim to enable future occupants to achieve the municipal waste recycling target of 60 per cent by 2031.
- The amount of non-hazardous on-site/off-site construction waste to be generated to be 7.5 m³/100m² or 6.5 tonnes/100m² as a maximum.
- meet or exceed the targets for each of the following waste and material streams:
- The main contractor will be required to produce a Site Waste Management Plan to manage construction waste in a sustainable manner.

Pollution

- Have no negative impact on noise levels.
- Have no negative impact on air quality _
- Prevent nigh-time light pollution
- Refrigerants to have Direct Effect Life Cycle CO₂ equivalent emissions (DELC CO₂e) \leq 1000 kgCO₂e/kW cooling/heating capacity.
- Utilise all electric/ non-combustion systems to eliminate direct NO_x emissions.

Health and Wellbeing

- The proposed design to provide visual, acoustic and thermal comfort.
- The proposed design to provide adequate ventilation rates and maintain high indoor air quality. _
- The Development to be inclusive and accessible.

Management

- The appointed principal contractor to operate an environmental management system (EMS)
- Monitor, record and report energy and water consumption and transport of materials and waste during the construction phase.
- Appoint Suitably qualified professionals to undertake a thermographic survey and airtightness test. _
- Plan and implement effective commissioning, seasonal commissioning and handover. _
- Provide adequate training and a BUG for building occupants and facilities managers

Ecology •

- Protect any existing ecological features as per the recommendations of the ecologist. _
- _ Produce a landscape and habitat management plan.
- _ Adopt the key recommendations of the ecologist to enhance the ecological value of the site.
- Incorporate green and blue roof areas. _
- Achieve an UGF of 0.27.

Transport

- Provide no new car parking spaces
- Provide 152 long-stay cycle storage spaces and 12 short-stay cycle storage spaces _
- Provide adequate showers, lockers and changing facilities. _
- Develop a travel plan for the building users and promote the use of sustainable means of transport while encouraging _ the reduction of reliance on forms of travel that have the highest environmental impact.
- _ Develop a transport assessment to investigate the development on the capacity of the transport network

The sustainability credentials of the proposed Development are also demonstrated by its assessment under BREEAM. A BREEAM pre-assessment workshop was carried out review the design proposals against the BREEAM criteria. The preassessment workshop concluded that a score of 74.6% is achievable by the proposed Development, which corresponds to a BREEAM Excellent rating.



APPENDIX A: PLANNING POLICY REQUIREMENTS

5.1 National planning policy framework

The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these are expected to be applied. The NPPF informs the preparation of development plans and is a material consideration in planning decisions. It also sets objectives for sustainable development, which should be delivered through the preparation and implementation of local plans.

The NPPF does not contain any specific environmental sustainability and energy targets.

5.2 The London Plan 2021

A new London Plan hereafter referred as the "London Plan" has been developed by the Mayor and the Greater London Authority (GLA) to set out the development framework for London from 2019 to 2041. The Mayor has formally published the new London Plan in March 2021.

Key policies of the Publication London Plan relating to environmental sustainability are outlined below:

Policy SI1 Improving London's air quality requires air quality to be significantly improved and exposure to poor air quality, especially for vulnerable people, to be reduced.

Development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality.

Major development proposals must be at least air quality neutral and be submitted with an Air Quality Assessment.

Development proposals must demonstrate how they reduce emissions from the demolition and construction of buildings following best practice guidance.

Policy SI2 Minimising greenhouse gas emissions requires all major developments to be net zero-carbon, reducing greenhouse gas emissions and minimise both annual and peak energy demand in accordance with the energy hierarchy: (1) Be Lean, (2) Be Clean, (3) Be Green and (4) Be seen.

Major development proposals should include a detailed energy strategy to demonstrate how the zero-carbon target will be met within the framework of the energy hierarchy.

Major developments should achieve a minimum on-site reduction of at least 35% beyond Building Regulations. Nonresidential development should aim to achieve 15% through energy efficiency measures. Where it is clearly demonstrated that the zero-carbon target cannot be fully achieved on-site, any shortfall should be provided, in agreement with the borough, either:

- through a cash in lieu contribution to the borough's carbon offset fund; or
- off-site provided that an alternative proposal is identified, and delivery is certain.

Major development proposals should 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.

Development proposals referable to the Mayor should calculate whole life-cycle carbon emissions through a nationally recognised Whole Life-Cycle Carbon Assessment and demonstrate actions taken to reduce life-cycle carbon emissions.

• Policy SI3 Energy infrastructure requires major development proposals within Heat Network Priority Areas to have a communal low-temperature heating system.

The heat source for the communal heating system should be selected in accordance with the following heating hierarchy:

- connect to local existing or planned heat networks
- use available zero-emission or local secondary heat sources (in conjunction with heat pump, if required, and a lower temperature heating system)
- use low-emission combined heat and power (CHP) (only where there is a case for CHP to enable the delivery of an area-wide heat network. In areas where legal air quality limits are exceeded all development proposals must provide evidence to show that any emissions related to energy generation will be equivalent or lower than those of an ultralow NO_x gas boiler)

- use ultra-low NO_x gas boilers

Where a heat network is planned but not yet in existence the development should be designed for connection at a later date.

- Policy SI4 Managing heat risk requires that development proposals should minimise adverse impacts on of the urban heat island effect through design, layout, orientation, materials and the incorporation of green infrastructure. Major development proposals should demonstrate through an energy strategy how they will reduce the potential for internal overheating and reliance on air conditioning systems in accordance with the following cooling hierarchy:
 - Reduce the amount of heat entering a building through orientation, shading, high albedo materials, fenestration, _ insulation and the provision of green infrastructure
 - Minimise internal heat generation through energy efficient design
 - Manage the heat within the building through exposed internal thermal mass and high ceilings
 - Provide passive ventilation
 - Provide mechanical ventilation
 - Provide active cooling systems _
- Policy SI5 Water infrastructure requires that, in order to minimise the use of mains water, water supplies and resources should be protected and conserved in a sustainable manner. Development plans should promote improvements to water supply infrastructure to ensure security of supply. Development proposals should:
 - achieve at least the BREEAM Excellent standard (i.e. at least 12.5% improvement over a defined baseline) for the _ 'Wat 01' water category or equivalent for commercial developments.
 - incorporate measures such as smart metering, water saving and recycling measures, including retrofitting, to help _ to achieve lower water consumption rates and to maximise future proofing.
- Policy SI7 Reducing waste and supporting the circular economy requires developments to:
 - promote a more circular economy that improves resource efficiency and innovation to keep products and materials at their highest use for as long as possible
 - encourage waste minimisation and waste avoidance through the reuse of materials and using fewer resources in the production and distribution of products
 - meeting or exceeding the recycling targets for each of the following waste streams and generating low-carbon _ energy in London from suitable remaining waste:
 - municipal waste 65 per cent by 2030
 - construction, and demolition and excavation waste 95 per cent by 2020
 - provide adequate and easily accessible storage space that supports the separate collection of dry recyclables (at _ least card, paper, mixed plastics, metals, glass) and food.
- Policy SI12 Flood risk management requires development proposals to ensure that flood risk is minimised and mitigated, and that residual risk is addressed.
- Policy SI13 Sustainable drainage requires development proposals to aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible.
 - The following drainage hierarchy should be followed: _
 - rainwater use as a resource (for example rainwater harvesting, blue roofs for irrigation)
 - rainwater infiltration to ground at or close to source
 - rainwater discharge direct to a watercourse _
 - controlled rainwater discharge to a surface water sewer or drain
 - controlled rainwater discharge to a combined sewer _

Drainage should be designed and implemented in ways that address issues promote multiple benefits including increased water use efficiency, improve water quality, and enhance biodiversity, urban greening, amenity and recreation.



Policy T4 Assessing and mitigating transport impacts, requires development proposals to reflect and be integrated with current and planned transport access, capacity and connectivity.

Transport assessments should be submitted with development proposals to ensure that any impacts on the capacity of the transport network, at the local, network-wide and strategic level, are fully assessed.

Transport assessments should focus on embedding the Healthy Streets Approach within, and in the vicinity of, new development.

Travel Plans, Parking Design and Management Plans, Construction Logistics Plans and Delivery and Servicing Plans will be required in accordance with relevant Transport for London guidance.

- Policy T5 Cycling, requires development proposals to secure the provision of appropriate levels of cycle parking which should be fit for purpose, secure and well-located. Developments should provide long stay and short stay cycle storage to meet the following requirements as a minimum:
 - 1 cycling storage space per 75m² (GEA)
- Policy T6 Car parking, requires car parking to be restricted in line with levels of existing and future public transport accessibility and connectivity.
 - Car-free developments that have no general parking should still provide disabled persons parking
 - Adequate provision should be made for efficient deliveries and servicing and emergency access
- Policy T6.5 Non-residential disabled persons parking, requires all non-residential elements of a development to provide at least one on or off-street disabled persons parking bay.
- Policy G5 Urban greening, requires major development proposals to contribute to the greening of London by including urban greening as a fundamental element of site and building design, and by incorporating measures such as highquality landscaping, green roofs, green walls and nature-based sustainable drainage.
- Policy G6 Biodiversity and Access to Nature requires development proposals to manage impacts on biodiversity and aim to secure net biodiversity gain. This should be informed by the best available ecological information and addressed from the start of the development process.
- Policy G7 Trees and woodlands, requires that development proposals should ensure that, wherever possible, existing trees of quality value are retained.

The London Plan 2021 also includes policies that do not contain any specific environmental sustainability and energy targets for the proposed Development. These polices are: Policy SI6 Digital connectivity infrastructure, Policy SI8 Waste capacity and net waste self-sufficiency, Policy SI9 Safeguarded waste sites, Policy SI10 Aggregates, Policy SI11 Hydraulic fracturing. and Policy SI14 Waterways - strategic role.

5.3 Greater London Authority (GLA) Energy Planning Guidance

The Greater London Authority's (GLA) Energy Planning Guidance, published in April 2020, provides guidance on preparing energy assessments for major development proposals. Each assessment is required to demonstrate compliance with the carbon reduction targets set out in Policy SI2 of the Publication London Plan.

The Energy Assessment Guidance requires major developments to:

- Non-domestic developments to reduce CO2 emissions by at least 15% over the baseline building though energy efficiency measures alone;
- Demonstrate at least a 35% on-site reduction beyond Part L 2013 for non-residential development;
- Include information demonstrating that the risk of overheating has been mitigated through the incorporation of passive design measures;
- Demonstrate that connection to existing or planned district heating networks has been prioritised and provide correspondence to support this;
- Commit to a site-wide heat network to allow connection to existing or planned district heating networks identified in the area:
- Commit to a single energy centre to supply the site-wide heat network;

- Investigate suitable low carbon and/or renewable heating plant for installation within the energy centre if connection can't be made to an area wide network:
- Investigate and commit to maximising the installation of renewable technologies (including the potential for storage) on site:
- Include information on how the building's actual energy performance will be monitored post-construction;
- Align with related documents and assessments that are submitted as part of the planning application, e.g. Air Quality Assessments, Sustainability Statements.

5.4 Greater London Authority (GLA) Be Seen Energy Monitoring Guidance

The 'Be Seen' Energy Monitoring Guidance, draft for consultation version published in October 2020, explains the process that needs to be followed to comply with the 'be seen' post-construction monitoring requirement of Policy SI 2 of the Publication London Plan.

The document sets the requirements outlined below for the planning stage:

- Contextual data: Provide contextual data relating to the development's reportable units (RUs). This includes non-energy information such as data on location and typology of buildings.
- Building energy use: Report on the energy and fuel imports into each RU of a development.
- Renewable energy: Report on the renewable energy generation within the development to identify how much energy is being generated on-site and where this is used.
- Energy storage equipment: Report on building energy storage equipment data.
- Plant parameters: Report on parameters that relate to the performance of heat or cooling generation plant within energy centres that form part of a development. This will include energy inputs and outputs of energy centres, energy use and contribution of heating and cooling technologies, and network efficiency data to monitor losses in district and communal energy networks.
- Carbon emissions: Report on the development's estimated carbon emissions at planning stage based on the appropriate carbon emission factors, as set out in the GLA's Energy Assessment Guidance. When on-site carbon reductions have been maximised, but a carbon shortfall still exists, applicants will be expected to report on and confirm the carbon offsetting contribution to the relevant local authority's fund in line with the net zero carbon target.

5.5 GLA Guidance on Circular Economy Statements

The Guidance on Circular economy Statements was published by GLA in March 2020 as draft version for consultation and provides the structure and minimum content that a Circular Economy Statement should cover to fully address the requirements of the Policy SI 7 of the Publication London Plan. The consultation period for this Guidance document closed in 15 January 2021. The Guidance is expected to be published in summer 2021.

This document provides guidance for Circular Economy Statements to ensure that applicants seeking planning permission for major schemes:

- Consider strategies to facilitate the transition towards a circular built environment •
- Report against numerical targetsthat will facilitate monitoring of waste and recycling and
- Recognise opportunities to benefit from greater efficiencies that can help to save resources, materials, and have economic benefits.

Post-Planning Updates to the Circular economy Statement should be provided at RIBA stages 5 and 7 to present the progress in meeting the targets and commitment during the construction phase. The need for updates will be determined during the application process.

5.6 Whole Life-Cycle Carbon Assessments Guidance

The Whole Life-Cycle Assessment Guidance, published by the GLA as draft version for consumption in March 2020, provides information on how to comply with the Mayor's ambition stated in the Publication London Plan and explains how to prepare a WLC assessment, which should accompany all referable planning applications in line with the London Plan Policy SI 2. This



draft version was further updated in October 2020 for consultation. The consultation closed on 15 January 2021. The Guidance is expected to be published in summer 2021.

In developing a WLC assessment for compliance with Policy SI 2, applicants should follow BS EN 15978 using the RICS Professional Statement as the methodology for assessment. In the UK, the framework for appraising the environmental impacts of the built environment is provided by BS EN 15978: 2011: (Sustainability of construction works — Assessment of

environmental performance of buildings — Calculation method). It sets out the principles and calculation method for whole life assessment of the environmental impacts from built projects based on life-cycle assessment.

5.7 Camden Local Plan, published 2017

The Camden Local Plan, published in 2017, sets out Camden Council's planning policies and replaces the Core Strategy and Development Policies planning documents (adopted in 2010). The Local Plan covers the period from 2016-2031.

- Policy A3 Biodiversity requires:
 - the demolition and construction phase of development, including the movement of works vehicles, to be planned to avoid disturbance to habitats and species and ecologically sensitive areas, and the spread of invasive species;
 - trees and vegetation which are to be retained to be satisfactorily protected during the demolition and construction phase of development in line with BS5837:2012 'Trees in relation to Design, Demolition and Construction' and positively integrated as part of the site layout;
 - replacement trees or vegetation to be provided where the loss of significant trees or vegetation or harm to the wellbeing of these trees and vegetation has been justified in the context of the proposed development;
 - developments to incorporate additional trees and vegetation wherever possible.
- Policy A4 Noise and vibration requires developments to meet Camden's Noise and vibration thresholds in Camden Council's Local Plan, Appendix 3, Table B: Noise levels applicable to noise sensitive residential development proposed in areas of existing noise.
- Policy CC1 Climate change mitigation requires major developments to assess the feasibility of connecting to an existing decentralised energy network, or where this is not possible to establish a new network.
- Policy CC2 Adapting to climate change requires all developments to adopt appropriate climate change adaptation measures such as:
 - The promotion of existing green spaces and promoting new appropriate green infrastructure.
 - not increasing, and wherever possible reducing, surface water runoff through increasing permeable surfaces and use of Sustainable Drainage Systems;
 - incorporating bio-diverse roofs, combination green and blue roofs and green walls where appropriate;
 - measures to reduce the impact of urban and dwelling overheating, including application of the cooling hierarchy. This policy also requires new non-domestic developments of 500m² of floor space or more to achieve a BREEAM "Excellent" rating.
- Policy CC3 Water and flooding requires developments not to increase flood risk and reduce where the risk of flooding where possible. Developments will be required to:
 - incorporate water efficiency measures; _
 - avoid harm to the water environment and improve water quality;
 - consider the impact of development in areas at risk of flooding (including drainage);
 - utilise Sustainable Drainage Systems (SuDS) in line with the drainage hierarchy to achieve a greenfield run-off rate where feasible:
- Policy CC4 Air quality requires commercial developments with floor spaces of 2,500m² or more and/or developments that include biomass boilers or CHP (combined heat and power) and connections to existing decentralised energy networks (whereby the increased capacity is not already covered by an existing AQA) to produce Air Quality Assessments (AQA).

Development that involves significant demolition, construction or earthworks will also be required to assess the risk of dust and emissions impacts in an AQA and include appropriate mitigation measures to be secured in a Construction Management Plan.

- Policy T1 Prioritising walking, cycling and public transport requires developments to:
 - improve the pedestrian environment by supporting high guality public realm improvement works:
 - make improvements to the pedestrian environment including the provision of high-quality safe road crossings where needed, seating, signage and landscaping;
 - ensure they are easy and safe to walk through ('permeable');

- provide high quality footpaths and pavements that are wide enough for the number of people expected to use them. Features should also be included to assist vulnerable road users where appropriate;
- provide for and make contributions towards connected, high quality, convenient and safe cycle routes, in line or exceeding London Cycle Design Standards
- provide for accessible, secure cycle parking facilities exceeding minimum standards outlined within the London Plan and design requirements outlined within our supplementary planning document Camden Planning Guidance on transport
- make provision for high quality facilities that promote cycle usage including changing rooms, showers, dryers and lockers;
- Policy T2 parking and car-free development requires all new developments to be car-free.
- Policy T4 Sustainable movement of goods and materials requires developments of over 2,500m2 likely to generate significant movement of goods or materials by road to:
 - minimise the impact of freight movement via road by prioritising use of the Transport for London Road Network or other major roads;
 - accommodate goods vehicles on site;
 - provide Construction Management Plans, Delivery and Servicing Management Plans and Transport Assessments where appropriate.

Camden Council's Local Plan also includes Policies CC5 Waste, C1 Health and wellbeing, C5 Safety and Security, policy A1 managing the impact of development. These policies do not contain any specific environmental sustainability and energy targets.

5.8 Camden Planning Guidance (CPG) Energy Efficiency and Adaptation, published January 2021

Camden Planning Guidance (CPG) supports the policies in the Camden Local Plan 2017. This guidance is therefore consistent with the Local Plan and forms a Supplementary Planning Document (SPD) which is an additional "material consideration" in planning decisions. This guidance provides information on key energy and resource issues within the borough and supports Local Plan Policies CC1 Climate change mitigation and CC2 Adapting to climate change.

- Section 2 Energy Hierarchy, requires all development in Camden to reduce carbon dioxide emissions by following the energy hierarchy in accordance with Local Plan policy CC1. Energy strategies are required to be designed following the steps set out in the energy hierarchy.
- Section 3 Making Buildings More Energy Efficient requires developments to prioritise passive measures over active measures to reduce energy. Non-residential development to achieve 15% reduction (beyond part L Building regulations), in accordance with the new London Plan, through on-site energy efficient measures (Be lean stage).
- Section 4 Decentralised Energy requires all new major developments in Camden are expected to assess the feasibility of decentralised energy network growth.
- Section 5 Renewable Energy Technologies requires developments to target a 20% reduction in carbon dioxide emissions from on-site renewable energy technologies.
- Section 7 Energy Reduction requires:
 - All development in Camden to reduce carbon dioxide emissions through the application of the energy hierarchy. _ All new build major development to demonstrate compliance with London Plan targets for carbon dioxide
 - emissions.
 - Deep refurbishments should also meet the London Plan carbon reduction targets for new buildings. _
 - _ All new build residential development (of 1 - 9 dwellings) must meet 19% carbon dioxide reduction;
 - Developments of five or more dwellings and/or more than 500sqm of any gross internal floorspace to achieve 20% _ reduction in carbon dioxide emissions from on-site renewable energy generation.
- Section 9 Resource Efficiency requires developments to divert 95% of demolition waste from landfill. All development should seek to optimize resource efficiency and use circular economy principals.
- Section 10 Sustainable Design and Construction Measures requires: .
 - All developments of 500 sqm or more to address sustainable design and construction measures (proposed in design and implementation) in a Sustainability Statement (Local Plan policy CC2).
 - Active cooling (air conditioning) will only be permitted where its need is demonstrated and the steps in the cooling hierarchy are followed (Local Plan policy CC2).



- Development is expected to reduce overheating risk through following the steps in the cooling hierarchy. All new _ development should submit a statement demonstrating how the cooling hierarchy has been followed (Local Plan policy CC2).
- All developments should seek opportunities to make a positive contribution to green space provision or greening. _

5.9 Camden Planning Guidance (CPG) Air Quality, published January 2021

Camden Planning Guidance (CPG) supports the policies in the Camden Local Plan 2017. This guidance is therefore consistent with the Local Plan and forms a Supplementary Planning Document (SPD) which is an additional "material consideration" in planning decisions. This guidance provides information on key air quality issues within the borough and supports Local Plan Policy CC4 Air quality.

- Section 2 All of Camden is a designated Air Quality Management Area due to the high concentrations of nitrogen dioxide (NO_2) and particulate matter (PM10). All developments are to protect future occupants from exposure to poor air quality and to limit their impact on local air quality, to be at least air quality neutral.
- Section 3 Air guality neutral assessments are required for all major developments. Major developments are schemes of 10 or more dwellings or buildings where the floorspace created is 1,000 square meters or more.
- Section 4 Minimising emissions into the air requires:
 - All proposals should adopt best practice measures to reduce and mitigate emissions.
 - Depending on the scale of demolition and construction on-site monitoring may be required.
 - Certain developments using Non Road Mobile Machinery (within the KW range) need to meet standards in the Mayor's Dust and emissions SPD.
 - The impact of outdoor air pollution on indoor air quality in new developments needs to be taken into account at the earliest stages of building design.
 - Development should take into consideration the location of amenity space and opportunities for appropriate planting 'greening'.
 - Development should reduce emissions by being energy efficient (reducing emissions associated with the operation of the building).
 - Development should prioritise more sustainable modes of transport and where applicable improve the walking and cycling environment.

5.10 Camden Planning Guidance (CPG) Transport, published January 2021

- Section 2 Assessing Transport Impact
 - A Transport Assessment. Statement or Note is required for all applications that involve a change in the way that a site is accessed from the highway
 - These documents must clearly demonstrate what measures will be required in order to mitigate the transport impact of the development
- Section 3 Travel Plan requirements will be tailored to the specific characteristics of the site and nature of the development in order to enable a development to proceed without adverse impact on the transport network by promoting sustainable travel.
- Section 4 Delivery and Service Plans if needed should be identified in the Transport Assessment.
- Section 5 Parking and car-free development outline:
 - The Camden Local Plan 2017 extends car-free development to the whole of the Borough.
 - Legal agreements will be used to maintain car-free and car-capped development over the lifetime of a scheme.
- Section 6 Car Parking Management and Reduction stipulates that developments with associated car parking will be required to submit a Car Parking Management and Reduction Plan. This plan should demonstrate how parking will be managed, monitored, enforced and repurposed in the future.
- Section 8 Cycling Facilities:
 - The Council will seek high quality cycle parking facilities for development, including redevelopments and in applications that change travel patterns and the travel profile or increase the numbers of people travelling to a site
 - Applicants must provide, as a minimum, the quantity of cycle parking spaces as set out in the London Plan; and _
 - Applicants will provide cycling facilities that are fully inclusive and accessible by step free access.

5.11 Camden Planning Guidance (CPG) Water and Flooding, published January 2019

- Section 2 Water efficiency stipulates:
 - _ All developments are to be water efficient.
 - Residential developments are expected to meet the requirement of 110 litres per person per day (including 5 litres _ for external water use).
 - _ Major developments and high or intense water use developments should include grey water recycling. Refurbishments and other non-domestic development will be expected to meet BREEAM water efficiency credits. _
- Section 3 all developments must not increase the risk of flooding and are required to utlise sustainable drainage systems.



APPENDIX B: BREEAM PRE-ASSESSMENT CHECKLIST



Client	Native Land
Project No.	14516-001
Date	04.03.2022
Revision	03
Status	Pre-assessment Tracker
Prepared by	Andreas Alygizos
Reviewed by	Andreas Alygizos

105 Judd Street BREEAM Pre-assessment tracker





BREEAM Checklist

14516-001 105 Judd Street

Key Targeted C Potential c require add Potential c to stretche Subject to	redits redits that ditional redits related d targets - confirmation	Ratings/ScoreUnclassified <30%Pass \geq 30%Good \geq 45%Very Good \geq 55%Excellent \geq 70%Outstanding \geq 85%				Targeted score 74.6% Excellent		
Credits Available	Targeted Credits	Credit Issue	Title	Aim	Mandatory Requirements	Assessment Criteria	Notes	Responsible Party
18	14	Management						
4	4	Man 01	Project Brief and design	To recognise and encourage an integrated design process that optimises building performance.		 1 credit: Prior to completion of RIBA Stage 2 - Identify stakeholders and prepare and undertake consultation 1 credit: Prior to completion of RIBA Stage 2 - all relevant third party stakeholders have been consulted by the design team. Prior to completion of RIBA Stage 4 - consultation feedback is given to all relevant parties 1 credit: BREEAM AP appointment no later than RIBA Stage 1. BREEAM performance targets are formally agreed by RIBA Stage 2. 1 credit: BREEAM AP appointment no later than RIBA Stage 1. BREEAM performance targets are formally agreed AND monitor progress against the agreed BREEAM performance targets 	 1st credit: A sustainability brief to be produced at Stage 1. The key stakeholders of the project should be identified and consultation meeting should be held prior to completion of stage 2. In defining the roles and responsibilities for each key phase of the project, the following must be considered: a. End user requirements b. Aims of the design and design strategy c. Particular installation and construction requirements / limitations d. Occupiers budget and technical expertise in maintaining any proposed systems e. Maintainability and adaptability of the proposals f. Requirements for the production of project and end user documentation g. Requirements for commissioning, training and aftercare support. 2nd credit: Consult 3rd party. Relates to consultation with prospective tenants, or leasing agents or other specialists consultants who provided advice on the needs of future tenants, to inform the design, in RIBA stage 2. The project brief to demonstrate the stakeholders' contributions prior to completion of stage 2. The project brief should demonstrate that consultation feedback has been provided to all relevant parties prior to completion of stage 4. 	Client - BREEAM AP [TBC]
4	1	Man 02	Life Cycle cost and service life planning	To deliver whole life value from investment and promote economic sustainability by recognising and encouraging the use and sharing of life cycle costing and service life planning to improve design, specification and through-life maintenance and operation.		 2 credits: At RIBA Stage 2 - An elemental life cycle cost (LCC) analysis 1 credit: At RIBA Stage 4 - a component level LCC analysis. The results of the analysis and consideration of LCC have been implemented. 1 credit: Report the capital cost for the building in pounds per m² 	 An outline, entire asset elemental life cycle cost (LCC) plan has been carried out at Process Stage 2 (equivalent to Concept Design - RIBA Stage 2) in line with 'Standardised method of life cycle costing for construction procurement' PD 156865:20081. The elemental LCC plan: The servicing strategy for the project outlining services component over a 15 -year period, in the form of an 'elemental LCC Plan'. Component level LCC option appraisal A component level LCC plan has been developed by the end of Process Stage 4 (equivalent to Technical Design – RIBA Stage 4) in line with PD 156865:2008 and includes the following component types: Newly specified local and/or core service equipment, e.g. boiler, air conditioning, air handling unit, and/or controls etc. Report the capital cost for the refurbishment/fit-out works in pounds per square metre 	Arcadis



Credits Available	Targeted Credits	Credit Issue	Title	Aim	Mandatory Requirements	Assessment Criteria	
6	6	Man 03	Responsible construction practices	To recognise and encourage construction-sites which are managed in an environmentally and socially considerate, responsible and accountable manner.	1 credit (Considerate Construction) - Mandatory for Excellent 2 credits (Considerate Construction) - Mandatory for Outstanding	 Pre-requisite: All timber to be 'legally harvested and traded timber' 1 credit: The principal contractor operates an EMS and practices pollution prevention policies and procedures on-site 1 credit: Appoint a sustainability champion during construction 1 credit: a CCS score between 25 and 34 (min. score of 5 in each section) OR 2 credits: a CCS score between 35 and 39 (min. score of 7 in each section) 2 credits credit: Monitor, record and report Energy and water consumption & Monitor, record and report Energy and water consumption AND Transport (construction materials & waste) 	
4	3	Man 04	Commissioning and handover	To encourage a properly planned handover and commissioning process that reflects the needs of the building occupants.	Criterion 10 (Building User Guide) - Mandatory for Excellent & Outstanding	 credit: Commissioning and testing schedule and responsibilities credit: Testing and inspecting building fabric credit: Specialist commissioning manager appointed during design stage to undertake design reviews, provide commissioning management and performance testing input credit: Building User Guide & training schedule for building occupiers/premises managers 	1 credit: Testing and inspectin to ensure continuity of insulat
N/A	N/A	Man 05	Aftercare	To provide post-handover aftercare to the building owner/occupants during the first year of occupation to ensure the building operates and adapts, where relevant, in accordance with the design intent and operational demands.	1 credit (Seasonal Commissioning) - Mandatory for Excellent & Outstanding	N/A	
Weightin g	12.80%						

Notes	Responsible Party
	Native Land/ Contractor
g building fabric - requires a thermographic survey produced tion and avoidance of thermal bridging and air leakage paths.	Native Land/ Contractor
N/A	N/A

Credits Available	Targeted Credits	Credit Issue	Title	Aim	Mandatory Requirements	Assessment Criteria	
15	10	Health and Wellbeir	ng				
6	2	Hea 01	Visual Comfort	Internal and External Lighting		Daylighting - Up to three credits: a. The relevant building areas meet good practice daylight factor(s) and other criterion as outlined in Table 12 and Table 13 : OR b. The relevant building areas meet good practice average and minimum point daylight illuminance criteria as outlined in Table 14. 4. 2 credits: daylighting provision, averaged over all relevant spaces, has improved after refurbishment or fit-out by 30% or more and there is a minimum glazing to floor area ratio of either: a. 5% glass to floor area ratio for ride windows; OR b. 2.5% glass to floor area ratio for side windows; OR b. 2.5% glass to floor area ratio for side windows; OR b. 2.5% glass to floor area ratio for side windows; OR b. 2.5% glass to floor area ratio for roof lights Urecredit: Average down and there is a minimum glazing to floor area ratio of either: a. 5% glass to floor area ratio for roof lights Up to two credits - View out 2 credits: 95% of the floor area in relevant building areas is within 7m of a wall which has a window or permanent opening that provides an adequate view out. 1 credit - Internal lighting 10. All fluorescent and compact fluorescent lamps are fitted with high frequency ballasts. 11. Internal lighting design strategy that provides illuminance levels in accordance with the SLL Code for Lighting 2012 and any other relevant industry standard. 12. For areas where computer screens are regularly used, the lighting design complies with CIBSE Lighting Gu	The architect to advise if the internal daylight levels (e.g. ti that of the existing building o for the proportion of glazing t
3	2	Hea 02	Indoor air quality	To recognise and encourage a healthy internal environment through the specification and installation of appropriate ventilation, equipment and finishes.	-	 1 Credit: An indoor air quality plan has been produced and implemented, with the objective of facilitating a process that leads to design, specification and installation decisions and actions that minimise indoor air pollution during the design, construction and occupation of the building 1 credit: Building design ensures minimum concentration and recirculation of pollutants in the building via fresh air provision and appropriate design of ventilation pathways. N/A for S&C: HVAC systems with suitable filtration & CO₂ or air quality sensors specified in areas with large and unpredictable/ variable occupancy. 1 credit: Potential for natural ventilation (Natural ventilation strategy) 	For ventilation credit: Check (a) location of air intakes and external pollution) OR design (b) open able windows/ventil <u>N/A for S&C assessments:</u> (c) specify CO ₂ or air quality sens Natural ventilation credit: Con comfort study AND specify ac considered non-feasible credit
N/A	N/A	Hea 03	Safe containment in laboratories	To recognise and encourage a healthy environment		N/A	

Notes	Responsible Party
ropose façade design could allow a potential increase in the e window-to-wall ratio post refurbishment is higher than the VLT of the new glazing is higher) and if the requirements o floor area can be met.	NDY Electrical
exhausts (≥10m apart, intakes ≥ 20m from sources of according to BS EN 13779:2007 Annex A2 itors are over 10m from sources of external pollution HVAC filtration according to BS EN 13779:2007 Annex 3, (d) ors in spaces with large/variable occupancy. Inpliance with CIBSE AM10 guidelines OR carry out thermal equate user control at low and high levels - However, this is for this development.	NDY Mechanical
N/A	N/A

	Credits Available	Targeted Credits	Credit Issue	Title	Aim	Mandatory Requirements	Assessment Criteria	Notes	Responsible Party
	3	3	Hea 04	Thermal comfort	To ensure that appropriate thermal comfort levels are achieved through design, and controls are selected to maintain a thermally comfortable environment for occupants within the building.		 1 credit: 1 credit: Thermal modelling as per CIBSE AM11 1 credit: Thermal comfort criteria for the projected climate change environment 1 credit: Thermal comfort zoning and control strategy informed by the thermal modelling analysis 		Thermal comfort specialist [TBC]
	2	2	Hea 05	Acoustic performance	To ensure the building's acoustic performance including sound insulation meet the appropriate standards for its purpose.		Two credits are available for indoor ambient noise and sound insulation, as relevant to the building type and function. A suitably qualified acoustician should be appointed to carry out and acoustic survey and provide design advice on how the relevant standards should be achieved. The measures suggested should be implemented and achieved at construction stage.	First credit: Acoustician should confirm indoor ambient levels will comply with the design ranges given in BS 8233:2014 for general room functions and section 7.5 of BS 8233:2014 for any acoustically sensitive rooms.	Acoustician
	1	1	Hea 06	Safety and security	To recognise and encourage effective measures that promote safe and secure use and access to and from the building.		A Suitably Qualified Security Specialist (SQSS) conducts an evidence based Security Needs Assessment (SNA) during or prior to Concept Design (RIBA Stage 2 or equivalent), see compliance note where the refurbishment or fit-out zone comprises part of a larger building. The SQSS develops a set of recommendations or solutions during or prior to Concept Design (RIBA Stage 2 or equivalent). These recommendations or solutions aim to ensure that the design of buildings, public and private car parks and public or amenity space are planned, designed and specified to address the issues identified in the preceding SNA. The recommendations or solutions proposed by the SQSS are implemented (see CN5.2. Any deviation from those recommendations or solutions will need to be justified, documented and agreed in advance with a suitably qualified security specialist.		Security Specialist [TBC]
W g	eightin	12.72%							

Credits Available	Targeted Credits	Credit Issue	Title	Aim	Mandatory Requirements	Assessment Criteria	Notes	Responsible Party
24	18	Energy						
15	11	Ene 01	Reduction of energy use and carbon emissions	To recognise and encourage buildings designed to minimise operational energy demand, consumption and CO ₂ emissions.	5 credits - Mandatory for Excellent 8 credits - Mandatory for Outstanding	Up to 15 credits (6 credits targeted): Carry out whole building energy model and calculate an Energy Performance Ratio (EPR _{NC}) using BREEAM's Ene 01 calculator.	BREEAM pre-assessment tool Inputs (from EPC): Building floor area (m ²) Reference building energy demand (KWh/m ² yr) Actual building heating and cooling energy demand (KWh/m ² yr) Reference building primary energy consumption (kWh/m ² yr) Actual building primary energy consumption (kWh/m ² yr) Reference building emission rate (TER) (kgCO ₂ /m ² yr) Building emission rate (BER) (kgCO ₂ /m ² yr)	NDY Sustainability
2	2	Ene 02	Energy monitoring	To recognise and encourage the installation of energy sub- metering that facilitates the monitoring of operational energy consumption.	1 credit (1st sub-metering credit) - Mandatory for Very Good, Excellent & Outstanding	1 credit: Energy metering systems for 90% of the estimated annual energy consumption of each fuel 1 credit: Sub-metering of high energy load and tenancy areas	Metering strategy guidance: CIBSE TM39 Building energy metering Office buildings metering requirements: 1. Office areas (metering by floor plate), 2. Catering Where applicable the following energy consuming systems should be sub-metered: Space heating, DHW, Humidification, Cooling, Ventilation (i.e. fans), Pumps, Lighting, Small power, Renewable, Low carbon systems, Controls, other major energy consuming systems/plant (e.g. cold storage).	NDY Mechanical/Electrical
1	1	Ene 03	External lighting	To recognise and encourage the specification of energy-efficient light fittings for external areas of the development.		1 credit: Energy-efficient external lighting with efficacy of at least 60 luminaire lumens per circuit watt is specified and all light fittings are controlled for the presence of daylight, and occupancy in areas of intermittent pedestrian traffic.		NDY Electrical
3	1	Ene 04	Low carbon design	To encourage the adoption of design measures, which reduce building energy consumption and associated carbon emissions and minimise reliance on active building services systems.		1 credit: Hea 04 criterion1 achieved + passive design solutions analysis at RIBA stage 2 1 credit: Above + free cooling strategies 1 credit: LZCT feasibility study (by RIBA stage 2)	As a minimum, the passive design analysis should cover: 1. Site location 2. Site weather 3. Microclimate 4. Building layout 5. Building orientation 6. Building form 7. Building fabric 8. Thermal mass or other fabric thermal storage 9. Building occupancy type 10. Daylighting strategy 11. Ventilation strategy 12. Adaptation to climate change.	Energy Specialist [TBC]
N/A	N/A	Ene 05	Energy efficient cold storage	To recognise and encourage the installation of energy efficient		N/A	N/A	N/A
3	3	Ene 06	Energy efficient transportation systems	To recognise and encourage the specification of energy efficient transportation systems.		 credit: Analysis of transport demand, usage and lifts, escalators, etc., energy usage, regenerative drives credits: Above + Specification of energy efficient lifts, escalators 	Regenerative drives: A regenerative drive should only be considered where it produces an energy saving greater than the additional standby energy used to support the drives. Regenerative drives will typically be appropriate for lifts with high travel and high intensity use. As such, if the project wishes to proceed without regenerative drives in lifts, this choice should be justified through relevant calculations.	Vertical Transport Consultant
N/A	N/A	Ene 07	Energy efficient laboratory systems	To recognise and encourage laboratory areas that are designed to be energy efficient		N/A	N/A	N/A
N/A	N/A	Ene 08	Energy efficient equipment	To recognise and encourage procurement of energy efficient equipment		N/A	N/A	N/A
N/A	N/A	Ene 09	Drying space	To provide a reduced energy means of drying clothes.		N/A	N/A	N/A
Weightin g	17.19%							

Credits Available Targeted Credits	Credit Issue	Title	Aim	Mandatory Requirements	Assessment Criteria	
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7	7	Transport				
3	3	Tra 01	Public transport accessibility	To recognise and encourage development in proximity of good public transport networks	Up to 3 credits - Accessibility Index The public transport Accessibility Index (AI) for the assessed building is calculated and BREEAM credits awarded according to the building type.	
1	1	Tra 02	Proximity to amenities	To encourage and reward a building that is located in close proximity to local amenities	1 credit: Where a building is located within close proximity of (max 500m distance), and accessible to, 2 of the below local amenities: Food outlet Cash machine Outdoor open space Recreation/leisure facility for fitness/sports	
2	2	Tra 03	Cyclist facilities	To encourage building users to cycle	 One credit - Cycle storage 1. Compliant cycle storage spaces that meet the minimum levels set out in Table 38 (see Checklists and tables) are installed. One credit - Cyclist facilities At least two of the following types of compliant cyclist facilities have been provided for all building users: a. Showers b. Changing facilities c. Lockers d. Drving spaces . 	
N/A	N/A	Tra 04	Maximum car parking capacity	To encourage the use of alternative means of transport other than the private car to and from the building	N/A	
1	1	Tra 05	Travel plan	To recognise the consideration given to accommodating a range of travel options	A travel plan has been developed as part of the feasibility and design stages. A site specific travel assessment/statement has been undertaken to ensure the travel plan is structured to meet the needs of the particular site and covers the following (as a minimum): a. Where relevant, existing travel patterns and opinions of existing building or site users towards cycling and walking so that constraints and opportunities can be identified. b. Travel patterns and transport impact of future building users. c. Current local environment for walkers and cyclists (accounting for visitors who may be accompanied by young children). d. Disabled access (accounting for varying levels of disability and visual impairment). e. Public transport links serving the site. f. Current facilities for cyclists. The travel plan includes a package of measures to encourage the use of sustainable modes of transport and movement of people and goods during the building's operation and use. If the occupier is known, they must be involved in the development of the travel plan and they must confirm that the travel plan will be implemented post refurbishment or fit-out and be supported by the building's management in operation.	

Notes	Responsible Party
	Transport consultant
	S+T / Transport consultant
	S+T
N/A	N/A
	Transport consultant

Credits Available	Targeted Credits	Credit Issue	Title	Aim	Mandatory Requirements	Assessment Criteria	Notes	Responsible Party
9	7	Water						
5	3	Wat 01	Water consumption	To reduce the consumption of potable water for sanitary use in new buildings from all sources through the use of water efficient components and water recycling systems.	1 credit - Mandatory for Good, Very Good, Excellent 2 credits - Mandatory for Outstanding	1 credit: 12.5% Improvement over baseline case 2 credits: 25% Improvement over baseline case 3 credits: 40% Improvement over baseline case 4 credits: 50% Improvement over baseline case 5 credits: 55% Improvement over baseline case	Fill in Wat 01 calculator to confirm no. of credits. Maximum flow rates proposed/assumed: - WC: 4 litres (effective flush volume) - Hand basin taps: 4.5 litres/min - Showers: 6 litres/min - Urinals: 1.5 litres/bowl/hour - Kitchen taps (kitchenette): 5 litres/min - Kitchen taps (kitchenette): 5 litres/min - Kitchen taps (pre-rinse nozzles only): 7.30 litres/min - Waste disposal unit: 0 litres/minute - Domestic sized dishwashers: 12 litres/cycle - Commercial sized dishwashers: 5 litres/rack	S+T
1	1	Wat 02	Water monitoring	To ensure water consumption can be monitored and managed and therefore encourage reductions.	Specification of a water meter on the mains water supply to each building (Criterion 1) - Mandatory for Good, Very Good, Excellent & Outstanding	 1 credit: Specifying a water meter, with pulsed output, on the mains water supply to each building (including borehole or other source). Water-consuming plant or building areas, (with 10% or more of the total water demand) fitted with sub meters or water monitoring equipment. Each meter to have pulsed/other protocol communication output to enable connection to a utility monitoring/BMS system. 	Only water-consuming plant/building areas identifiable by the developer should be included in the assessment of this issue. In shopping centres separate sub-meters should be fitted on the supply to the following areas (where present): - Each individual unit supplied with water - Common areas (covering the supply to toilet blocks) - Service areas (covering the supply to outlets within storage, delivery, waste disposal areas, etc.) - Ancillary/separate building to the main development with water supply.	NDY PH
2	2	Wat 03	Water leak detection	To reduce the impact of water leaks that may otherwise go undetected.		 credit: A compliant leak detection system is specified or installed on the building's water supply. credit: Flow control devices are fitted to each WC area/facility according to demand. 	The leak detection system must be: a. A permanent automated water leak detection system that alerts the building occupants to the leak OR an inbuilt automated diagnostic procedure for detecting leaks is installed. b. Activated when the flow of water passing through the water meter/data logger is at a flow rate above a pre-set maximum for a pre-set period of time. c. Able to identify different flow and therefore leakage rates, e.g. continuous, high and/or low level, over set time periods. d. Programmable to suit the owner/occupiers' water consumption criteria. e. Where applicable, designed to avoid false alarms caused by normal operation of large water-consuming plant such as chillers.	NDY PH
1	1	Wat 04	Water efficient equipment	To reduce unregulated water consumption by encouraging specification of water efficient equipment.		 credit: The design team has identified all unregulated water demands that could be realistically mitigated or reduced. System(s) or processes have been identified to reduce the unregulated water demand, and demonstrate, through either good practice design or specification, a meaningful reduction in the total water demand of the building. 	It has been assumed that the building will comprise planted areas. If not, this credit becomes not applicable and the weighting factors of each category will need to be revised accordingly. The credit can be awarded if plants that do not require irrigation are proposed or if this is not possible, a water efficient irrigation system is to be installed.	Landscape architect/ NDY PH
Weightin g	7.47%							

Credits Available	Targeted Credits	Credit Issue	Title	Aim	Mandatory Requirements	Assessment Criteria	Notes	Responsible Party
13	10	Materials						
6	6	Mat 01	Life cycle impacts	To recognise and encourage the use of construction materials with a low environmental impact (including embodied carbon) over the full life cycle of the building.		Option 1 - 3 credits - Project lifecycle assessment study The project uses Green Guide Ratings to measure the life cycle environmental impact of the refurbishment works. Option 1 - Up to 6 credits: The project uses a life cycle assessment (LCA) tool or undertakes a building information model life cycle assessment (BIM LCA) to measure the life cycle environmental impact of the refurbishment or fit-out works.		S+T / LCA consultant [TBC]
N/A	N/A	Mat 02	Hard landscaping and boundary protection	To recognise and encourage the specification of materials that have a low environmental impact		N/A	N/A	N/A
4	2	Mat 03	Responsible sourcing of materials	To recognise and encourage the specification and procurement of responsibly sourced materials for key building elements.	All timber and timber based products used on the project is 'Legally harvested and traded timber' - Mandatory for ALL levels	Pre-requisite: Confirmation that all timber used on the project is sourced in accordance with the UK Government's Timber Procurement Policy. 1 credit: The principal contractor sources materials in accordance with a documented sustainable procurement plan. Up to 3 credits: Based on the achieved Responsible Sourcing of Materials (RSM) points: 1 credit: RSM point = 18% 2 credits: RSM point = 36% 3 credits: RSM point = 54%	Architect/Contractor to confirm no. of credits targeted. Suggestion: Architect to coordinate with contractor, check BRE's acceptable RS schemes <http: 80652gn18-v2-0-final.pdf="" filelibrary="" guidance%20notes="" www.breeam.org=""> and fill in Mat 03 calculator</http:>	S+T
1	1	Mat 04	Insulation	To recognise and encourage the use of thermal insulation which has a low embodied environmental impact relative to its thermal properties		1 credit: Insulation index for the building fabric and services insulation is the same as or greater than 2.5	Suggestion: Mat 04 to be provisionally filled in by both the architect and the MEP engineer	S+T/ NDY Mechanical
1	1	Mat 05	Designing for durability and resilience	To recognise and encourage adequate protection of exposed elements of the building and landscape, therefore minimising the frequency of replacement and maximising materials optimisation.		 Protecting vulnerable parts of the building from damage 1. The building incorporates suitable durability and protection measures or designed features/solutions to prevent damage to vulnerable parts of the internal and external building and landscaping elements. This must include, but is not necessarily limited to: a. Protection from the effects of high pedestrian traffic in main entrances, public areas and thoroughfares b. Protection against any internal vehicular/trolley movement within 1m of the internal building fabric in storage, delivery, corridor and kitchen areas. c. Protection against, or prevention from, any potential vehicular collision where vehicular parking and manoeuvring occurs within 1m of the external building façade for all car parking areas and within 2m for all delivery areas. Protecting exposed parts of the building from material degradation 2. Environmental factors have been identified that are relevant to the site location 3. Existing applicable building elements that are exposed to any relevant environmental factors have been identified 4. Existing applicable building an assessment to grade the severity of any degradation effects. Design and specification measures have been developed to repair and protect existing elements according to the severity of any degradation affects, to limit degradation. Where it is not feasible to implement measures to limit material degradation for existing elements, justification should be provided. 5. Newly specified materials or newly constructed elements (e.g. a new external wall) within the scope of refurbishment or fit-out works incorporate appropriate design and specification measures to limit material degradation due to environmental factors. 		S+T
1	0	Mat 06	Material efficiency	To recognise and encourage measures to optimise material efficiency in order to minimise environmental impact of material use and waste.		1 credit: Identify and implement measures at each RIBA stage to optimise the use of materials in building design, procurement, construction, maintenance and end of life.	Opportunities should be identified (by the design and construction team), and appropriate measures investigated and implemented, to optimise the use of materials in building design, procurement, construction, maintenance and end of life. This should be carried our in consultation with the relevant parties (CN3) at each of RIBA stages 1 to 5.	. S+T
Weightin	15.55%							

g 15.55%

Credits Available	Targeted Credits	Credit Issue	Title	Aim	Mandatory Requirements	Assessment Criteria	Notes	Responsible Party
11	7	Waste						
7	3	Wst 01	Construction waste management	To promote resource efficiency via the effective management and reduction of construction waste.	1 credit - Mandatory for Outstanding	1 credit: Pre-refurbishment audit Up to 2 credits: Re-use and direct recycling of materials Up to 3 credits: Resource Management Plan (RMP) developed AND pre-demolition audit Amount of non-hazardous on-site/off-site construction waste (m ³ /100m ² or tonnes/100m ²) generated: 1 credit: 11.3 m ³ /100m ² / 3.5 tonnes/100m ² 2 credits: 4.5 m ³ /100m ² / 1.2 tonnes/100m ² 3 credits: 2.1 m ³ /100m ² / 0.4 tonnes/100m ² 1 credit: Diversion of resources from landfill Demolition = 90% by volume / 95% by tonnage Refurbishment/Fit out = 85% by volume / 90% by tonnage	The pre-refurbishment audit is required to be carried out during RIBA Stage 2.	Native Land
N/A	N/A	Wst 02	Recycled aggregates	To recognise and encourage the use of recycled and secondary aggregates, thereby reducing the demand for virgin material and optimising material efficiency in construction.		N/A	N/A	N/A
1	1	Wst 03	Operational waste	To recognise and encourage the provision of dedicated storage facilities for a building's operational-related recyclable waste streams, so that this waste is diverted from landfill or incineration.	1 credit - Mandatory for Excellent & Outstanding	 credit - Operational waste Dedicated space(s) is provided for the segregation and storage of operational recyclable waste volumes generated by the assessed building/unit, its occupant(s) and activities. 	The waste facilities must be: a. Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams b. Accessible to building occupants or facilities operators for the deposit of materials and collections by waste management contractors c. Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily/weekly operational activities and occupancy rates.	S+T
1	1	Wst 04	Speculative floor and ceiling finishes	To encourage the specification and fitting of floor and ceiling finishes selected by the building occupant and therefore avoid unnecessary waste of materials.		1 credit (office buildings only): Carpets, other floor finishes and ceiling finishes have been installed in a show area only (one floor plate or individual office or <25% of the net lettable floor area)		S+T

Credits Available	Targeted Credits	Credit Issue	Title	Aim	Mandatory Requirements	Assessment Criteria	Notes	Responsible Party
1	1	Wst 05	Adaptation to climate change	To recognise and encourage measures taken to mitigate the impact of extreme weather conditions arising from climate change over the lifespan of the building.		1 credit: Conduct a climate change adaptation strategy appraisal for structural and fabric resilience by the end of Concept Design (RIBA Stage 2 or equivalent),	The climate change adaptation strategy should be developed in accordance with the following approach: a. Carry out a systematic (structural and fabric resilience specific) risk assessment to identify and evaluate the impact on the building over its projected life cycle from expected extreme weather conditions arising from climate change and, where feasible, mitigate against these impacts. The assessment should cover the following stages: i. Hazard identification ii. Hazard assessment iii. Risk estimation iv. Risk evaluation v. Risk management.	S+T/HTS
1	1	Wst 06	Functional adaptability	To recognise and encourage measures taken to accommodate future changes of use of the building over its lifespan.		1 credit : A building specific functional adaptation strategy study at RIBA Stage 2 . Implement functional adaptation measures at RIBA Stage 4 .	 Functional adaptability strategy should consider: The potential for major refurbishment, including replacing the façade. Design aspects that facilitate the replacement of all major plant within the life of the building, e.g. panels in floors/walls that can be removed without affecting the structure, providing lifting beams and hoists. The degree of adaptability of the internal environment to accommodate changes in working practices. The degree of adaptability of the internal physical space and external shell to accommodate change in-use. The extent of accessibility to local services, such as local power, data infrastructure etc. Information on functional adaptation implementation should be made available to the assessor covering: The feasibility for multiple/alternative building uses and area functions, e.g. related to structural design of the building. Options for multiple building uses and area functions based on design details, e.g. modularity. Routes and methods for major plant replacement, e.g. networks and connections have flexibility and capacity for expansion. Accessibility for local plant and service distribution routes, e.g. detailed information on building conduits and connections infrastructure. 	S+T
Weightin g	8.55%							

and a grade of the second state of the second se	Assessment Criteria	Mandatory Requirements	Aim	Title	Credit Issue	Targeted Credits	Credits Available
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3					Requirements	Assessment Criteria	Notes	Party
	3	Land Use & Ecology						
N/A	N/A	LE 01	Site selection	To encourage the use of previously occupied and/or contaminated land		N/A	N/A	N/A
N/A	N/A	LE 02	Ecological value of site and protection of ecological features	To encourage development on land that already has limited value to wildlife		N/A	N/A	N/A
N/A	N/A	LE 03	Minimising impact on existing site ecology	To minimise the impact of a building development on existing site ecology		N/A	N/A	N/A
1	1	LE 04	Enhancing site ecology	To encourage actions taken to enhance the ecological value of the site as a result of development.		A suitably qualified ecologist (SQE) has been appointed by the client or their project representative by the end of the Preparation and Brief stage (RIBA Stage 1 or equivalent) to advise on enhancing the ecology of the site at an early stage. The SQE has provided an Ecology Report with appropriate recommendations for the enhancement of the site's ecology at Concept Design stage (RIBA Stage 2 or equivalent). The report is based on a site visit/survey by the SQE. The early stage advice and recommendations of the Ecology Report for the enhancement of site ecology have been, or will be, implemented in the refurbishment zone.	It has been assumed that the proposed scheme will comprise areas of soft landscaping. If not this credit becomes not applicable and the weighting factors in each category will need to be revised accordingly.	Ecologist [TBC]
2 Weightin	2	LE 05	Long term impact on biodiversity	To minimise the long term impact of the development on the site		Where a Suitably Qualified Ecologist (SQE) is appointed prior to commencement of activities on-site and they confirm that all relevant UK and EU legislation relating to the protection and enhancement of ecology has been complied with during the refurbishment process. Where a landscape and habitat management plan, appropriate to the site, is produced covering at least the first five years after project completion in accordance with BS 42020:2013 Section 11.1. This is to be handed over to the building owner/occupants for use by the grounds maintenance staff. Where additional measures to improve the assessed site's long term biodiversity are adopted, according to Table 69 of the BREEAM RFO manual.		Ecologist [TBC]

g 7.47%

Credits Available	Targeted Credits	Credit Issue	Title	Aim	Mandatory Requirements	Assessment Criteria	
13	6	Pollution					
3	1	Pol 01	Impact of refrigerants	To reduce the level of greenhouse gas emissions arising from the leakage of refrigerants from building systems.	Pre-requisite: All systems comply with the requirements of BS EN 378:2008 and where refrigeration systems containing ammonia are installed, the Institute of Refrigeration Ammonia Refrigeration Systems Code of Practice.	3 credits: No refrigerant use Pre-requisite: All systems comply with the requirements of BS EN 378:2008 and where refrigeration systems containing ammonia are installed, the Institute of Refrigeration Ammonia Refrigeration Systems Code of Practice. 2 credits: Where the systems using refrigerants have Direct Effect Life Cycle CO ₂ equivalent emissions (DELC CO ₂ e) of ≤100 kgCO ₂ e /kW cooling/heating capacity. To calculate the DELC CO ₂ e please refer to the Relevant definitions in the Additional information section and the Methodology section. OR Where air-conditioning or refrigeration systems are installed the refrigerants used have a Global Warming Potential (GWP) ≤ 10. 1 credit: Where the systems using refrigerants have Direct Effect Life Cycle CO ₂ equivalent emissions (DELC CO ₂ e) of ≤ 1000 kgCO ₂ e/kW cooling/heating capacity. 1 credit: Where asystems using refrigerants have a permanent automated refrigerant leak detection system installed; OR where an in-built automated diagnostic procedure for detecting leakage is installed.	MEP Engineer to confirm no. o
3	0	Pol 02	NOx emissions	To encourage the supply of heat and/or coolth from a system that minimises NOx emissions, and therefore reduces pollution of the local environment.		 credit: The dry NOx emissions from delivered space heating and hot water demand are ≤100 mg/kWh (at 0% excess O₂). credits: Dry NOx emissions are ≤70 mg/kWh. credits: Dry NOx emissions are ≤40 mg/kWh. 	Where grid electricity is used assumed to be 617 mg/kWh f emissions from grid electricity mix in the UK.

Notes	Responsible Party
of credits that can be targeted.	NDY Mechanical
to supply a heating system, the NOx emissions should be or the purpose of BREEAM. This is to reflect the likely NOx over the next 10 years based on the predicted generation	NDY Mechanical

Credits Available	Targeted Credits	Credit Issue	Title	Aim	Mandatory Requirements	Assessment Criteria	
5	3	Pol 03	Surface water run-off	To avoid, reduce and delay the discharge of rainfall to public sewers and watercourses, thereby minimising the risk and impact of localised flooding on and off-site, watercourse pollution and other environmental damage.		 2 credits - Low flood risk 1. A flood risk assessment is carried out to confirm the development is situated in a flood zone that is defined as having a low annual probability of flooding; OR 2. The project meets the requirements if it is benefited by existing flood defences that reduce the flood risk to a low or medium level. 1 credit - Neutral impact on surface water 7. There is no increase in the impermeable surfaces as a result of the refurbishment works; OR 8. If there is an increase in the impermeable surface as a result of the refurbishment works then the following must be met: Hard standing areas - where there is an increase in the total impermeable area, the hardstanding area must be permeable or be provided with on-site SuDS to allow full infiltration of the additional volume, to achieve the same end result. 2 credits - Reducing run-off An Appropriate Consultant has been used to design an appropriate drainage strategy for the site. 10. Either of the following criteria are met: The res is a decrease in the impermeable area by 50% or more, from the pre-existing impermeable hard surfaces; OR Where run-off as a result of the refurbishment for the 1 in 100 year event has been reduced by 50% from the existing site. The total volume of run-off discharged into the watercourses and sewers as a result of the refurbishment, for a 1 in 100 year event of 6 hour duration has been reduced by 50%. An allowance for climate change must be included for all of the above calculations; this should be made in accordance with current best practice planning guidance. 1 credit - Minimising water course pollution There is no discharge from the developed site (includes new and existing hard landscaping and buildings) for rainfall up to 5mm (confirmed by the Appropriate Consultant). Where suitable pollution prevention measures are put in place (or already e	Pre existing flood defences In an area protected by existin of flooding) the appropriate no defences reduce the risk to 'lo 1. The site is not located in an constructed to minimise the ri purpose of the site and/or its v 2. The relevant agency confirm occurring is reduced to low or credit cannot be awarded. A statutory body's local/regior existing defences in the area in
1	1	Pol 04	Reduction of night time light pollution	To reduce the likelihood of noise from the new development affecting nearby noise-sensitive buildings.		 credit: External lighting design in line with ILP Guidance notes for the reduction of obtrusive light, 2011. Daylight cut- off for general external lighting. All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00. 	If safety or security lighting is p of the lighting system complies these hours in Table 2 of the IL Illuminated advertisements, w 05 The Brightness of Illuminate
1	1	Pol 05	Reduction of noise pollution	To reduce the likelihood of noise from the new development affecting nearby noise-sensitive buildings.		1 credit: Where there are, or will be, no noise-sensitive areas or buildings within 800m radius of the assessed site. OR where the building does have noise-sensitive areas or buildings within 800m radius of the site, a noise impact assessment is carried out in compliance with BS 7445 by a suitably qualified acoustician, along with any remediation's.	The noise impact assessment r consultant holding a recognise acoustic qualification and men definitions in the Additional information section). The noise level from the prope or most exposed noise sensitiv the day (07:00 to 23:00) and + noise level. Where the noise source(s) from described above, measures ha level where it will comply with

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Responsible Party Notes ng flood defences (designed to withstand a certain magnitude umber of flood risk credits can be awarded where the ow' or 'medium' and the following conditions are met: area where new flood defences have to be, or have been, isk of flooding to the site and its locality purely for the HTS wider master plan. ns that, as a result of such defences, the risk of a flood event medium risk. If firm confirmation is not provided then the nal office may be able to provide more information on n which the assessed site is located. provided and will be used between 23:00 and 07:00, this part es with the lower levels of lighting recommended during LP's Guidance notes. NDY Electrical where specified, must be designed in compliance with ILP PLG ed Advertisements. must be carried out by a suitably qualified acoustic mbership of an appropriate professional body (see Relevant osed site/building, as measured in the locality of the nearest ve development, is a difference no greater than +5dB during Acoustician -3dB at night (23:00 to 07:00) compared to the background m the proposed site/building is greater than the levels ave been installed to attenuate the noise at its source to a n the above limits.

Credits Available	Targeted Credits	Credit Issue	Title	Aim	Mandatory Requirements	Assessment Criteria	Notes	Responsible Party
		_						
10	1	Innovation						
1	1	Inn 01 - Man 03	Responsible construction practices - Exemplary	To support innovation within the construction industry		1 credit: CCS score of 40 or more		PM/Client
N/A	N/A	Inn 02 - Man 05	Aftercare - Exemplary	To support innovation within the construction industry				
N/A	N/A	Inn 03 - Hea 01	Visual comfort - Exemplary	To support innovation within the construction industry		N/A	N/A	N/A
N/A	N/A	Inn 04 - Hea 02	Indoor Air Quality - Exemplary	To support innovation within the construction industry		N/A	N/A	N/A
5	0	Inn 05 - Ene 01	Reduction of energy use and carbon emissions - Exemplary	To support innovation within the construction industry		Up to 5 credits: Based on the percentage of 'regulated' operational energy consumption generated by carbon neutral on-site or near-site sources <u>1 credit</u> : 10% <u>2 credits</u> : 20% <u>3 credits</u> : 50% <u>4 credits</u> : 80% <u>5 credits</u> : >100%		MEP Engineer
1	0	Inn 06 - Wat 01	Water Consumption - Exemplary	To support innovation within the construction industry		1 credit: 65% improvement over baseline case.		Architect

Credits Available	Targeted Credits	Credit Issue	Title	Aim	Mandatory Requirements	Assessment Criteria	Notes	Responsible Party
							When choosing Route 2, the design team should also:	
3	0	Inn 07 - Mat 01	Life cycle impacts - Exemplary	To support innovation within the construction industry		Route 1 (1 credit): Where assessing four or more applicable building elements, the building achieves at least two points in addition to the total points required to achieve maximum credits under the standard BREEAM criteria Route 2 (2 credits): Where the design team has used an IMPACT compliant software tool (or equivalent) to measure the environmental impact of the building.	 demonstrate how the use of an IMPACT compliant software (or equivalent) has benefited the building in terms of measuring and reducing its environmental impact. submit the building information model (BIM) from the IMPACT compliant software tool (or equivalent) for the assessed building to BRE Global (via the project's appointed BREEAM Assessor). 	LCA consultant
1	0	Inn 08 - Mat 03	Responsible Sourcing of Materials - Exemplary	To support innovation within the construction industry		1 credit: RSM point = 70%	-	Architect
1	0	Inn 09 - Wst 01	Construction Waste Management - Exemplary	To support innovation within the construction industry		1 credit: Amount of non-hazardous on-site/off-site construction waste (m ³ /100m ² or tonnes/100m ²) generated = 1.4 /0.3 Divert from landfill (volume or tonnage) Demolition = 95%/97% Non-demolition = 95%/97% Key waste groups identified for diversion at pre-construction stage RMP	-	PM/Client
N/A	N/A	Inn 10 - Wst 02	Recycled Aggregates - Exemplary	To support innovation within the construction industry		N/A	N/A	N/A
N/A	N/A	Inn 11 - Wst 05	Adaptation to climate change	To support innovation within the construction industry		N/A	N/A	N/A
1	0	Inn 12	Approved Innovation credits	To support innovation within the construction industry		Approved Innovation	-	
Weightin g	10.0%							

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NDY QA SYSTEM

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Revision Date:	13 April 2022
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Client Contact:	George Grace
Project Leader:	Mike Arnold
Editor:	Andreas Alygizos
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105 Judd Street | Sustainability Statement Report



Verification By: Mike Arnold

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