elliottwood

3-5 Bedford Row, London, WC1R 4BU

Sustainability Statement

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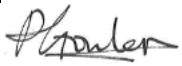
Date:	12/10/2022	Signature:		Signature:		Signature:	

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Executive Summary

Elliott Wood is appointed by FREP 4 (Bedford Row) Limited ('the Applicant') to produce a Sustainability Statement in support of an application for full planning permission for the proposed refurbishment of 3-5 Bedford Row and 3-5 Jockey's Fields ('the Site'), a Grade II Listed building within the London Borough of Camden.

Table 1 summarises the Applicant's response to the relevant policies within the Camden Local Plan (2017). The planning application is not referable to the Mayor of London; however, relevant policies within the London Plan (2021) have been used as a point of reference. This report should be read in conjunction with other relevant consultant reports.

Table 1: Applicant response to relevant planning policies

Relevant Local Plan policies	Relevant policy requirements	Applicant's response
CC2 Adapting to climate change	- Demonstrate resilience to climate change within a Sustainability Statement - Non-domestic developments of 500m^2 or above are required to achieve a BREEAM 'excellent' rating	Climate change adaptation measures are summarised within this Sustainability Statement. This includes measures to protect and promote green infrastructure; incorporate bio-diverse green roofs; and reduce overheating. The development is targeting a BREEAM 'excellent' rating.
D1 Design	- Incorporate best practice in resource management and climate change mitigation and adaptation - Sustainable and durable construction - Adaptable to different activities and land uses	The project team are aiming to develop a high-quality, durable design that includes measures to facilitate future adaptation. Measures to adapt to future climate change will be incorporated (as outlined above).
A1 Managing the impact of development	- Visual privacy, outlook - Sunlight, daylight and overshadowing - Artificial lighting levels - Transport impacts - Impacts of the construction phase - Noise and vibration levels - Odour, fumes and dust - Microclimate - Contaminated land; and - Impact upon water and wastewater infrastructure	Impacts on neighbouring properties (and the local community) have been reviewed and either eliminated or reduced to acceptable levels. This includes potential impacts on visual privacy, sunlight/daylight/overshadowing, use of artificial external lighting, and potential disturbance and pollution during construction (noise, dust, vibration). A Travel Plan, Noise Assessment, and Daylight and Sunlight Assessment will be submitted with the planning application.
C5 Safety and security	- Incorporate design principles which contribute to community safety and security - Include appropriate security and community safety measures	The development will incorporate appropriate, site-specific security controls, including crime prevention through environmental design, tested and certified security products, and technological security measures.
C6 Access for all	- Remove the barriers that prevent everyone from accessing facilities and opportunities.	The development will meet the highest practicable standards (within the confines of a listed building) of accessible and inclusive design so that it can be used safely, easily and with dignity by all.

Relevant Local Plan policies	Relevant policy requirements	Applicant's response
CC1 Climate change mitigation	- Reduce CO_2 emissions through following the steps in the energy hierarchy - Minimise the need to travel by car - Sensitive energy efficiency improvements to existing buildings - (Proposals that involve substantial demolition) demonstrate that it is not possible to retain and improve the existing building - Optimise resource efficiency - Assess the feasibility of connecting to an existing decentralised energy network	Further information on measures to reduce CO_2 emissions can be found in the accompanying Energy Strategy. The energy hierarchy has been followed; the development is car-free; the energy performance of the existing building will be improved via sensitive interventions; the existing buildings on site will not be demolished. In this instance it will not be feasible to connect to a decentralised energy network.
C1 Health and wellbeing	- Positively contribute to creating high quality, active, safe and accessible places	It is the Applicant's intention to provide a high-quality space that positively contributes to the health and wellbeing of occupants.
A4 Noise and vibration	- Ensure that noise and vibration is controlled and managed	As the development is not classed as 'major' and does not include substantial demolition there is minimal risk of noise and vibration. During construction steps will be taken to ensure that responsible construction management practices are implemented.
CC4 Air quality	- Mitigate the impact of development on air quality - Ensure that exposure to poor air quality is reduced in the borough	The development is not likely to expose residents to high levels of air pollution; an AQA is therefore not deemed to be necessary. The development will be fully electric, all heating and hot water will be supplied by non-combustion systems.
T1 Prioritising walking, cycling and public transport	- Promote sustainable transport by prioritising walking, cycling and public transport - Provide accessible, secure cycle parking facilities - Make provision for high quality facilities that promote cycle usage including changing rooms, showers, dryers and lockers	The development includes accessible, secure cycle parking facilities, along with high-quality facilities that promote cycle usage. This includes showers, changing areas, a drying room and lockers.
T2 Parking and car-free development	- Limit the availability of parking and require all new developments in the borough to be car-free	The development will be car-free.
A3 Biodiversity	- Realise benefits for biodiversity through the layout, design and materials used in the built structure and landscaping - Demolition and construction phase of development to be planned to avoid disturbance to habitats and species and ecologically sensitive areas, and the spread of invasive species	Opportunities to improve local biodiversity have been explored. The baseline condition of the current site has been assessed by an ecologist and measures will be implemented to improve the ecological value of the site and create new habitats. Construction will be timed to avoid any disturbance to habitats and species. The site does not include any invasive species.

Relevant Local Plan policies	Relevant policy requirements	Applicant's response
CC3 Water and flooding	- 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) - Incorporate flood resilient measures in areas prone to flooding - Utilise Sustainable Drainage Systems (SuDS) in line with the drainage hierarchy to achieve a greenfield run-off rate where feasible - Not locate vulnerable development in flood-prone areas.	Further information on flood risk, surface water run-off and sustainable drainage systems is provided in the Flood Risk Assessment and Drainage Strategy. The development will incorporate water efficiency measures. No harm will be caused to the water environment and water quality will be improved. The site is not at risk of flooding. SuDS will be utilised in line with the drainage hierarchy to achieve a reduction in surface water run-off.
CC5 waste	- Meet the London Plan targets of 50% of household waste recycled/composted by 2020 (aspiring to achieve 60% by 2031) - Make sure that developments include facilities for the storage and collection of waste and recycling	The development will include adequate facilities for recycling and the storage and disposal of waste. This will include a suitably sized, clearly labelled area for storing recyclable waste prior to collection.

Two

Introduction

Elliott Wood is appointed by FREP 4 (Bedford Row) Limited ('the Applicant') to produce a Sustainability Statement in support of an application for full planning permission for the proposed refurbishment of 3-5 Bedford Row and 3-5 Jockey's Fields ('the Site') a Grade II Listed building within the London Borough of Camden.

The purpose of this document is to address the relevant policies outlined in the Camden Local Plan (2017). As such it summarises and references various other supporting documents, which are included within the full planning application. This report should be read in conjunction with other relevant consultant reports.

The planning application is not referable to the Mayor of London and is not classed as a 'major development'; however, relevant policies within the London Plan (2021) have been used to guide the project's sustainability strategy.

This report is for the sole use of Frogmore, for whom the report is undertaken and cannot be relied upon by third parties for any use whatsoever without the express authority of Elliott Wood.

2.1 Existing site

The site is situated within the London borough of Camden and is located between Bedford Row and Jockey's Fields. Gray's Inn Gardens are located to the rear of the property. The site is approximately 370m from away from both Chancery Lane and Holborn Underground stations. It is located on OS Grid reference TQ 30862 81738.

The site is rectangular on plan, measuring approximately 21m x 42m (0.088ha). The site has pedestrian access via both the Bedford Row and Jockey's Fields elevations. The site has vehicle access to the basement level via a ramp from Jockey's Fields. The site shares two party walls with commercial offices.

From historical archive information, the original properties contained within 3-5 Bedford Row are revealed to form part of seven individual terrace properties that were built between 1717 and 1718. Old maps show that the building to the rear (located on Jockey's Fields) was a stable building with a dwelling above. It can later be seen converted to offices in 1888.

During World War II the buildings in the area experienced blast damage and were either repaired or rebuilt depending on the extent of the damage. Between 1961-63 the current site was formed. From archive drawings and visual inspections, it appears that three of the original adjacent terrace buildings (3, 4, and 5) were demolished between party walls, along with the stable building to the rear, and infilled with an RC frame across the full site.

Further information on the structure of the existing buildings can be found within the Stage 2 Structural Engineering Report.

2.2 Development description

Internal refurbishment of 3-5 Bedford Row and 3-5 Jockey's Fields for continuing commercial use of the building (Class E), together with external alterations to all elevations, and the erection of roof extensions at fourth, third and second-floor levels, roof terraces at levels four and three, green roofs and basement courtyard garden, cycle parking, waste/recycling storage, plant, and other associated works.

2.3 Sustainability aims and objectives

At present, neither 3-5 Bedford Row nor 3-5 Jockey's Fields deliver the key sustainability targets required for a modern office building (occupant health and wellbeing, energy efficiency, sustainable transport, or biodiversity). Furthermore, it is unlikely the existing building will be resilient to future climate change. Intervention is required to guarantee the buildings' future as a high-quality office space.

A key aim of the proposed redevelopment is to significantly improve energy efficiency, without harming the character and appearance of the neighbouring area. Existing building services have accrued haphazardly, which contributes to the buildings' inefficiency. The proposed development will address this by replacing all building services in line with an overarching, holistic strategy that seeks to optimise occupant comfort and reduce carbon emissions.

2.4 Design team philosophy

2.4.1 FREP 4 (Bedford Row) Limited

The client, FREP 4 (Bedford Row) Limited, is committed to responsible investment. Environmental, social and corporate (ESG) governance is central to Frogmore's philosophy of doing 'Property, Properly'. The implementation of ESG considerations at a project level is underpinned by Frogmore's guiding principles of creating:

- Exemplary buildings benefitting the environment by striving for maximum carbon reduction and resource efficiency, renewing rather than re-building.
- Happy, healthy and thriving places to live and/or work, breathing new life into tired buildings to support the livelihood of workers, residents and the local community.
- Development that is truly sustainable, conceived in collaboration with the local stakeholders so that it addresses the needs and aspirations of the entire community and delivers better outcomes for all.

Frogmore is a signatory to the UN-supported Principles for Responsible Investment (PRI) and is committed to the PRI's six Principles of Responsible Investment:

1. Incorporate ESG issues into investment analysis and decision-making processes.
2. Be active owners and incorporate ESG issues into ownership policies and practices.
3. Seek appropriate disclosure on ESG issues by the entities into which investments are made.
4. Promote acceptance and implementation of the Principles within the investment industry.
5. Work together to enhance effectiveness in implementing the Principles.
6. Report on activities and progress towards implementing the Principles.

2.4.2 HUT Architecture

As a practice HUT aims to make places to live, work and play that are sustainable not just in terms of their embodied and operational energy, but also in their broader social context. Four key values underpin HUT's approach to design:

1. *Re-imagine* – re-use rather than demolish, repair rather than discard. We look to reinvent how buildings and structures can have a life beyond their original purpose
2. *Delight* – we believe that joy is just as important as function. Seed the unexpected and create escapism through architecture
3. *Patina* – imagine spaces both now and in the future; work with materials that endure, grow in character and develop patina with time and use
4. *Enrichment* – architecture should be transformative for those that experience it. It should enrich the lives of its immediate users and the community & environment in which it sits. We endeavour to leave a positive legacy

Many of HUT's projects are mixed use, retrofit, located within tight urban sites, and involve Listed Buildings; all are approached with an open mind and enthusiasm to create the most appropriate response to the brief. HUT continue to work towards low carbon and embrace the circular economy, reducing waste through the inventive upcycling of sites, building uses, and materials.

2.4.3 Elliott Wood

Elliott Wood's portfolio is extraordinarily diverse, and we particularly enjoy those projects which provide the opportunity to engineer for the common good – from making dramatic improvements to the life of a town or city, through to nurturing a new generation of exceptional engineers in our own in-house academy.

Despite more than twenty years in practice, we continue to be curious and find ways to pass on the benefit of our collective experience. We foster enquiring minds and share ideas because we know that this knowledge can make a real difference to our clients.

In collaboration with the project team, Elliott Wood has led the development of the sustainability strategy for the project based on a combination of leading edge thinking and client aspirations. We continually challenge the status quo and aim to shift the construction industry to do better, via research & development, active participation in industry wide initiatives and projects.

2.4.4 CrEAM Engineering Services

CrEAM Engineering Services are appointed as MEP consultants on the project. The company was formed in 2021; however, its members have a wealth of experience delivering MEP solutions that deal with complex challenges involved in the design, installation, commissioning, operation and maintenance of building service systems. The design philosophy underpinning the project is to deliver indoor health and comfort whilst minimising energy consumption.

Three

Policy context

The purpose of this document is to summarise the various measures taken by the Applicant to address the relevant sustainability polices outlined within the Camden Local Plan (2017).

The project team have worked to ensure that high standards of sustainability have been implemented, and although the scheme is not referable to the Mayor of London, relevant policies within the London Plan (2021) have been used as a point of reference. The scheme is not classed as a 'major development' as additional floor space to be created is less than 1,000 m^2.

3.1 Relevant planning policy

Relevant policies within the Camden Local Plan, as well as Camden Planning Guidance (CPGs) have been identified in Table 2. Each subsequent chapter within this report will address the project's response to these policies. For reference, full policy wording can be found in Appendix A.

Table 2: Relevant planning policies

Sustainability Statement chapter	Camden Local Plan Policies	Camden CPGs	London Plan Policies
Chapter 4: Sustainable design	CC2 Adapting to climate change D1 Design A1 Managing the impact of development C5 Safety and security C6 Access for all		D5 Inclusive design D11 Safety security and resilience to emergency
Chapter 5: Energy and climate change	CC1 Climate change mitigation	Energy efficiency and adaptation (January 2021)	SI 2 Minimising GHG emissions SI 4 Managing heat risk
Chapter 6: Health and wellbeing	C1 Health and wellbeing A4 Noise and vibration CC4 Air quality	Planning for health and wellbeing (January 2021) Air quality (January 2021)	D14 Noise SI 1 improving air quality
Chapter 7: Transport	T1 Prioritising walking, cycling and public transport T2 Parking and car-free development	Transport (January 2021)	T4 Assessing and mitigating transport impacts T5 Cycling T6 Car parking T7 Deliveries, servicing and construction
Chapter 8: Ecology	A3 Biodiversity	Biodiversity (March 2018) Trees (March 2019)	G5 Urban greening
Chapter 9: Water and flooding	CC3 Water and flooding	Water and flooding (March 2019)	SI 13 Sustainable drainage SI 5 Water infrastructure
Chapter 10: Waste and circular economy	CC5 Waste		SI 7 Reducing waste and supporting the circular economy

Four

Sustainable design

Relevant Camden Local Plan policies	Relevant policy requirements
CC2 Adapting to climate change	- Demonstrate resilience to climate change within a Sustainability Statement - Non-domestic developments of 500m^2 or above are required to achieve a BREEAM 'excellent' rating
D1 Design	- Sustainable in design and construction incorporating best practice in resource management and climate change mitigation and adaptation - Sustainable and durable construction - Adaptable to different activities and land uses
A1 Managing the impact of development	- Visual privacy, outlook - Sunlight, daylight and overshadowing - Artificial lighting levels - Transport impacts - Impacts of the construction phase - Noise and vibration levels - Odour, fumes and dust - Microclimate - Contaminated land; and - Impact upon water and wastewater infrastructure
C5 Safety and security	- Incorporate design principles which contribute to community safety and security - Appropriate security and community safety measures in buildings
C6 Access for all	- Meet the highest practicable standards of accessible and inclusive design so they can be used safely, easily and with dignity by all

4.1 Certification (BREEAM)

The development is being assessed under BREEAM New Construction 2018 and BREEAM Refurbishment and Fit-Out 2014. Justification for this approach (two assessments in parallel) can be found in Appendix B. Both the refurbished areas and the new build extension are targeting BREEAM 'Excellent', the current score (at RIBA Stage 2) is summarised in Figure 1. Preliminary BREEAM assessments, summarising the strategy to achieve this rating, are included in Appendix C.

As per CPG 'Energy Efficiency and Adaptation' in addition to achieving a BREEAM 'Excellent' rating applicants are required to achieve the following sub-targets:

- 60% of the credits in the Energy section
- 40% of the credits in the Materials section
- 60% of the credits in the Water section

Compliance with these sub-targets is confirmed in Table 3. For further detail please refer to the BREEAM preliminary assessments in Appendix C.

Table 3: Percentage of total available BREEAM credits targeted

BREEAM scheme	Percentage of credits targeted (Pre-assessment / Stage 2)		
	Energy	Materials	Water
BREEAM New Construction 2018	62%	71%	67%
BREEAM Refurbishment and Fit-Out 2014	83%	85%	67%

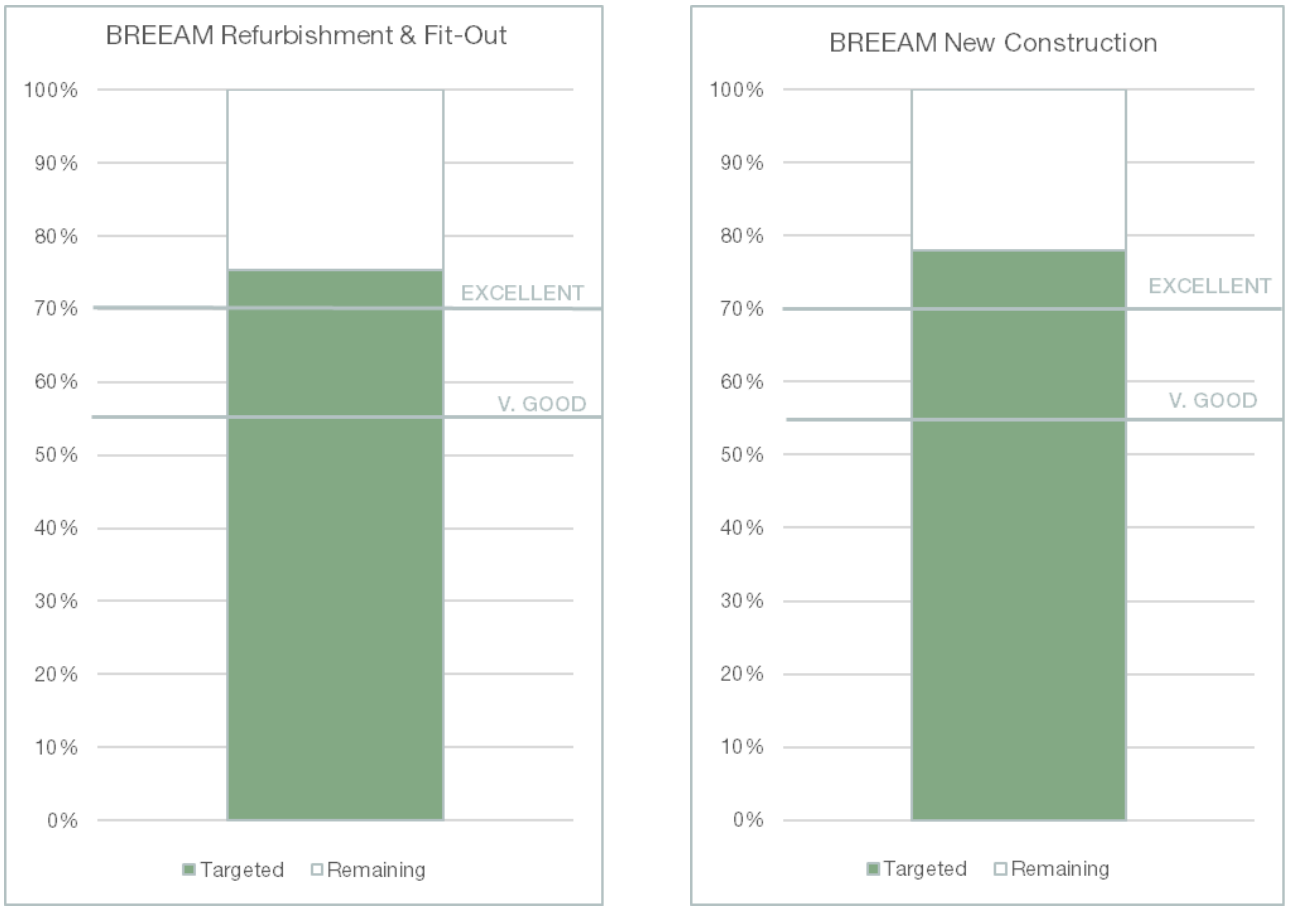

Figure 1: BREEAM assessment summary

4.2 Adapting to Climate Change

To mitigate the impact of extreme weather conditions arising from climate change over the lifespan of the building, a climate change adaptation strategy appraisal for structural and fabric resilience has been developed during RIBA Stage 2.

This involved a systematic risk assessment to identify likely extreme weather conditions associated with climate change and their impacts on the building over its entire life cycle. Building services and renewable systems were covered in this assessment, as well as factors linked to structural and fabric resilience. The risks covered in this appraisal included the following:

- Subsidence, due to increased shrinking and expanding of Camden's clay base
- Poorer air quality
- A hotter microclimate
- Increased summer electricity use due to increased demand for cooling
- Threats to the quantity and quality of water supply.

Measures to mitigate overheating have been implemented at an early stage of the design process to ensure that any risk of excessive solar gains in the summer periods is managed, whilst maximising benefits from winter solar gains as much as possible. Please refer to the Energy Strategy, which outlines the measures taken to reduce the potential for internal overheating and reliance on air conditioning systems, in accordance with the cooling hierarchy (London Plan Policy SI 4).

Thermal modelling will be carried out during RIBA Stages 3-4 to ensure the building can provide an appropriate level of thermal comfort. The aim of this modelling is to reduce the risk to occupier comfort, health and wellbeing, from extreme or unacceptable summer (and winter) indoor temperatures; provide future proofing of the building to maximise its ability to provide adequate thermal comfort for projected climate change scenarios; and reduce the impact on costs and the environment through wasted heat or from the over-specification of complex systems.

The development seeks to improve local biodiversity by providing bio-diverse green roofs and landscaping. Further details can be found in Chapter 8: Ecology. Measures taken to reduce surface water run-off are discussed in Chapter 9: Sustainable drainage.

4.3 High-quality design

The project team are aiming to develop a high-quality, durable design that includes measures to facilitate future adaptation. A functional adaptation strategy study was conducted in line with BREEAM requirements during RIBA Stage 2, and this has informed the design.

This also included an insight into the ease of disassembly related to the building, thereby avoiding any unnecessary future material use, cost and disruption associated with future adaptation of the building. The design for disassembly strategy focuses on maximising the ability to reclaim or reuse materials during future demolition works, in line with circular economy principles.

The strategy was developed in consultation with HUT Architecture and the structural engineers on the project, where the adaptability of the building was assessed on seven principles including: feasibility, accessibility, versality, adaptability, convertibility, expandability and refurbishment potential.

4.4 Managing potential impacts

Impacts on neighbouring properties (and the local community) have been reviewed and either eliminated or reduced to acceptable levels. This includes potential impacts on visual privacy, sunlight/daylight/overshadowing, use of artificial external lighting, and potential disturbance and pollution during construction (noise, dust, vibration). Further information can be found in the Daylight, Sunlight and Overshadowing Assessment report and Noise Assessment, which have been submitted as part of this planning application.

Transport impacts have been assessed, including potential impacts resulting from the construction phase. These are discussed in detail in the Travel Plan and Draft Construction Management Plan, included within the planning submission.

4.5 Safety and security

A suitably qualified security specialist will be appointed to carry out an evidence-based Security Needs Assessment (SNA) prior to completion of RIBA Stage 2. The purpose of the SNA is to identify attributes of the proposal, site, and surroundings which may influence the approach to security for the development. This assessment will inform the specification of security controls, including crime prevention through environmental design, tested and certified security products, and technological security measures.

4.6 Access and inclusivity

The development will meet the highest practicable standards of accessible and inclusive design, within the constraints of the listed building, so that it can be used safely, easily, and with dignity by all. An inclusive environment will be created that maximises independence for all future users and offers support options and facilities for a variety of user needs. Efforts will be made to ensure that an inclusive environment is not only planned and designed but also built and managed appropriately.

The development is accessed directly from a public footpath and does not have any external parking areas. As discussed below in Chapter 7: Transport, a site-specific travel assessment has been produced, which includes a section on disabled access, accounting for varying levels and types of disability, including visual impairment.

This issue is explored in more detail in the Design and Access Statement, which is submitted as part of the planning application.

Five

Energy and carbon dioxide emissions

Relevant Camden Local Plan policies	Relevant policy requirements
CC1 Climate change mitigation	- Reduce CO_2 emissions through following the steps in the energy hierarchy - Demonstrate how London Plan targets for carbon dioxide emissions have been met - Minimise the need to travel by car - Sensitive energy efficiency improvements to existing buildings - (Proposals that involve substantial demolition) demonstrate that it is not possible to retain and improve the existing building - Optimise resource efficiency - Assess the feasibility of connecting to an existing decentralised energy network

5.1 Reducing operational carbon dioxide emissions

Carbon dioxide emissions will be reduced in accordance with the energy hierarchy. Further detail can be found in the Energy Strategy, which is submitted as part of the planning application.

5.1.1 Be Lean (Demand Reduction)

The scheme adopts a fabric-first and passive design approach to reduce energy demand for space heating and active cooling and its building fabric and airtightness will look to improve significantly upon the existing building with a target of 5.0 @50Pa (m3/hm2). At the detailed design stage both standard and natural insulation materials will be considered on merit, feasibility, and pricing.

The office spaces in the buildings will have openable windows to allow the occupant the flexibility to use passive ventilation prior to utilise mechanical ventilation/cooling. The courtyards and roof terrace also help with forming dual aspect rooms where available, capable of providing cross-ventilation.

Within the scheme, all fixed light fittings will be low-energy lamps. The lux levels within each space will be designed to match relevant Building Regulations and industry guidance to reduce the requirement for additional unregulated lighting. Offices, transient spaces and toilets will have automatic lighting using PIR sensors and time switches. Daylight switching will also be configured for areas, where deemed appropriate.

Both 'passive' and 'active' night-cooling strategies will be explored post-planning (i.e. either using windows on actuators versus mechanical ventilation). Although passive ventilation will be maximised as much as possible during temperate conditions to lower overall energy demand, there is a potential for unintentional heat loss from the building's windows during the colder months. A heat recovery system will therefore be used to capture the heat escape from a heated interior space.

This heat recovery system will work in combination with the ventilation system proposed by the MEP engineers, which consists of a centralised supply and extract system using an evaporator or DX (direct expansion) coils, to cool and remove moisture from the building's air streams. All units will also be capable of operating in 'night-cooling' mode.

5.1.2 Be Clean

There are no CO_2 savings from this stage of the energy hierarchy as it is not feasible to connect to a heat network. Refer to Section 5.6 for further details.

5.1.3 Be Green (renewable energy)

Opportunities for producing, storing, and using renewable energy on-site are investigated and maximised to the extent feasible. The capacity for renewable technologies at the site has been explored with the wider design team. The following technologies were considered:

- Air Source Heat Pump (ASHP)
- Ground Source Heat Pump (GSHP)
- Water Source Heat Pump (GSHP)
- Photovoltaic Solar Panels
- Solar Thermal Hot Water
- Wind Technology

The heat source for delivering space heating will be from heat pump technology. The heat pumps will also be capable of operating in reverse mode able to deliver cooling across the site. The full details of the specification will be developed post-planning. The Camden Planning Guidance defines ASHPs as a renewable technology as carbon calculations have been carried out which show that their use for heating is more efficient than gas. The ASHPs have a coefficient of performance (COP) of more than 4.

Due to the building's primary use being an office space, a point-of-use system will be used to provide hot water to the building for hand washing and tea points. A separate system will be used for the shower rooms, which will be provided using an energy efficient heat pump solution with hot water tank for storage.

The most feasible form of on-site renewable generation technology for the development is deemed to be photovoltaic solar panels.

5.1.4 Commissioning

Seasonal commissioning will be undertaken to understand how the building services run when they are at their full load and ensure they perform as intended. This will minimise defects and therefore improve performance.

Any defects in the building services can be identified and rectified at an early stage by the continuous support of the commissioning team during the first year of the building's operational life, which will in turn increase the systems' service life.

Training will also be undertaken as part of the commissioning, which will help building occupants and facilities managers better understand the functionality of the building and ensure it continues to perform at optimum performance levels.

5.1.5 Energy monitoring

Energy sub-metering will be installed to allow for the monitoring of operational energy consumption. The overall metering strategy has been developed in line with the guidance for new buildings and BREEAM requirements. Building managers and consultants will be able to compare actual performance with targets post-handover to inform ongoing management and reduce any performance gap.

As such, appropriately sized energy meters will be installed to allow at least 90% of the estimated annual energy consumption of each fuel or energy supply to be assigned to an end-use category. Building users will be able to identify the end-use category covered by each meter through clear labelling.

5.2 Minimising the need to travel by car

The development will be car-free. Further details on sustainable transport measures can be found in Chapter 7: Transport.

5.3 Energy efficiency improvements

The following sensitive energy efficiency improvements will be made to the existing building:

- An upgraded, well-insulated building fabric shell
- Improve airtightness, reducing draughts and heat-loss
- Mechanical ventilation with heat recovery
- Improved glazing
- Energy efficient lighting and controls
- Energy efficient heat pump and cooling systems
- Photovoltaic solar panels

5.4 Treatment of existing buildings

The project team was briefed by Elliott Wood's sustainability team from Concept Design stage on the value of the existing buildings and the materials held within them. As such, the scheme seeks to reuse and refurbish the existing buildings on site, without any significant demolition.

The three existing buildings that form the development site (3-5 Bedford Row, Link Building and 3-5 Jockey's Fields) have undergone strip-out works to facilitate the proposed refurbishment and extension. However, prior to this work taking place an existing building audit (pre-refurbishment audit) was carried out in accordance with the BREEAM methodology. This report identified the following items as being potentially suitable for reuse:

- Steel beams from plant grillage at roof level
- Bricks
- Internal doors
- Parquet flooring (subject to condition)
- Glazed partitions
- Lights (particularly 600x600 ceiling lights)
- Kitchen units & worktops
- Timber sliding, folding partition wall
- Light switches and electrical sockets
- Sinks

5.5 Resource efficiency

5.5.1 Responsible sourcing

A sustainable procurement policy for the project was developed and included within the Sustainability Brief. This document was circulated among the project team during Concept Design stage and covered a range of materials sourcing criteria to encourage steps taken to reduce the impact of construction materials through design, construction, maintenance and repair.

As such, the procurement of materials that are sourced in a responsible way and have a low embodied impact over their life including extraction, processing and manufacture, and recycling was encouraged.

This sustainable procurement plan aims to provide a best practice 'toolkit' to facilitate the selection of products that involve lower levels of negative environmental, economic, and social impact across their supply chain including extraction, processing and manufacture.

The use of recycled materials and materials that can be recycled in future was encouraged and examples of several 'reuse market' platforms that allow users to search for reusable materials for construction projects were also provided.

Products and materials that contain low levels of Volatile Organic Compounds (VOC) or are VOC free were encouraged, and the prescribed limits of VOC, Formaldehyde and other Emissions for various materials and products were clearly communicated.

The specification of robust and durable materials that have a long service life is encouraged, to prolong the period of their use and extend the replacement LCA module (B-15). 'Service life' is defined as 'the period of installation during which a building, or its part, meets or exceeds the performance requirements'[1].

Materials should be sourced from transparent suppliers that clearly publish any potential harmful impacts of their products in terms of human and environmental health.

To ensure the sustainable procurement measures mentioned in this section are implemented effectively throughout all stages of the development, procedures to check and verify these must be in place.

It is also agreed that hazardous materials (as defined by UK government legislation) are not to be used. These include:

- Composite cladding
- Asbestos
- Lead or any lead-based products (including paints)
- Wood treatments that use creosote, arsenic or pentachlorophenol
- Weed killers that contain glyphosate herbicides, sodium chlorate or paraquat

5.5.2 Local procurement and transportation

The project team was encouraged to procure construction products locally where possible. This will be reviewed and re-assessed following the appointment of the main contractor. The main contractor is required to monitor:

- The total transport-related carbon dioxide emissions (kg CO_2e)[2]
- The total distance travelled (km) from the material manufacturer/supplier to the construction site

A record of these details relating to the transportation of construction materials to site (as well as waste taken from the site) will be kept to satisfy the Man 03 Monitoring of Construction Site Impacts BREEAM criteria.

5.5.3 Targets and responsible sourcing certification

The following targets have been set with regards to responsible sourcing certification:

- **Timber and timber-based products:** either FSC or PEFC certified
- **Concrete:** BES 6001 certified
- **Brick:** BES 6001 certified
- **Steel reinforcement:** CARES certified / Eco-Reinforcement certified
- **Aluminium:** ASI certified

5.5.4 Material efficiency

A material efficiency report has been produced, outlining opportunities and measures to optimise the use of materials

5.5.5 Embodied carbon

As part of the BREEAM assessment a lifecycle assessment (LCA) is being undertaken to calculate and reduce the embodied carbon associated with new building materials.

[1] The Home Quality Mark One, Technical Manual SD239 (BRE in 2018)
[2] In order to calculate CO_2 emissions it may be necessary to record vehicle type and/or litres of fuel consumed.

5.6 Decentralised energy networks

The scheme is not classed as a 'major development' as new floor space created is less than 1,000 m^2. An assessment of the feasibility of connecting to an existing decentralised energy network (or where this is not possible, establishing a new network) is therefore not required. Furthermore, as shown in Figure 2, the development site (marked in green) is not located within close proximity of an existing heat network.

It should be noted that the scheme will utilise high efficiency heat pumps (which classify as renewable technologies as they have a coefficient of performance (COP) of greater than 4). It is not possible to connect this system to a LTHW heating system.

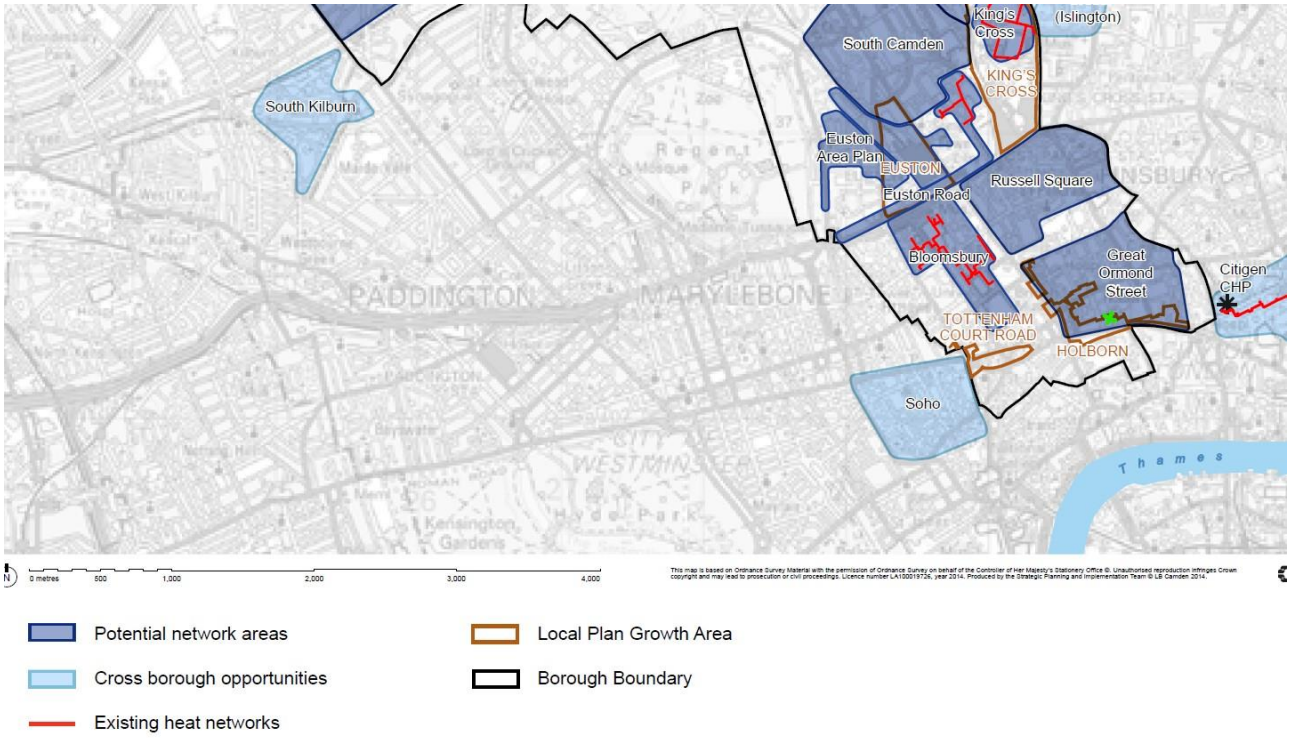

Figure 2: Potential decentralised energy network areas (development site marked in green)

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Six

Health and wellbeing

Relevant Camden Local Plan policies	Relevant policy requirements
C1 Health and wellbeing	- Positively contribute to creating high quality, active, safe and accessible places
A4 Noise and vibration	- Ensure that noise and vibration is controlled and managed
CC4 Air quality	- Mitigate the impact of development on air quality - Ensure that exposure to poor air quality is reduced in the borough

6.1 Health and wellbeing

It is the Applicant's intention to provide a high-quality space that positively contributes to the health and wellbeing of occupants. Measures will be implemented to encourage best practice in visual performance and comfort by ensuring daylighting, artificial lighting and occupant controls are considered and optimised.

The design will ensure the building is capable of providing an appropriate acoustic environment to provide comfort for building users. As discussed above (Section 4.2) the building will be designed to provide an appropriate level of thermal comfort to building users.

6.2 Noise and vibration

As the development is not classed as 'major' and does not include significant demolition there is minimal risk of noise and vibration to the local environment. During construction steps will be taken to ensure that responsible construction management practices are implemented. Construction mitigation measures that will be implemented for the development are included within the Construction Management Plan.

As part of the BREEAM assessment the contractor will be required to manage the construction site in an environmentally and socially considerate, responsive, and accountable manner. This will include implementing measures to minimise risks associated with:

- Vehicle movement
- Pollution (air, land, water, vibration, light, noise)
- Tidiness
- Health and wellbeing of site operatives
- Security

6.3 Air Quality

The development is not likely to expose residents to high levels of air pollution; an AQA is therefore not deemed to be necessary. The development will be fully electric, all heating and hot water will be supplied by non-combustion systems. This decision eliminates any potential air pollution from domestic and commercial boiler systems, which are a key source of NO_2 (around 40%) and a small source of PM10.

A site-specific indoor air quality plan will be produced as part of the BREEAM assessment. The objective of this document is to facilitate a process that leads to design, specification and installation decisions (and actions) that minimise indoor air pollution during building occupation; it will consider:

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

As discussed in Section 5.5.1, the potential for indoor air pollution will be reduced by limiting the use of products that contain volatile organic compounds and formaldehyde (for example, paints, insulation and flooring materials).

Seven

Transport

Relevant Camden Local Plan policies	Relevant policy requirements
T1 Prioritising walking, cycling and public transport	- Promote sustainable transport by prioritising walking, cycling and public transport - provide accessible, secure cycle parking facilities - Make provision for high quality facilities that promote cycle usage including changing rooms, showers, dryers and lockers
T2 Parking and car-free development	- Limit the availability of parking and require all new developments in the borough to be car-free

7.1.1 PTAL & public transport accessibility

The public transport accessibility was assessed for the project to recognise and encourage development in proximity of good public transport networks. This helps to reduce transport-related carbon impact which has been shown in London to increase the further out of the centre a development is located. As shown in Figure 3, the project is located within an exceptionally well-connected central area and has a high total AI score of 52.98.

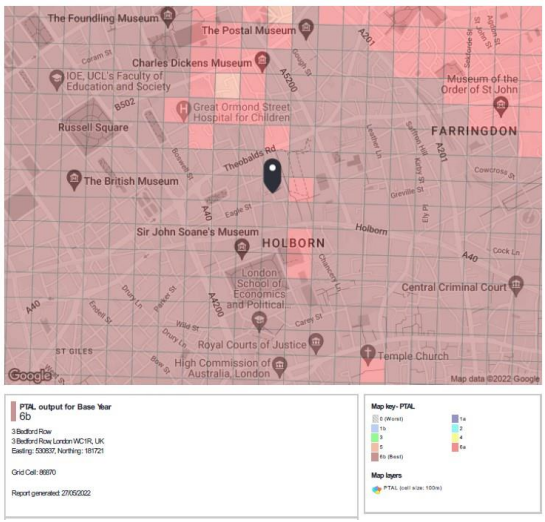

Figure 3: PTAL output for 3-5 Bedford Row

7.1.2 Cycle storage and cyclist facilities

Opportunities to encourage alternative modes of transport were implemented into the design of the building by the design team. For example, cycle storage for 34 cycles and associated facilities will be provided as shown in Figure 4. The number of cycle storage spaces is compliant based on the number of users in the assessed building. Efforts have been taken to ensure that all cycle parking and storage facilities will be covered and secure.

All cycle storage spaces, and cyclist facilities provided will be BREEAM compliant and located within the building. The design team confirm that it will be clear from access arrangements, demarcation, and positioning that the cycle storage provided is clearly associated with the assessed building only.

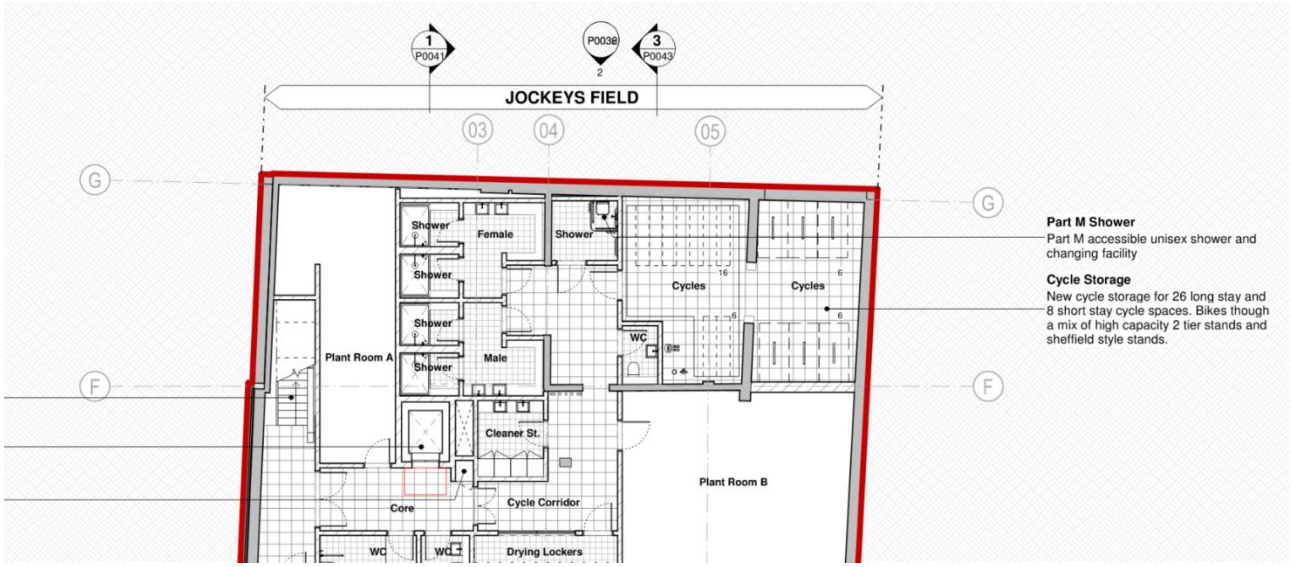

Figure 4: Proposed basement plan showing covered, secure cyclist facilities

Eight

Ecology

Relevant Camden Local Plan policies	Relevant policy requirements
A3 Biodiversity	- Realise benefits for biodiversity through the layout, design and materials used in the built structure and landscaping - Demolition and construction phase of development to be planned to avoid disturbance to habitats and species and ecologically sensitive areas, and the spread of invasive species

8.1 Biodiversity

The integration and use of urban greening measures has been central to the design. A green roof will be installed on the third-floor roof of the link building and the fourth-floor roofs of the Bedford Row building and the Jockey's Fields building (as shown in Figure 5 and Figure 6).

Green roofs offer several proven environmental benefits, including the mitigation of the urban heat island effect, a particular issue for the site given its densely populated urban location. By mitigating excess solar gains, this will also reduce the energy needed to provide cooling and heating to the building.

Through its layered components, the green roof will also prevent water and root damage to the structure of the building, with a drainage layer to aid in water drainage. Green roofs can also provide enhanced stormwater management and water quality, by reducing and slowing stormwater run-off in the urban environment.

All green roofs will be designed to enhance biodiversity, as far as practically possible given the structural limitations of the existing building (for example, the existing structure may not accommodate large trees and shrubs at roof level). Additional planting will be provided at basement level in the courtyard.

The project is targeting maximum credits within BREEAM credit issues LE 02, LE 03, LE 04 and LE 05. An ecologist will be appointed to advise on species mixes and other measures to enhance biodiversity on site (for example, habitat creation).

The project does not include any substantial demolition. Minor demolition works, along with the construction phase of the development will be planned to avoid disturbance to habitats and species, and ecologically sensitive areas. All works will include measures to prevent the spread of invasive species.

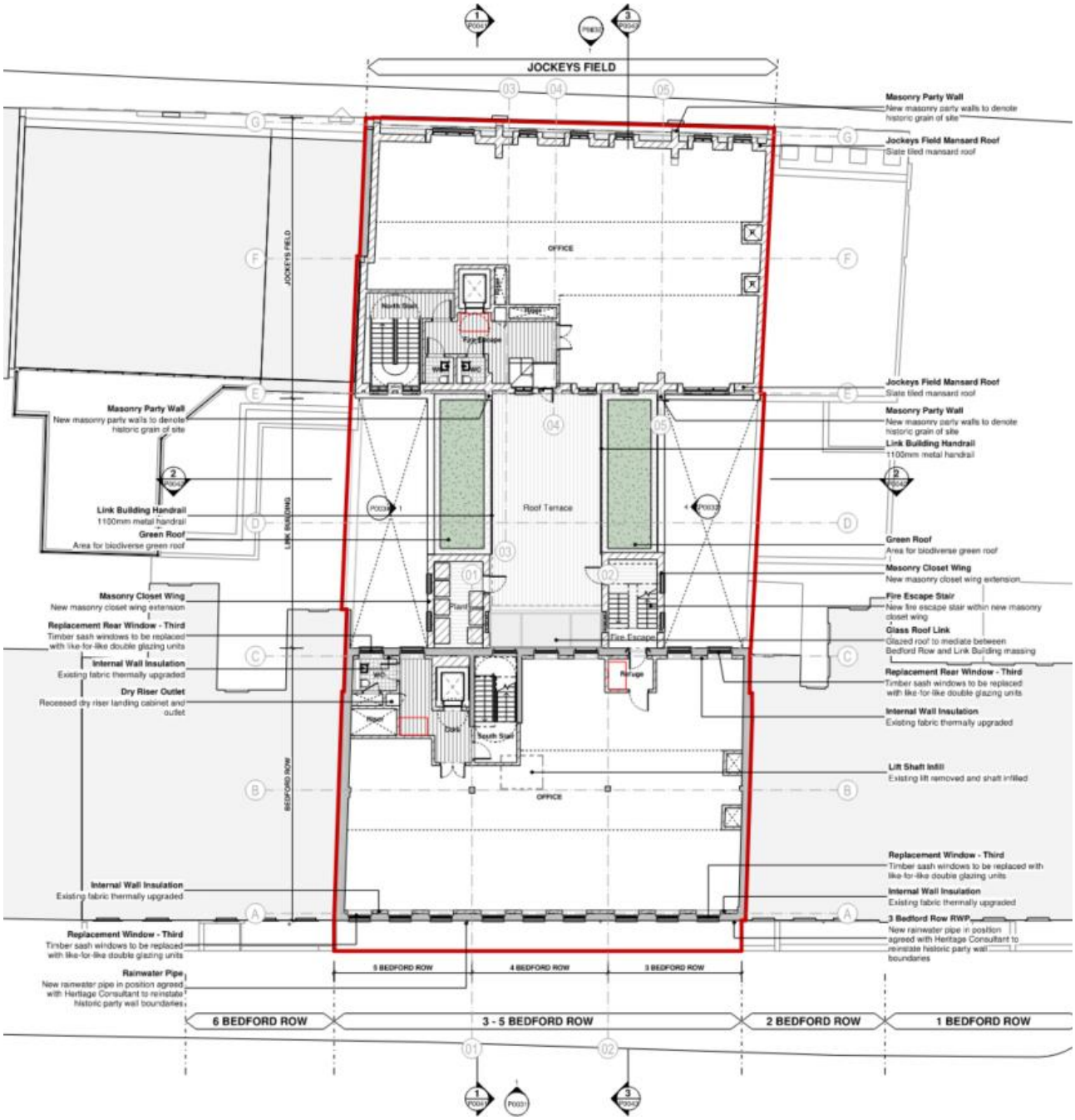

Figure 5: Proposed third floor plan showing area for biodiverse green roof (shaded green)

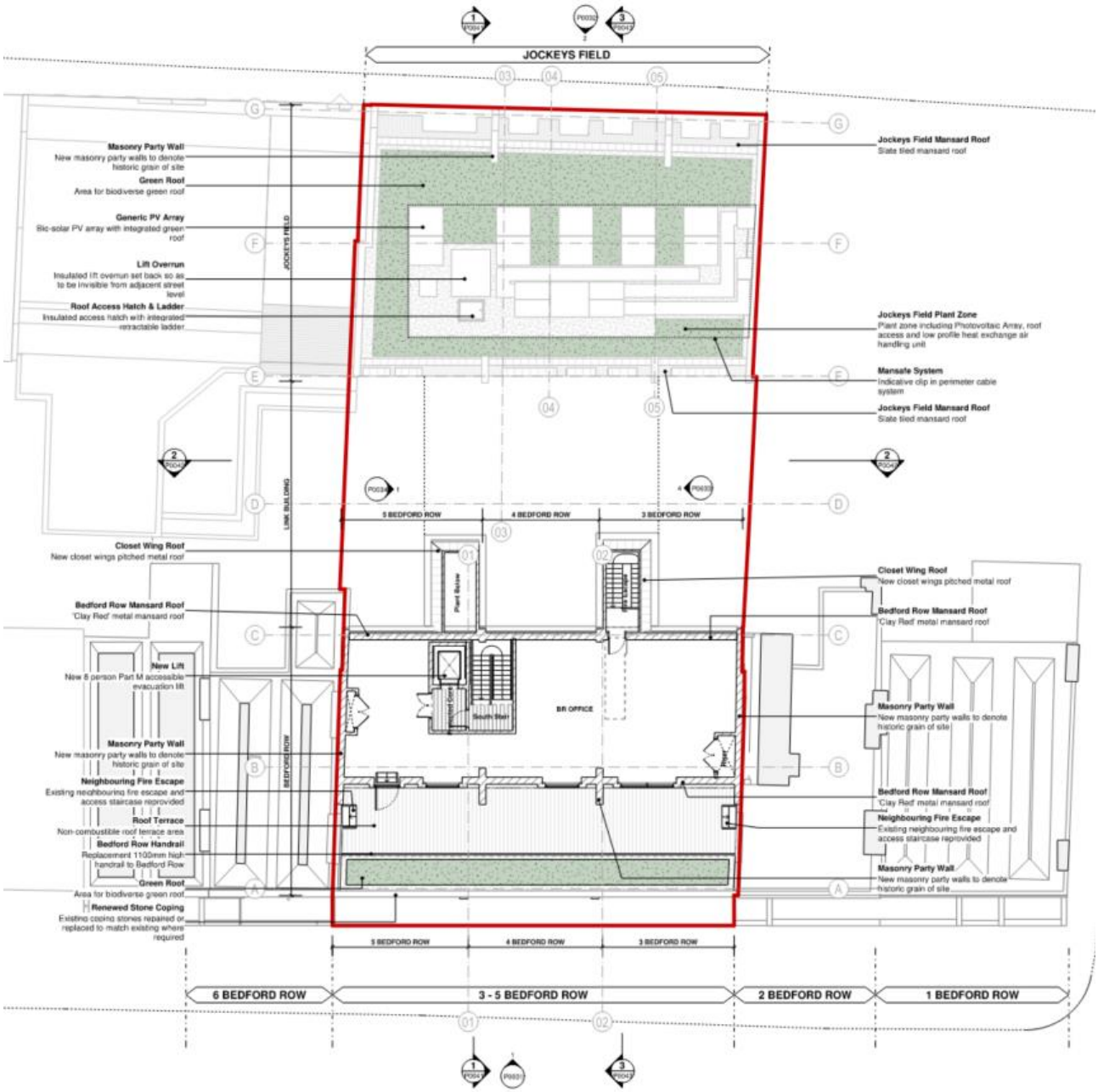

Figure 6: Proposed fourth floor plan showing area for biodiverse green roof (shaded green)

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Nine

Water and flooding

Relevant Camden Local Plan policies	Relevant policy requirements
CC3 Water and flooding	- 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) - Incorporate flood resilient measures in areas prone to flooding - Utilise Sustainable Drainage Systems (SuDS) in line with the drainage hierarchy to achieve a greenfield run-off rate where feasible - Not locate vulnerable development in flood-prone areas.

9.1 Incorporate water efficiency measures

In line with Camden planning policy the development is targeting over 60% of the BREEAM credits available within the Water section. This includes:

- Reducing water consumption via the specification of water efficient components
- Installing water meters to manage and monitor water consumption
- Installing water leak detection systems and flow control devices to reduce the potential for wastage due to water leaks
- Reducing unregulated water uses by specifying drought-tolerant planting that does not require mains-fed irrigation systems

The development seeks to minimise the use of mains water, in accordance with the requirements of London Plan Policy SI 5. The BREEAM Excellent standard for the Wat 01 water category has been exceeded, with the scheme targeting a 25% improvement in water consumption against the BREEAM baseline building performance.

9.2 Drainage strategy

As the development is a refurbishment, with limited external area, it is not feasible to make significant reductions to surface water run-off; for example, it is not possible to install a substantial rainwater attenuation tank.

The scheme is not classed as a major or basement extension, therefore a drainage/suds strategy is not required to be submitted with this application. The strategy for the Above Ground Drainage Services is included in the MEP Stage 2 Report, submitted as part of this planning application. The design and sizing of the foul and waste drainage system will utilise the Discharge Unit diversity method as set out in BS EN 12056: Part 2:2000.

The strategy for the Below Ground Drainage System has been undertaken by Structural Engineers (Elliott Wood) and will be included in the Stage 2 Structural and Civil Engineering Report.

9.3 Flood risk

The development is not located in an area at risk from flooding. A Flood Risk Assessment (FRA), is not required to be submitted as part of this planning application.

Ten

Waste and circular economy

Relevant Camden Local Plan policies	Relevant policy requirements
CC5 Waste	- Meet the London Plan targets of 50% of household waste recycled/composted by 2020 (aspiring to achieve 60% by 2031) - Make sure that developments include facilities for the storage and collection of waste and recycling

10.1 Minimising waste production and encouraging recycling of construction & demolition waste

Reuse of the existing building is at the centre of the proposed design. All three elements of the existing building (3-5 Bedford Row, Link Building and 305 Jockey's Fields) will be retained and refurbished. The scheme does not include significant demolition. The scheme aims to incorporate circular economy principles by bringing an existing building back into use as a high-quality office space.

Efforts to promote resource efficiency via the effective and appropriate management of construction waste were encouraged from an early stage of the project. Firstly, a pre-refurbishment audit and report was conducted pre strip out to guide the design of the refurbishment, consider materials present in the buildings for reuse, setting targets for waste management and engage contractors in the process of maximising high-grade reuse and recycling opportunities.

The pre-demolition audit therefore provides detailed information on materials that can be reclaimed and recycled, reducing the cost and environmental impact of waste disposal, bringing savings from reusing existing materials and earnings from selling those that are not needed. The key objectives of the report are to:

- Estimate volumes of potential waste arising from demolition/strip-out works to plan 'reuse, recycling and recovery' activities prior to work starting
- Identify markets for recycled or recovered material
- Identify reclamation and reuse potential both on-site and off-site
- Increase material and labour efficiency, reduce waste and maximise profit.

Following the pre-refurbishment audit, the most significant waste streams predicted to arise from the refurbishment works are blockwork, plaster/plasterboard and steel. The report consequently made the following key recommendations:

a) Consideration should be given to salvaging blockwork, for use in new beam and block flooring for the proposed development if this can be incorporated in the design.
b) Plaster and plasterboard (where not contaminated with asbestos) should be sent to a specialist recycling facility such as Powerday Recycling. However, all plasterboard ceiling tiles should be salvaged and reused if they are not damaged.
c) The reuse potential of structural steel elements at roof level (beams) should be investigated further, if they can be incorporated into the design for Bedford Row, this would be the most environmentally conscious decision. The steel beams could also be reused as temporary works during construction. Any steel that cannot be reused (including cold rolled steel studs) should be salvaged and sent for recycling.

10.2 Waste targets

10.2.1 Minimising waste during construction phase

The contractor will be required to implement measures to limit construction waste to no more than 6.5 tonnes per 100m^2 of gross internal floor area. The amount of site construction waste created will be monitored and targets regularly reviewed. The design or site management team will be required to nominate an individual, prior to commencement of construction works, to take responsibility for implementing waste prevention measures. Using the BREEAM scoring and reporting tool, the amount of waste generated per 100m^2 (gross internal floor area) will be reported in tonnes and m^3.

10.2.2 Segregation of Construction & Demolition waste

The project team has been briefed on the importance of efficient sorting of waste into various key materials groups. Due to space limitations on site, however, a waste contractor will be used to separate and process recyclable materials off-site. Similarly, where possible, manufacturers' take-back schemes could also be used. Sufficient documentary evidence will be produced to demonstrate that the segregation of materials has been carried out to the agreed levels and that materials are reused or recycled as appropriate.

The development is also bound to meet the Camden requirement that 85% of construction and demolition waste is diverted from landfill/ In addition to this, as part of the BREEAM assessment, at least 80% of construction and 90% of demolition waste (by weight) of must be diverted from landfill. An example of potential waste processing routes is shown in Figure 7.

Actions to avoid waste being disposed of in landfill include:

- Reusing the material on site (in situ or for new applications)
- Reusing the material on other sites
- Community reuse and recycling
- Salvaging or reclaiming the material for reuse
- Returning material to the supplier via a 'take-back' scheme
- Direct recycling of materials via a specialist material reprocessor or recycler
- Recovery of the material from site by an approved waste management contractor and recycled or sent for energy recovery
- Utilising waste in exempt or permitted applications (not landfill).

10.3 Operational waste - Storage and collection

The building has been designed to allow adequate space for the provision of dedicated waste storage facilities. The size of these spaces, shown in Figure 8, was calculated using BREEAM 2018 New Construction methodology at Concept Design stage.

The spaces are in areas that are convenient and well-integrated, to enable future occupants to efficiently sort waste at source into recycling and non-recycling (within 20m of the building entrance). The placement of these spaces also ensures that waste can be collected easily, thus optimising occupant material flows and avoiding landfill and incineration.

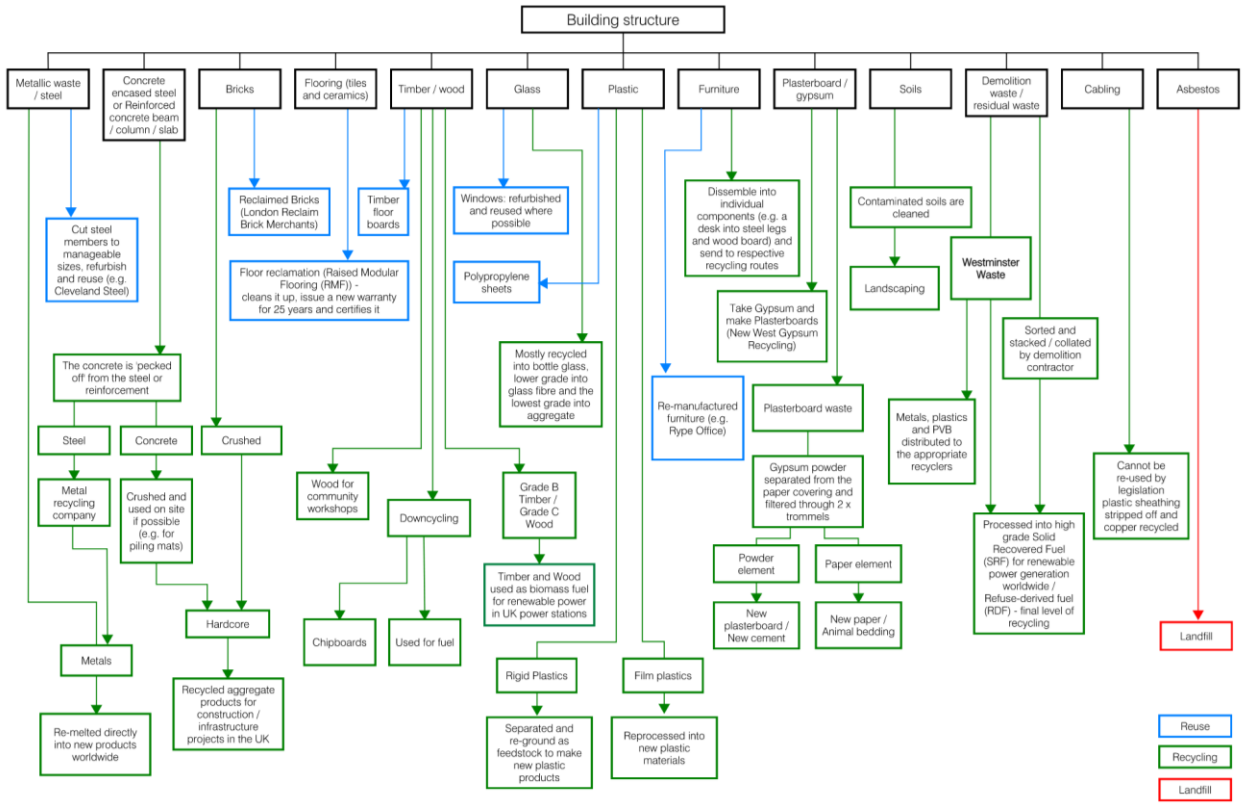

Figure 7: Waste processing routes (developed based on demolition contractor interviews undertaken during a research project part funded by Grosvenor in early 2021)

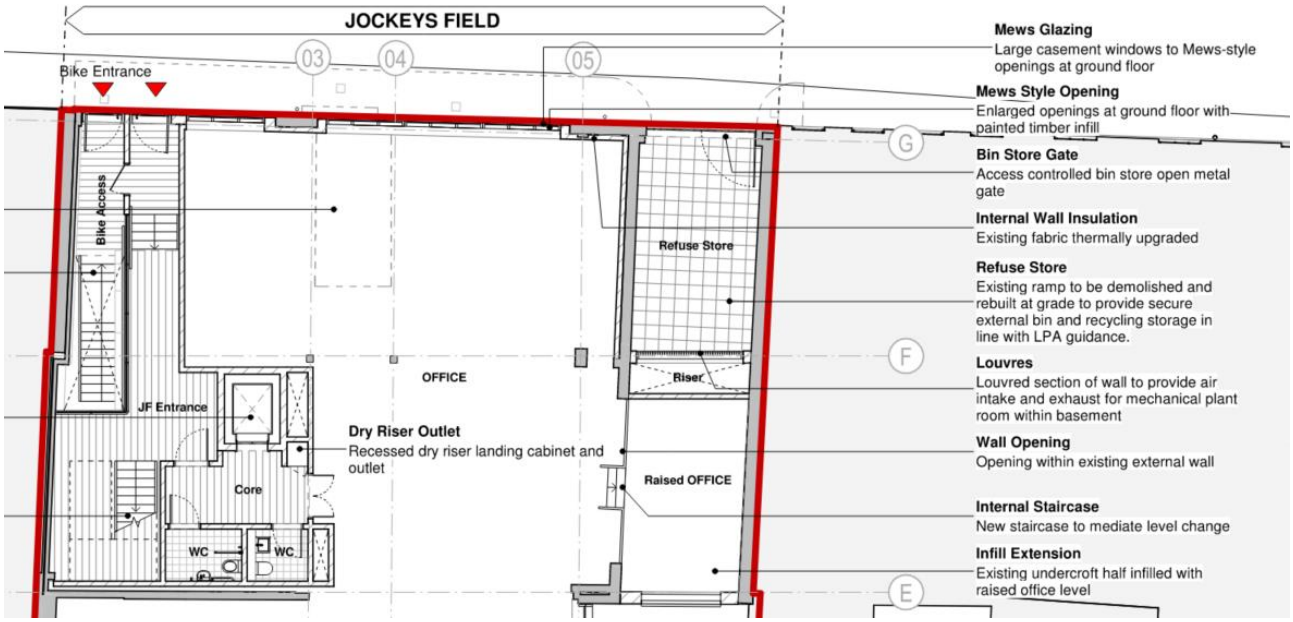

Figure 8: Proposed ground floor plan showing location of refuse store (Wst 03 Operational waste facilities)

Eleven

Conclusion

The sections in this report provide an overview of the various key sustainability measures that will be, or have already been, implemented and illustrate the building's significant improvement in terms of its environmental impact. Holistic ways of thinking have been used to address these key areas, and project team members have been appointed who are motivated to deliver strategies that target the much-needed areas of improvement. The improvements that these strategies will deliver can be split into the following categories:

- **Building reuse:** the proposed scheme will reuse the majority of the existing building's structure. Reuse is a key aim of the proposed design, which seeks to sensitively improve the energy efficiency of the existing building and bring it back into use as a high-quality office space.

- **Sustainable design:** the scheme is targeting BREEAM 'Excellent' for both the refurbished elements and new extension. Furthermore, the scheme targeting at least 60% of the credits in the 'Energy' section, at least 40% of the credits in the 'Materials' section, and at least 60% of the credits in the 'Water' section.

- **Energy efficiency:** opportunities to reduce carbon dioxide emissions associated with operational energy use were assessed by the Energy Consultant, Love Design Studio. The energy hierarchy (Be Lean, Be Clean, Be Green) was used to inform the proposed strategy.

- **Health and wellbeing:** a key focus for the project was to is that health, wellbeing and comfort were optimised through the design and construction of the building. and specification of materials. The various risk levels were analysed for a variety of important factors including thermal, moisture, light, noise and inclusive design.

- **Transport:** possible methods of sustainable transport, such as cyclist facilities, have been assessed and included into the scheme where possible. This will contribute to the reduction in car-dependency in the Camden area, which has been declared an Air Quality Management Area (AQMA). As well as lowering overall levels of CO_2e emissions associated with the building and its users, this has a number of benefits from an air quality perspective as well as benefitting occupant health and wellbeing through increased physical activity.

- **Ecology and biodiversity:** measures that help to realise benefits for biodiversity through the layout, design and use of landscaping elements in the development were investigated. As mentioned in Section 8, the use of green roofs will provide habitat space and conditions for wildlife. To ensure that biodiversity potential is maximised, this will have a varied substrate depth as well as having planted and or seeded with a wide range of wildflowers (in accordance with guidance provided by the project ecologist).

- **Water use:** the BREEAM Excellent standard for the Wat 01 water category has been exceeded, with the scheme targeting a 25% improvement in water consumption against the BREEAM baseline building performance. Strategies for both the Above Ground Drainage Services and the Below Ground Drainage System will be submitted as part of the planning documents to ensure that surface water run-off rates are controlled. The use of water efficiency fittings and appliances throughout the building will also ensure that the development does not cause unnecessary demand on London's also stressed water supply.

- **Waste and resource efficiency:** there has been a strong incentive from the project team to optimise resource efficiency in the development. A combination of measures based on the waste hierarchy which target the reduction of waste, from the construction and refurbishment of the existing building as well as any future adaptation to the building, have been implemented. The project team was also extensively briefed on the relevant principles of sustainable procurement and are committed to monitoring this regularly throughout the construction process.

A LB Camden Planning Policies

Policy D1 Design

The Council will seek to secure high quality design in development. The Council will require that development:

a. respects local context and character;
b. preserves or enhances the historic environment and heritage assets in accordance with Policy D2 Heritage;
c. is sustainable in design and construction, incorporating best practice in resource management and climate change mitigation and adaptation;
d. is of sustainable and durable construction and adaptable to different activities and land uses;
e. comprises details and materials that are of high quality and complement the local character;
f. integrates well with the surrounding streets and open spaces, improving movement through the site and wider area with direct, accessible and easily recognisable routes and contributes positively to the street frontage;
g. is inclusive and accessible for all;
h. promotes health;
i. is secure and designed to minimise crime and antisocial behaviour;
j. responds to natural features and preserves gardens and other open space;
k. incorporates high quality landscape design (including public art, where appropriate) and maximises opportunities for greening for example through planting of trees and other soft landscaping,
l. incorporates outdoor amenity space;
m. preserves strategic and local views;
n. for housing, provides a high standard of accommodation; and
o. carefully integrates building services equipment.

The Council will resist development of poor design that fails to take the opportunities available for improving the character and quality of an area and the way it functions.

Tall buildings

All of Camden is considered sensitive to the development of tall buildings. Tall buildings in Camden will be assessed against the design criteria set out above and we will also give particular attention to:

Policy A1 Managing the impact of development

The Council will seek to protect the quality of life of occupiers and neighbours. We will grant permission for development unless this causes unacceptable harm to amenity.

We will:

a. seek to ensure that the amenity of communities, occupiers and neighbours is protected;
b. seek to ensure development contributes towards strong and successful communities by balancing the needs of development with the needs and characteristics of local areas and communities;
c. resist development that fails to adequately assess and address transport impacts affecting communities, occupiers, neighbours and the existing transport network; and
d. require mitigation measures where necessary.

The factors we will consider include:

e. visual privacy, outlook;
f. sunlight, daylight and overshadowing;
g. artificial lighting levels;
h. transport impacts, including the use of Transport Assessments, Travel Plans and Delivery and Servicing Management Plans;
i. impacts of the construction phase, including the use of Construction Management Plans;
j. noise and vibration levels;
k. odour, fumes and dust;
l. microclimate;
m. contaminated land; and
n. impact upon water and wastewater infrastructure.

Policy C5 Safety and security

The Council will aim to make Camden a safer place.

We will:

a. work with our partners including the Camden Community Safety Partnership to tackle crime, fear of crime and antisocial behaviour;
b. require developments to demonstrate that they have incorporated design principles which contribute to community safety and security, particularly in wards with relatively high levels of crime, such as Holborn and Covent Garden, Camden Town with Primrose Hill and Bloomsbury;
c. require appropriate security and community safety measures in buildings, spaces and the transport system;
d. promote safer streets and public areas;
e. address the cumulative impact of food, drink and entertainment uses, particularly in Camden Town, Central London and other centres and ensure Camden's businesses and organisations providing food, drink and entertainment uses take responsibility for reducing the opportunities for crime through effective management and design; and
f. promote the development of pedestrian friendly spaces.

Where a development has been identified as being potentially vulnerable to terrorism, the Council will expect counter-terrorism measures to be incorporated into the design of buildings and associated public areas to increase security.

Policy C6 Access for all

The Council will seek to promote fair access and remove the barriers that prevent everyone from accessing facilities and opportunities.

We will:

a. expect all buildings and places to meet the highest practicable standards of accessible and inclusive design so they can be used safely, easily and with dignity by all;
b. expect facilities to be located in the most accessible parts of the borough;
c. expect spaces, routes and facilities between buildings to be designed to be fully accessible;
d. encourage accessible public transport; and
e. secure car parking for disabled people.

The Council will seek to ensure that development meets the principles of lifetime neighbourhoods.

Policy CC1 Climate change mitigation

The Council will require all development to minimise the effects of climate change and encourage all developments to meet the highest feasible environmental standards that are financially viable during construction and occupation.

We will:

a. promote zero carbon development and require all development to reduce carbon dioxide emissions through following the steps in the energy hierarchy;
b. require all major development to demonstrate how London Plan targets for carbon dioxide emissions have been met;
c. ensure that the location of development and mix of land uses minimise the need to travel by car and help to support decentralised energy networks;
d. support and encourage sensitive energy efficiency improvements to existing buildings;
e. require all proposals that involve substantial demolition to demonstrate that it is not possible to retain and improve the existing building; and
f. expect all developments to optimise resource efficiency.

For decentralised energy networks, we will promote decentralised energy by:

g. working with local organisations and developers to implement decentralised energy networks in the parts of Camden most likely to support them;
h. protecting existing decentralised energy networks (e.g. at Gower Street, Bloomsbury, King's Cross, Gospel Oak and Somers Town) and safeguarding potential network routes; and

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Policy CC2 Adapting to climate change

The Council will require development to be resilient to climate change.

All development should adopt appropriate climate change adaptation measures such as:

a. the protection of existing green spaces and promoting new appropriate green infrastructure;
b. not increasing, and wherever possible reducing, surface water run-off through increasing permeable surfaces and use of Sustainable Drainage Systems;
c. incorporating bio-diverse roofs, combination green and blue roofs and green walls where appropriate; and
d. measures to reduce the impact of urban and dwelling overheating, including application of the cooling hierarchy.

Any development involving 5 or more residential units or 500 sqm or more of any additional floorspace is required to demonstrate the above in a Sustainability Statement.

Sustainable design and construction measures

The Council will promote and measure sustainable design and construction by:

e. ensuring development schemes demonstrate how adaptation measures and sustainable development principles have been incorporated into the design and proposed implementation;
f. encourage new build residential development to use the Home Quality Mark and Passivhaus design standards;
g. encouraging conversions and extensions of 500 sqm of residential floorspace or above or five or more dwellings to achieve "excellent" in BREEAM domestic refurbishment; and
h. expecting non-domestic developments of 500 sqm of floorspace or above to achieve "excellent" in BREEAM assessments and encouraging zero carbon in new development from 2019.

Policy C1 Health and wellbeing

The Council will improve and promote strong, vibrant and healthy communities through ensuring a high quality environment with local services to support health, social and cultural wellbeing and reduce inequalities.

Measures that will help contribute to healthier communities and reduce health inequalities must be incorporated in a development where appropriate.

The Council will require:

a. development to positively contribute to creating high quality, active, safe and accessible places; and
b. proposals for major development schemes to include a Health Impact Assessment (HIA).

We will:

c. contribute towards the health priorities of the Health and Wellbeing Board and partners to help reduce health inequalities across the borough;
d. support the provision of new or improved health facilities, in line with Camden's Clinical Commissioning Group and NHS England requirements; and
e. protect existing health facilities in line with Policy C2 Community facilities.

Policy A4 Noise and vibration

The Council will seek to ensure that noise and vibration is controlled and managed.

Development should have regard to Camden's Noise and Vibration Thresholds (Appendix 3). We will not grant planning permission for:

a. development likely to generate unacceptable noise and vibration impacts; or
b. development sensitive to noise in locations which experience high levels of noise, unless appropriate attenuation measures can be provided and will not harm the continued operation of existing uses.

We will only grant permission for noise generating development, including any plant and machinery, if it can be operated without causing harm to amenity. We will also seek to minimise the impact on local amenity from deliveries and from the demolition and construction phases of development.

Policy CC4 Air quality

The Council will ensure that the impact of development on air quality is mitigated and ensure that exposure to poor air quality is reduced in the borough.

The Council will take into account the impact of air quality when assessing development proposals, through the consideration of both the exposure of occupants to air pollution and the effect of the development on air quality. Consideration must be taken to the actions identified in the Council's Air Quality Action Plan.

Air Quality Assessments (AQAs) are required where development is likely to expose residents to high levels of air pollution. Where the AQA shows that a development would cause harm to air quality, the Council will not grant planning permission unless measures are adopted to mitigate the impact. Similarly, developments that introduce sensitive receptors (i.e. housing, schools) in locations of poor air quality will not be acceptable unless designed to mitigate the impact.

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

The Council will promote sustainable transport by prioritising walking, cycling and public transport in the borough.

Walking

In order to promote walking in the borough and improve the pedestrian environment, we will seek to ensure that developments:

a. improve the pedestrian environment by supporting high quality public realm improvement works;
b. make improvements to the pedestrian environment including the provision of high quality safe road crossings where needed, seating, signage and landscaping;
c. are easy and safe to walk through ('permeable');
d. are adequately lit;
e. 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; and
f. contribute towards bridges and water crossings where appropriate.

Cycling

In order to promote cycling in the borough and ensure a safe and accessible environment for cyclists, the Council will seek to ensure that development:

g. provides for and makes contributions towards connected, high quality, convenient and safe cycle routes, in line or exceeding London Cycle Design Standards, including the implementation of the Central London Grid, Quietways Network, Cycle Super Highways and;
h. provides for accessible, secure cycle parking facilities exceeding minimum standards outlined within the London Plan (Table 6.3) and design requirements outlined within our supplementary planning document Camden Planning Guidance on transport. Higher levels of provision may also be required in areas well served by cycle route infrastructure, taking into account the size and location of the development;
i. makes provision for high quality facilities that promote cycle usage including changing rooms, showers, dryers and lockers;
j. is easy and safe to cycle through ('permeable'); and
k. contribute towards bridges and water crossings suitable for cycle use where appropriate.

Public Transport

In order to safeguard and promote the provision of public transport in the borough we will seek to ensure that development contributes towards improvements to bus network infrastructure including access to bus stops, shelters, passenger seating, waiting areas, signage and timetable information. Contributions will be sought where the demand for bus services generated by the development is likely to exceed existing capacity. Contributions may also be sought towards the improvement of other forms of public transport in major developments where appropriate.

Where appropriate, development will also be required to provide for interchanging between different modes of transport including facilities to make interchange easy and convenient for all users and maintain passenger comfort.

Policy T2 Parking and car-free development

The Council will limit the availability of parking and require all new developments in the borough to be car-free.

We will:

a. not issue on-street or on-site parking permits in connection with new developments and use legal agreements to ensure that future occupants are aware that they are not entitled to on-street parking permits;
b. limit on-site parking to:
   i. spaces designated for disabled people where necessary, and/or
   ii. essential operational or servicing needs;
c. support the redevelopment of existing car parks for alternative uses; and
d. resist the development of boundary treatments and gardens to provide vehicle crossovers and on-site parking.

Policy A3 Biodiversity

The Council will protect and enhance sites of nature conservation and biodiversity. We will:

a. designate and protect nature conservation sites and safeguard protected and priority habitats and species;
b. grant permission for development unless it would directly or indirectly result in the loss or harm to a designated nature conservation site or adversely affect the status or population of priority habitats and species;
c. seek the protection of other features with nature conservation value, including gardens, wherever possible;
d. assess developments against their ability to realise benefits for biodiversity through the layout, design and materials used in the built structure and landscaping elements of a proposed development, proportionate to the scale of development proposed;
e. secure improvements to green corridors, particularly where a development scheme is adjacent to an existing corridor;
f. seek to improve opportunities to experience nature, in particular where such opportunities are lacking;
g. require 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;
h. secure management plans, where appropriate, to ensure that nature conservation objectives are met; and
i. work with The Royal Parks, The City of London Corporation, the London Wildlife Trust, friends of park groups and local nature conservation groups to protect and improve open spaces and nature conservation in Camden.

Trees and vegetation

The Council will protect, and seek to secure additional, trees and vegetation. We will:

j. resist the loss of trees and vegetation of significant amenity, historic, cultural or ecological value including proposals which may threaten the continued wellbeing of such trees and vegetation;
k. require 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;
l. expect 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;
m. expect developments to incorporate additional trees and vegetation wherever possible.

Policy CC3 Water and flooding

The Council will seek to ensure that development does not increase flood risk and reduces the risk of flooding where possible.

We will require development to:

a. incorporate water efficiency measures;
b. avoid harm to the water environment and improve water quality;
c. consider the impact of development in areas at risk of flooding (including drainage);
d. incorporate flood resilient measures in areas prone to flooding;
e. utilise Sustainable Drainage Systems (SuDS) in line with the drainage hierarchy to achieve a greenfield run-off rate where feasible; and
f. not locate vulnerable development in flood-prone areas.

Where an assessment of flood risk is required, developments should consider surface water flooding in detail and groundwater flooding where applicable.

The Council will protect the borough's existing drinking water and foul water infrastructure, including the reservoirs at Barrow Hill, Hampstead Heath, Highgate and Kidderpore.

Policy CC5 Waste

The Council will seek to make Camden a low waste borough.

We will:

a. aim to reduce the amount of waste produced in the borough and increase recycling and the reuse of materials to meet the London Plan targets of 50% of household waste recycled/composted by 2020 and aspiring to achieve 60% by 2031;
b. deal with North London's waste by working with our partner boroughs in North London to produce a Waste Plan, which will ensure that sufficient land is allocated to manage the amount of waste apportioned to the area in the London Plan;
c. safeguard Camden's existing waste site at Regis Road unless a suitable compensatory waste site is provided that replaces the maximum throughput achievable at the existing site; and
d. make sure that developments include facilities for the storage and collection of waste and recycling.

B Justification of number of BREEAM assessments

For developments that are a mix of new build and refurbishment (as is the case with 3-5 Bedford Row) there is a choice of approach with regards to the number and type of BREEAM assessment; these options are discussed in Table 4.

The selected approach is to carry out two simultaneous BREEAM assessments: one BREEAM 2018 New Construction assessment and one BREEAM 2014 Refurbishment and Fit-Out assessment.

The following building areas will be assessed under BREEAM 2018 New Construction (highlighted in blue in Figure 9):

- 3-5 Bedford Row: new fourth floor
- Link Building: new second floor
- 3-5 Jockey's Fields: new third floor

All remaining (retained) building areas will be assessed under BREEAM 2014 Refurbishment and Fit-Out (highlighted in yellow in Figure 9).

Table 4: BREEAM assessment options

Option	Eligibility criteria	Notes	
Single BREEAM New Construction Assessment	None: single assessment covers new build and refurbished areas	Refurbished areas may struggle to meet new build criteria	×
Single BREEAM Refurbishment and Fit-Out assessment	Original building area is smaller than 2,500m^2 AND extension is less than 20% of original area	Not applicable – original building area exceeds 2,500m^2	N/A
	Original building area is greater than 2,500m^2 AND extension is less than 500m^2	Not applicable – extension exceeds 500m^2	N/A
Two assessments	None: New Construction assessment applies to new build areas and Refurbishment and Fit-Out assessment applies to refurbished areas	Selected approach.	✓

Figure 9: BREEAM 2014 Refurbishment and Fit-Out areas (yellow) and BREEAM 2018 New Construction areas (blue)

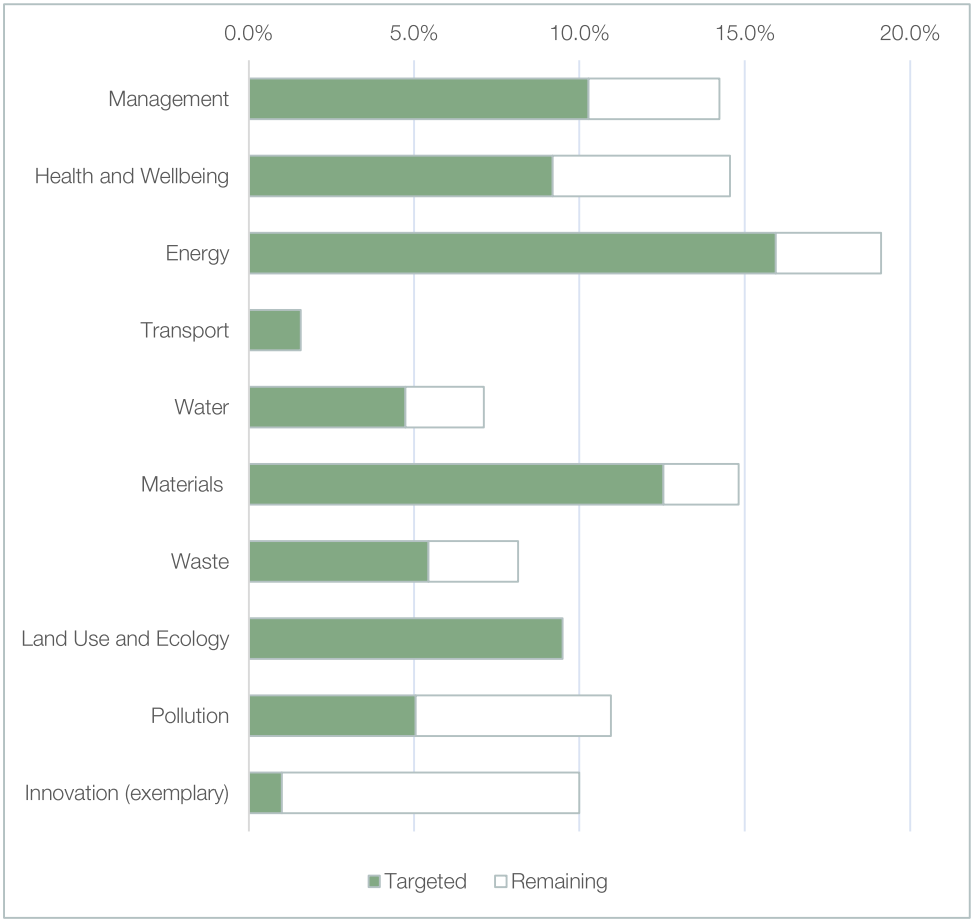
C BREEAM Preliminary Assessment

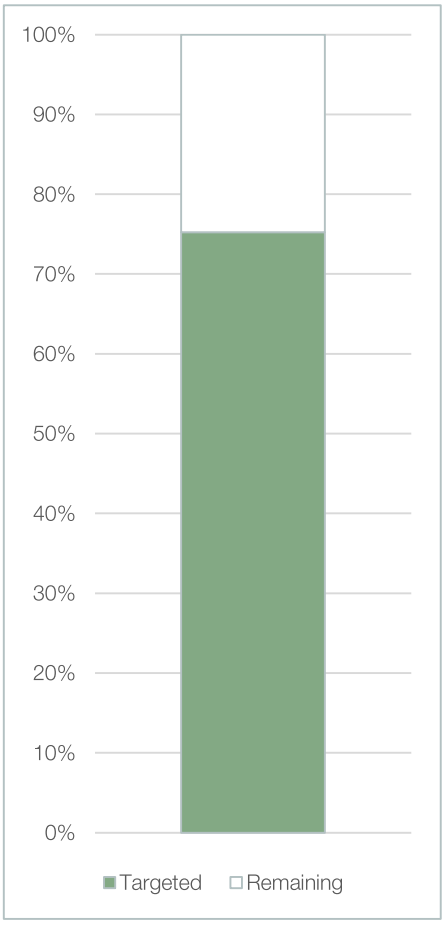
BREEAM Refurbishment & Fit-Out 2014
Summary

elliottwood

Project name	3-5 Bedford Row (existing floors)
Project number	2220153
Building Type	Office
Assessment scope	Parts 1-4
Document version	3
Issue date	12/10/2022

Category	Credits available	Credits targeted	Weighting	Credit value	Target score
Management	18	13	14.2%	0.8%	10.3%
Health and Wellbeing	19	12	14.6%	0.8%	9.2%
Energy	24	20	19.1%	0.8%	15.9%
Transport	7	7	1.6%	0.2%	1.6%
Water	9	6	7.1%	0.8%	4.7%
Materials	13	11	14.8%	1.1%	12.5%
Waste	12	8	8.2%	0.7%	5.4%
Land Use and Ecology	3	3	9.5%	3.2%	9.5%
Pollution	13	6	11.0%	0.8%	5.1%
Innovation (exemplary)	10	1	10.0%	1.0%	1.0%
Total Score					**75.2%**
BREEAM rating					**EXCELLENT**





BREEAM Refurbishment & Fit-Out 2014
Score Sheet

elliottwood

Project name	3-5 Bedford Row(existing floors)
Project number	2220153
Building type	Office
Assessment type	Parts 1-4
Document version	3
Issue date	12/10/2022

Target score	75%
Target rating	EXCELLENT
Potential score	75%
Potential rating	EXCELLENT

Issue ref	Issue title	Credit	Credits				Exemplary credits	
			Max available	Targeted	Potential	Not targeted	Available	Targeted
MANAGEMENT			**18**	**13**	**0**	**5**	**2**	**0**
Man 01	Project brief and design	Project delivery planning	1	1		0		
		Stakeholder consultation	1	0		1		
		BREEAM AP (Concept Design)	1	1		0		
		BREEAM AP (Developed Design)	1	1		0		
Man 02	Life cycle cost and service life planning	Elemental life cycle cost	2	0		2		
		Component level life cycle cost	1	0		1		
		Capital cost reporting	1	1		0		
Man 03	Responsible construction practices	Legally harvest and traded timber	*Prerequisite*					
		Environmental management	1	1		0		
		BREEAM AP (site)	1	1		0		
		Responsible construction management	2	2		0	1	
		Monitoring construction site impacts	2	2		0		
Man 04	Commissioning and handover	Commissioning and testing schedule	1	1		0		
		Commissioning building services	1	1		0		
		Testing and inspecting building fabric	1	0		1		
		Handover	1	1		0		
HEALTH AND WELLBEING			**19**	**12**	**0**	**7**	**5**	**0**
Hea 01	Visual comfort	Control of glare	1	1		0		
		Daylighting	3	0		3	1	
		View out	2	0		2		
		Internal and external lighting levels	1	1		0	1	
Hea 02	Indoor air quality	IAQ Plan	1	1		0		
		Ventilation	1	1		0		
		Emissions from construction products	1	1		0	2	
		Post-construction testing	1	0		1		
		Adaptability - potential for natural ventilation	1	0		1		
Hea 04	Thermal comfort	Thermal modelling	1	1		0		
		Design for future thermal comfort	1	1		0		
		Thermal zoning and control	1	1		0		
Hea 05	Acoustic performance	Sound insulation	1	1		0		
		Indoor ambient noise levels	1	1		0		
		Room acoustics	1	1		0		
Hea 06	Security	Security of site and building	1	1		0	1	
ENERGY			**24**	**20**	**0**	**4**	**11**	**0**
Ene 01	Reduction of energy use and carbon emissions	Energy performance	15	12		3	11	
Ene 02	Energy monitoring	Sub-metering of end-use categories	1	1		0		
		Sub-metering of high energy load areas	1	1		0		
Ene 03	External lighting	Energy consumption	1	1		0		
Ene 04	Low carbon design	Passive design analysis	1	1		0		
		Free cooling	1	0		1		
		LZC technologies	1	1		0		
Ene 06	Energy efficient transportation (lifts)	Energy consumption	1	1		0		
		Energy efficient features	2	2		0		

BREEAM Refurbishment & Fit-Out 2014
Score Sheet

elliottwood

Project name	3-5 Bedford Row(existing floors)
Project number	2220153
Building type	Office
Assessment type	Parts 1-4
Document version	3
Issue date	12/10/2022

Target score	75%
Target rating	EXCELLENT
Potential score	75%
Potential rating	EXCELLENT

Issue ref	Issue title	Credit	Credits				Exemplary credits	
			Max available	Targeted	Potential	Not targeted	Available	Targeted
TRANSPORT			**7**	**7**	**0**	**0**	**0**	**0**
Tra 01	Sustainable transport solutions	Accessibility index	3	3		0		
Tra 02	Proximity to amenities		1	1		0		
Tra 03	Cyclist facilities	Cycle storage	1	1		0		
		Cyclist facilities	1	1		0		
Tra 05	Travel plan		1	1		0		
WATER			**9**	**6**	**0**	**3**	**1**	**0**
Wat 01	Water consumption	Maximum water use	5	2		3	1	
Wat 02	Water monitoring	Water meters	1	1		0		
Wat 03	Water leak detection	Leak detection system	1	1		0		
		Flow control devices	1	1		0		
Wat 04	Water efficient equipment		1	1		0		
MATERIALS			**13**	**11**	**0**	**2**	**2**	**1**
Mat 01	Environmental impacts of construction materials	Project LCA	6	6		0	1	1
Mat 03	Responsible construction practices	Legally harvested and traded timber	*Prerequisite*					
		Sustainable procurement plan	1	1		0	1	
		Measuring responsible sourcing	3	1		2		
Mat 04	Insulation	Embodied impact	1	1				
Mat 05	Designing for durability and resilience		1	1		0		
Mat 06	Material efficiency		1	1		0		
WASTE			**12**	**8**	**0**	**4**	**3**	**0**
Wst 01	Construction waste management	Pre-demolition audit	1	1		0		
		Reuse and direct recycling of materials	2	0		2	1	
		Resource efficiency	3	2		1		
		Diversion of resources from landfill	1	1				
Wst 02	Use of recycled and sustainable aggregates		1	0		1	1	
Wst 03	Operational waste		1	1		0		
Wst 04	Speculative finishes		1	1		0		
Wst 05	Adaptation to climate change		1	1		0	1	
Wst 06	Functional adaptability		1	1		0		
LAND USE AND ECOLOGY			**3**	**3**	**0**	**0**	**0**	**0**
LE 04	Change and enhancement	Ecologist's report and recommendations	1	1		0		
LE 05	Long term impact on biodiversity		2	2		0		
POLLUTION			**13**	**6**	**0**	**7**	**1**	**0**
Pol 01	Impact of refrigerants	Direct effect life cycle CO2 equivalent emissions	2	1		1		
		Leak detection	1	0		1		
Pol 02	Nox emissions		3	0		3		
Pol 03	Flood and surface water management	Flood resilience	2	2		0		
		Surface water run-off	2	1		1		
		Minimising watercourse pollution	1	0		1	1	
Pol 04	Reduction of night time light pollution		1	1		0		
Pol 05	Reduction of noise pollution		1	1		0		

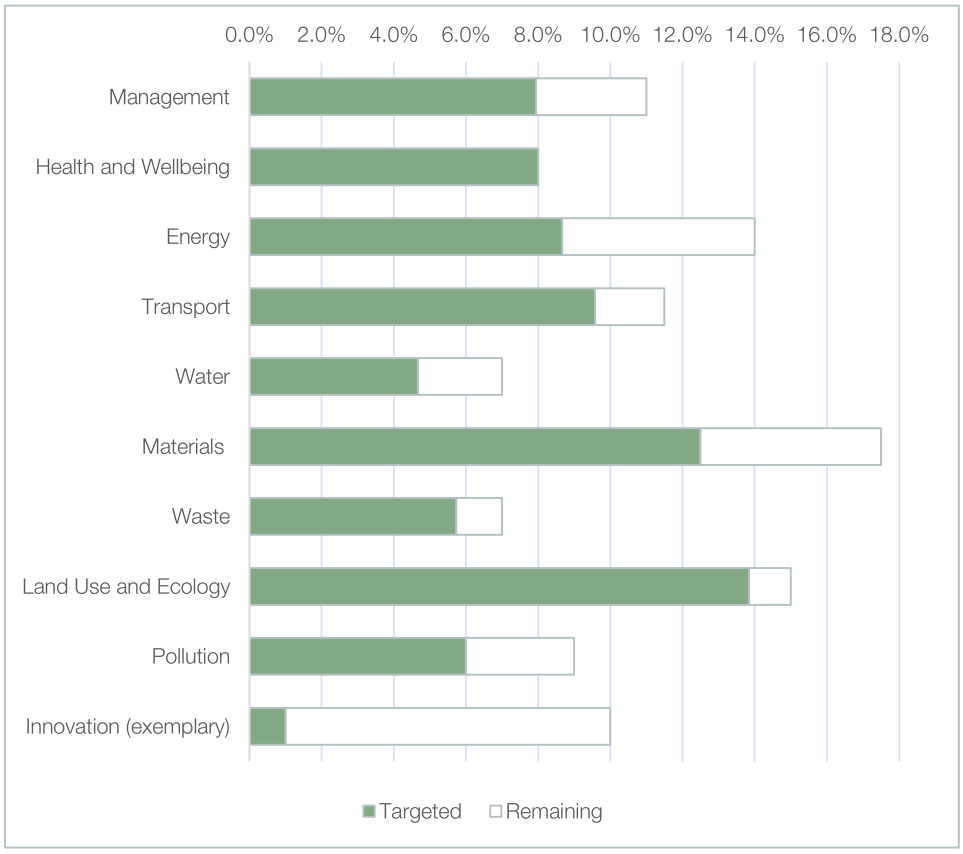
BREEAM New Construction 2018

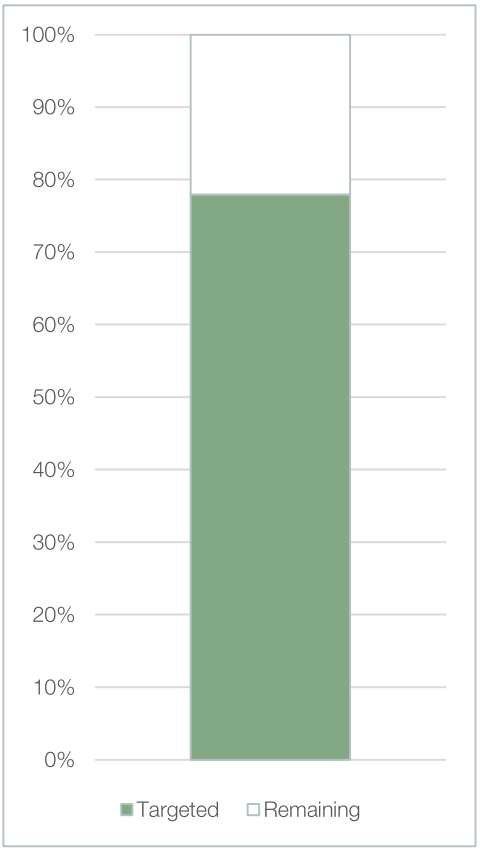
Summary

elliottwood

Project name	3-5 Bedford Row (new floors)
Project number	2220153
Building Type	Office
Assessment Type	Shell and Core
Document version	3
Issue date	12/10/2022

Category	Credits available	Credits targeted	Weighting			Credit value	Target score
			Fully Fitted	Shell and Core	Shell		
Management	18	13		11%		0.6%	7.9%
Health and Wellbeing	11	11		8%		0.7%	8.0%
Energy	21	13		14%		0.7%	8.7%
Transport	12	10		12%		1.0%	9.6%
Water	9	6		7%		0.8%	4.7%
Materials	14	10		18%		1.3%	12.5%
Waste	11	9		7%		0.6%	5.7%
Land Use and Ecology	13	12		15%		1.2%	13.8%
Pollution	12	8		9%		0.8%	6.0%
Innovation (exemplary)	10	1		10%		1.0%	1.0%
Total Score							77.9%
BREEAM rating							EXCELLENT





BREEAM New Construction 2018
Score Sheet

elliottwood

Project name	3-5 Bedford Row (new floors)
Project number	2220153
Building type	Office
Assessment type	Shell and Core
Document version	3
Issue date	12/10/2022

Target score	78%
Target rating	EXCELLENT
Potential score	78%
Potential rating	EXCELLENT

Issue ref	Issue title	Credit	Credits				Exemplary credits	
			Max available	Targeted	Potential	Not targeted	Available	Targeted
MANAGEMENT			**18**	**13**	**0**	**5**	**1**	**0**
Man 01	Project brief and design	Project delivery planning	1	1		0		
		Stakeholder consultation	1	0		1		
		BREEAM AP (Concept Design)	1	1		0		
		BREEAM AP (Developed Design)	1	1		0		
Man 02	Life cycle cost and service life planning	Elemental life cycle cost	2	0		2		
		Component level life cycle cost	1	0		1		
		Capital cost reporting	1	1		0		
Man 03	Responsible construction practices	Legally harvest and traded timber	*Prerequisite*					
		Environmental management	1	1		0		
		BREEAM AP (site)	1	1		0		
		Responsible construction management	2	2		0	1	
		Monitoring construction site impacts	2	2		0		
Man 04	Commissioning and handover	Testing schedule and responsibilities	1	1		0		
		Design and preparation	1	1		0		
		Testing and inspecting building fabric	1	0		1		
		Handover	1	1		0		
Man 05	Aftercare	Aftercare support	0			0		
		Commissioning	0			0		
		Post-occupancy evaluation	0			0		
HEALTH AND WELLBEING			**11**	**11**	**0**	**0**	**4**	**0**
Hea 01	Visual comfort	Control of glare	0			0		
		Daylighting	2	2		0	1	
		View out	1	1		0		
		Internal and external lighting levels	1	1		0	1	
Hea 02	Indoor air quality	IAQ Plan	*Prerequisite*					
		Ventilation	1	1		0		
		Emissions from construction products	0			0	1	
		Post-construction testing	0			0		
Hea 04	Thermal comfort	Thermal modelling	1	1		0		
		Design for future thermal comfort	1	1		0		
		Thermal zoning and control	0			0		
Hea 05	Acoustic performance	Sound insulation	0			0		
		Indoor ambient noise levels	1	1		0		
		Room acoustics	0			0		
Hea 06	Security	Security of site and building	1	1		0	1	
Hea07	Safe and healthy surroundings	Safe access	1	1		0		
		Outside space	1	1		0		
ENERGY			**21**	**13**	**0**	**8**	**5**	**0**
Ene 01	Reduction of energy use and carbon emissions	Energy performance	9	6		3	5	
		Predict operaitonal energy consumption	4	0		4		
Ene 02	Energy monitoring	Sub-metering of end-use categories	1	1		0		
		Sub-metering of high energy load areas	1	1		0		
Ene 03	External lighting	Energy consumption	1	1		0		
Ene 04	Low carbon design	Passive design analysis	1	1		0		
		Free cooling	1	0		1		
		LZC technologies	1	1		0		
Ene 06	Energy efficient transportation (lifts)	Energy consumption	1	1		0		
		Energy efficient features	1	1		0		

BREEAM New Construction 2018
Score Sheet

elliottwood

Project name	3-5 Bedford Row (new floors)
Project number	2220153
Building type	Office
Assessment type	Shell and Core
Document version	3
Issue date	12/10/2022

Target score	78%
Target rating	EXCELLENT
Potential score	78%
Potential rating	EXCELLENT

Issue ref	Issue title	Credit	Credits				Exemplary credits	
			Max available	Targeted	Potential	Not targeted	Available	Targeted
TRANSPORT			**12**	**10**	**0**	**2**	**0**	**0**
Tra 01	Transport assessment and travel plan		2	2		0		
Tra 02	Sustainable transport measures		10	8		2		
WATER			**9**	**6**	**0**	**3**	**1**	**0**
Wat 01	Water consumption		5	2		3	1	
Wat 02	Water monitoring		1	1		0		
Wat 03	Water leak detection	Leak detection system	1	1		0		
		Flow control devices	1	1		0		
Wat 04	Water efficient equipment		1	1		0		
MATERIALS			**14**	**10**	**0**	**4**	**4**	**1**
Mat 01	Environmental impacts of construction materials	Superstructure - comparison with benchmark	0	0		0		
		Superstructure - options appraisal	6	6		0	3	1
		Substructure and hard landscaping	1	1		0		
Mat 02	Environmental product declarations		1	0		1		
Mat 03	Responsible construction practices	Legally harvest and traded timber	*Prerequisite*					
		Sustainable procurement plan	1	1		0	1	
		Measuring responsible sourcing	3	0		3		
Mat 05	Designing for durability and resilience		1	1		0		
Mat 06	Material efficiency		1	1		0		
WASTE			**11**	**9**	**0**	**2**	**3**	**0**
Wst 01	Construction waste management	Pre-demolition audit	1	1		0		
		Construction resource efficiency	3	2		1	1	
		Diversion of resources from landfill	1	1		0		
Wst 02	Use of recycled and sustainable aggregates		1	0		1	1	
Wst 03	Operational waste		1	1		0		
Wst 04	Speculative finishes		1	1		0		
Wst 05	Adaptation to climate change		1	1		0	1	
Wst 06	Design for disassembly and adaptability		2	2		0		
LAND USE AND ECOLOGY			**13**	**12**	**0**	**1**	**2**	**0**
LE 01	Site selection	Previously occupied land	1	1		0		
		Contaminated land	1	0		1		
LE 02	Identifying risks and opportunities	Survey and evaluation	1	1		0		
		Determining ecological outcomes	1	1		0	1	
LE 03	Managing negative impacts on ecology	Identify risks and opportunities	*Prerequisite*					
		Planning and implementation	1	1		0		
		Managing negative impacts	2	2		0		
LE 04	Change and enhancement	Identify risks and opportunities	*Prerequisite*					
		Planning, implementation and data collection	1	1		0		
		Change and enhancement of ecology	3	3		0	1	
LE 05	Long term ecology management	Roles and responsibilities	*Prerequisite*					
		Planning, liaison, data monitoring and review	1	1		0		
		Landscape and ecology management plan	1	1		0		
POLLUTION			**12**	**8**	**0**	**4**	**0**	**0**
Pol 01	Impact of refrigerants	Direct effect life cycle CO2 equivalent emissions	2	1		1		
		Leak detection	1	0		1		
Pol 02	Local air quality		2	2		0		
Pol 03	Flood and surface water management	Flood resilience	2	2		0		
		Surface water run-off	2	1		1		
		Minimising watercourse pollution	1	0		1		
Pol 04	Reduction of night time light pollution		1	1		0		
Pol 05	Reduction of noise pollution		1	1		0		

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