Energy Strategy Addendum

Issue 0 – Planning comments
10/06/2024

14 Bedford Row

Prepared for:

TRUE NORTH MANAGEMENT

Prepared by:
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Issue	Date	Issue Details	Changes	Prepared by	Reviewed by	Approved by
0	10/06/24	Issued for comments	-	MA/JB	MA	

Executive Summary

A comprehensive planning application has been submitted, which includes the Energy Statement prepared by Energylab Consulting Ltd. The document below responds to the queries raised by the Energy Officer from the council, requesting additional clarifications and information.

Officer Comments Item 1

The reductions presented overall are equivalent to a 70% reduction which is welcomed. The reductions of 11.56 % at Be Lean and 25.9% at Be Green are also welcomed. However, the reduction of 32.23% at Be Clean is incorrect given that the development is not proposed to connect to a district heating network. The Energy Statement states in 4.2.5 that the carbon emission reductions are achieved via Under floor heating. This is not a recognised technology for 'Be Clean' and the savings should not be attributed to this. The GLA Energy Assessment Guidance 2022 clearly states in section 9.10 that "Direct electric heating will not be acceptable in a majority of cases as it will not provide any on-site carbon savings in line with energy hierarchy and is likely to result in higher energy bills. Direct electric systems are also not compatible with connection to district heating networks". Only carbon savings from heating systems connected to district heating networks should be categorised under 'Be Clean'.

Issue 1: Reconsideration of alternatives to direct electric heating required and resubmission of carbon reductions ensuring correct calculation of Be Lean / Be Clean and Be Green savings. ACTION: Updated energy strategy with carbon calculations required.

Energylab_ Response: Thank you for the note. We have reviewed the carbon reduction calculations and made updates to the results in the table provided. The electric UFH system's impact has been reclassified from the Clean model to the Green model. Despite this change, the overall CO2 reduction remains consistent with the initially projected decrease, as indicated in the table below.

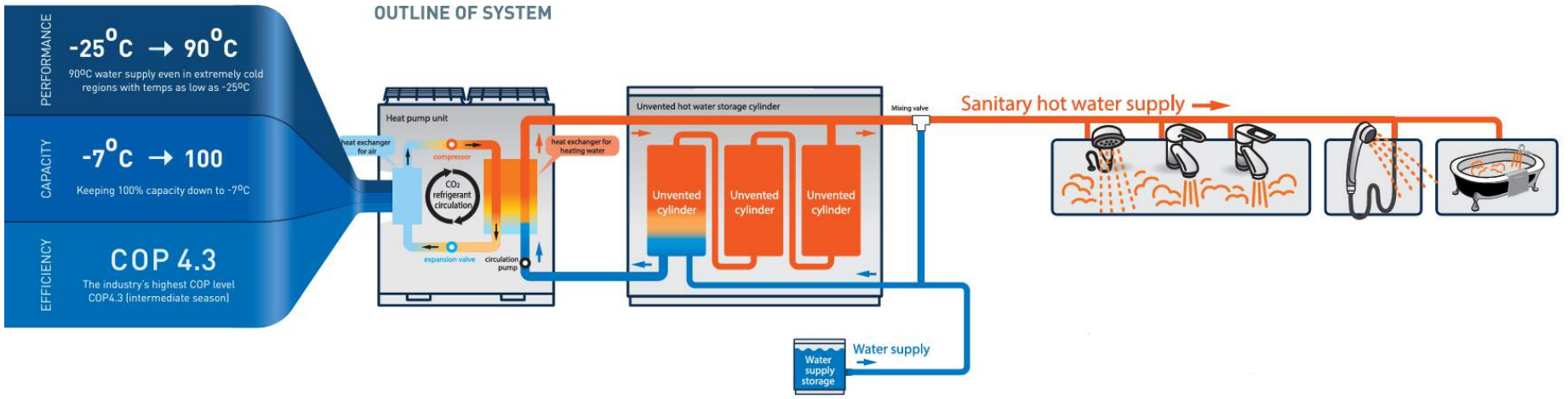
Carbon (CO_2) Emission Reductions		
	(Tonnes CO_2 savings per annum)	(%)
Baseline Existing Building Emission	147.64	-
Energy Demand Reduction Savings (Be Lean)	17.1	12%
Heat Network/Active Savings (Be Clean)	0.0	00%
Renewable Technologies Savings (Be Green)	90.4	61%
Total Potential On Site Savings	**107.4**	**73%**

Officer Comments Item 2

Air Source Heat Pump proposed for hot water – ASHP generally welcomed however a COP of 4 or more or SCOP of 3.4 is recommended.

Issue 2: Further information required on the efficiency of the ASHP for hot water provision. ACTION: Confirmation required that the proposed ASHP has a COP of at least 4 or SCOP of 3.4.

Energylab_ Response: The proposed ASHP technology proposed to serve the hot water demand of the development is Mitsubishi Q-Ton system with a COP of 4.3. Please find attached generic technical data sheet of the proposed system.



Officer Comments Item 3

It is noted that Wastewater Heat Recovery is referred to but is not one of the active design measures proposed for the development, but no justification is provided.

Issue 3: Further consideration of the inclusion of Wastewater Heat Recovery requested. ACTION: Further information required.

Energylab_ Response: This particular system proves to be efficient when it is situated near the heat source, in this case the centralised hot water cylinder (heat source) found within the Jockey's Field plant room. In this instance the hot water cylinder is positioned far away from the majority of the rooms (bathrooms), resulting in inefficient heat recovery from these distant areas due to potential heat loss during transmission to the hot water cylinder. Consequently, this system is unsuitable for this type of installation and is better suited for situations where it is in close proximity to the heat source, which is not the case here.

Officer Comments Item 4

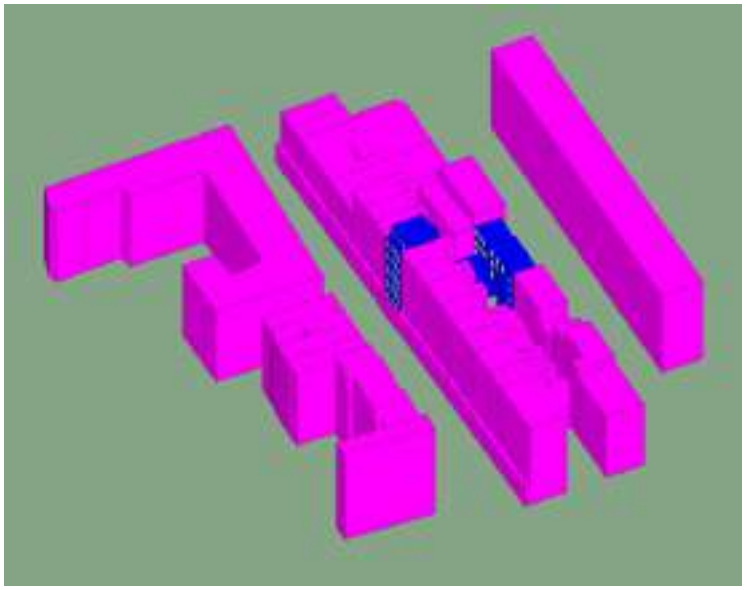
It is noted that active cooling is proposed. Page 11 refers to proposed G Value of glazing of 0.4 to 0.65. It is not clear if the lower G-values to reduce solar gain are on the south and west elevations. Consideration should also be given to passive measures such as external shading before consideration of active cooling. MVHR with air tempering should also be considered. If an overheating risk remains in some areas after these measures are considered, then active cooling in those areas would be permitted but it should not be assumed that all areas will require active cooling.

Issue 4: Further consideration of the cooling hierarchy required, including details of areas with differing G values, consideration of external shading (except on the Bedford Row elevation due to conservation reasons), consideration of MVHR with air tempering and details of any areas with a residual overheating risk should be provided. The full Dynamic Thermal Modelling results indicating the areas which will require active cooling should be provided. ACTION: Further information required to reduce cooling demand and justify active cooling

Energylab_ Response: Active cooling is only required in c.20% of the spaces within the property. The full dynamic thermal modelling results has been provided within appendix 6, 7 & 8 of the Energy Strategy report. The MVHR with air tempering (via DX coil) principle is what has been considered and proposed to mitigate the overheating risks. Please refer to section 4.1 and in particular section 4.1.1.4. It is the design team's intention to keep in place the existing windows as they were upgraded across the building in 2013, this will also result in minimal change to the existing facades. All new glazing within the courtyard

extension to the rear of 14 Jockey's Fields will have high performing triple glazing with a U-value of 1.0 W/m2k and a G-value of 0.4. In addition, in order to improve the single glazing along the front facade of 14 Bedford Row secondary glazing will be installed internally to improve its fabric performance. The project design team adhered to the London Plan cooling hierarchy in their strategy to address overheating by focusing on minimizing heat buildup initially through passive methods, significantly enhancing the indoor environment of the living areas. As a result of this strategy, only 14 out of the 68 evaluated spaces needed minimal cooling. The project design team is confident that they have implemented all feasible passive and active design solutions to address the issue of overheating without compromising the building's aesthetics or structural integrity.

Th rooms/space provided with limited comfort cooling are equally divided between the rooms/spaces facing Bedford row (restricted and listed façade) and the rooms located on the rear elevation of Jockey's Field. Internal shading in first instance will be considered in the next stage of the design to limit any impact on the Conservation Are and the views from the neighbouring residential properties.



Officer Comments Item 5

PV is proposed which is welcomed with 14 panels which are expected to provide 4.7kWp. It is not clear if PV has been maximised on all suitable roof areas.

Issue 5: Consideration of addition PV. ACTION: Further information required.

Energylab_ Response: The inclusion of PV panels has been maximised in the only roof location suitable for panels, being that of 12-14 Jockey's Fields (as shown in Appendix 1). Panels cannot be installed on the roof of 14 Bedford Row due its listed status, and nor can they be introduced on the roof of the link structure, which comprises of external green amenity for guests as well as a new plant enclosure.

Officer Comments Item 6

Issue 6: BREEAM pre assessment report required showing BREEAM Excellent will be targetted with at least 60% of the available credits for Energy and Water and 40% for Materials. ACTION: Further information required.

Energylab_ Response: This assessment has already been provided to demonstrate the potential for this development to achieve a BREEAM Refurbishment rating of Excellent. Attached to appendix 2 of this document for reference.

Officer Comments Item 7

I was unable to locate any mention of grey water or rainwater harvesting. The Camden Local Plan section 8.55 (see below) states that high water use developments such as hotels should include these. CPG Water and Flooding section 2.14 sets out the requirement for a Feasibility assessment. This should be undertaken prior to approval to enable it to be incorporated into the design.

Issue 7: Grey water/ Rainwater harvesting Feasibility assessment should be undertaken. ACTION: Further information required.

Energylab_ Response: The existing layout poses challenges due to the presence of three linked structures that offer little room for adjustments and modifications to the drainage setup for greywater recycling inclusion. Moreover, the complexity and cost associated with implementing such a system for this modest project are disproportionate. However, the option of rainwater harvesting may be explored and integrated into the service plan at a later phase of the design process, if deemed suitable.

energylab_
Building Services and Sustainability Designers

energylab_ is a dynamic consultancy specialising in sustainability and sustainable design. We have extensive experience in both design and management across a broad range of sectors where we aim to embrace circular economy principles and low energy design practices.

Our vision is to deliver efficient and flexible environments which are engineered to help people work in an sustainable, effective and collaborative way.

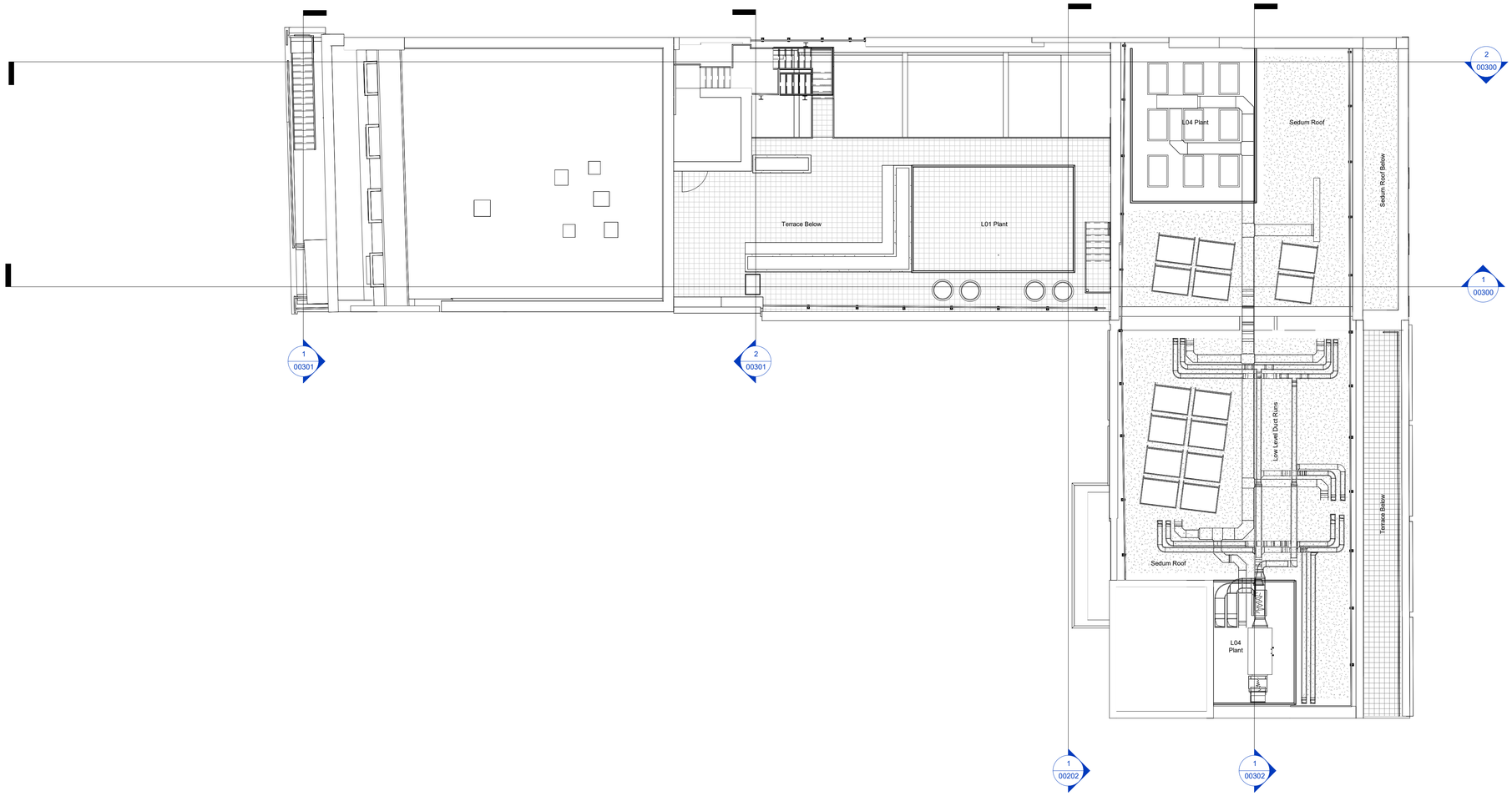
We have a proactive approach to spatial design and how building services integrate within the space. We offer our clients a high quality service by working closely with them and their team to achieve a successful end product which meets the ESG agenda.

energylab_ wants to change that way of working by providing a more strategic and integrated approach to workplace design.

We do things differently……..

Appendix 1

30/04/2024 20:32:11



KEY

PROPOSED

OUT OF SCOPE

EXISTING CONDITION

REV	DATE	DESCRIPTION
P01	260424	FOR PLANNING

0 2 4 10m

PROJECT TEAM	
CLIENT	TRUE NORTH MANAGEMENT
PROJECT MANAGER	DRUM
HERITAGE	DONALD INSALL ASSOCIATES
COST CONSULTANT	EXIGERE
STRUCTURAL ENGINEER	MOSAIC
MEP	ENERGY LAB
PLANNING CONSULTANT	SAVILLS
FIRE CONSULTANT	SEMPER
TRANSPORT CONSULTANT	MOTION
COMMS	CONCILIO COMMS
CONSULTANT	RE: SHAPE LIVING
CONSULTANT	ARC

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LOCATION

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LONDON, WC1R 4ED

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job title

14 Bedford Row

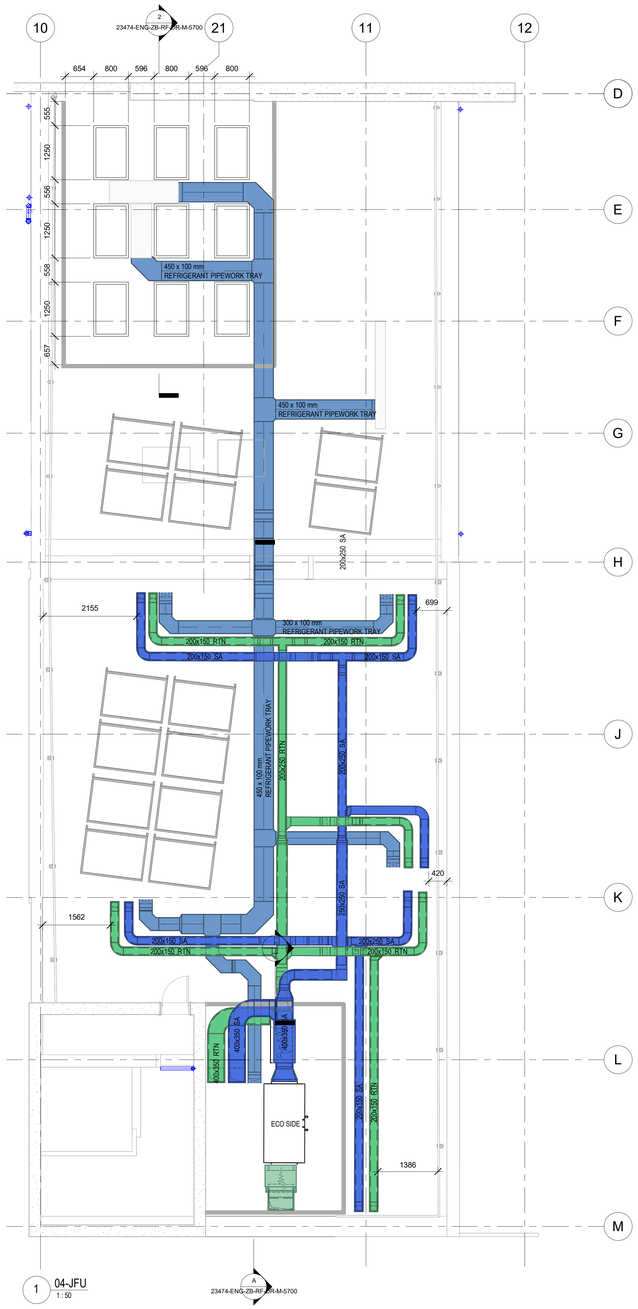
drawing title / location

Proposed Roof Plan

drawn by	checked	scale @A1	status	revision
FB	CM	1 : 100	S2	P01

sheet no.

5491-WRA-ZZ-05-DR-A-P00105



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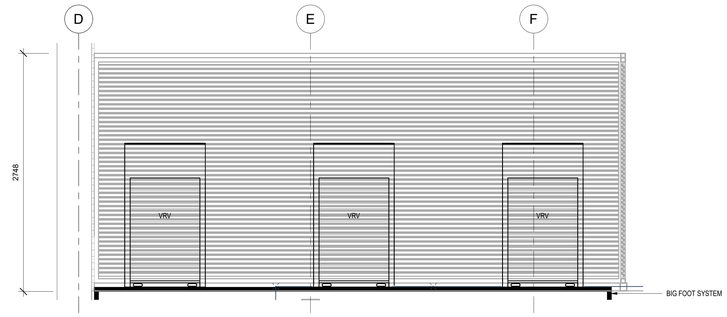

2 SECTION B-B
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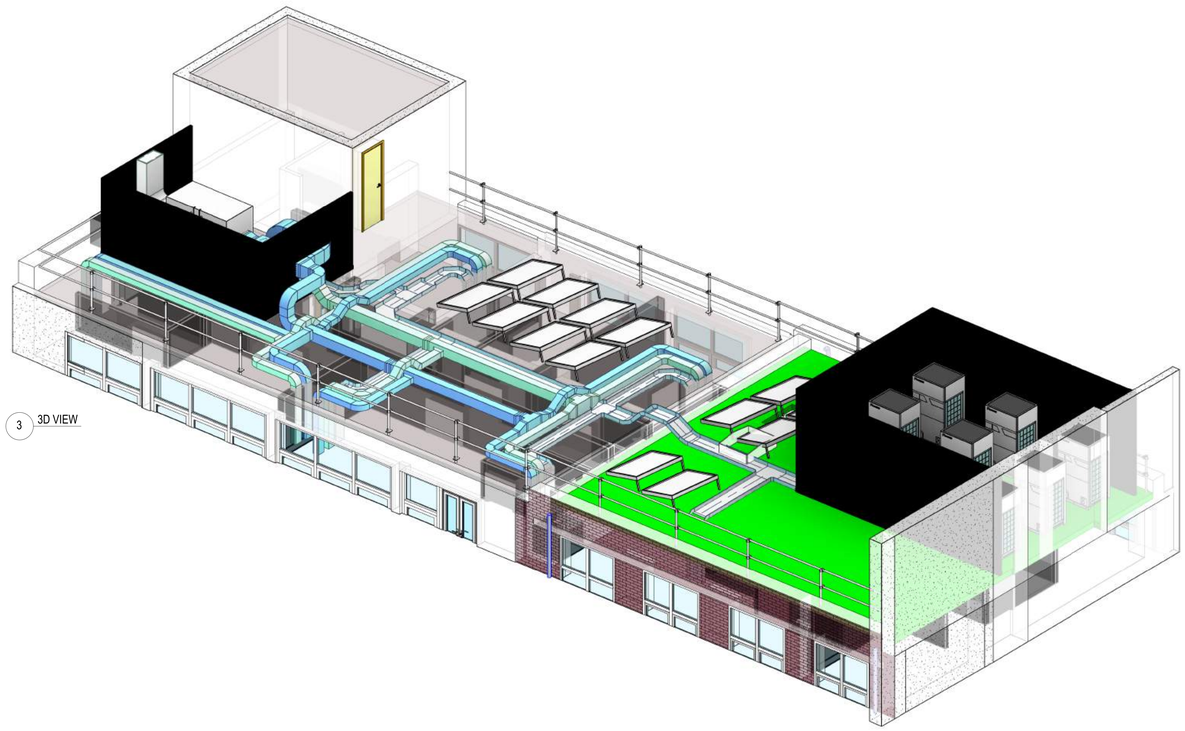
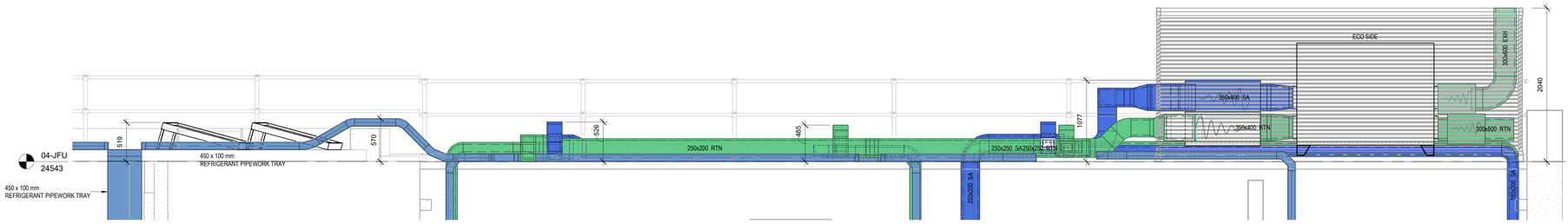


3 3D VIEW



A SECTION A-A
1 : 25

WORK IN PROGRESS

GENERAL NOTES

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7. THE CONTRACTOR SHALL REFER TO ARCHITECTS OR INTERIOR DESIGN DRAWINGS INCLUDING REFLECTED CEILING PLANS AND OTHER SPECIALIST DRAWINGS FOR SETTING OUT ALL VISIBLE WALL AND CEILING MOUNTED EQUIPMENT

A0 ORIGINAL SIZE DRAWING

No.	REVISION	CHK	DATE
P01	ISSUED FOR INFORMATION	MA	24/04/24

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CLIENT
Owner

PROJECT
14 BEDFORD ROW

TITLE
MECHANICAL - MECHANICAL STRATEGY-ROOF LEVEL LAYOUT

DATE CREATED	SCALE
2024/04/24	As indicated

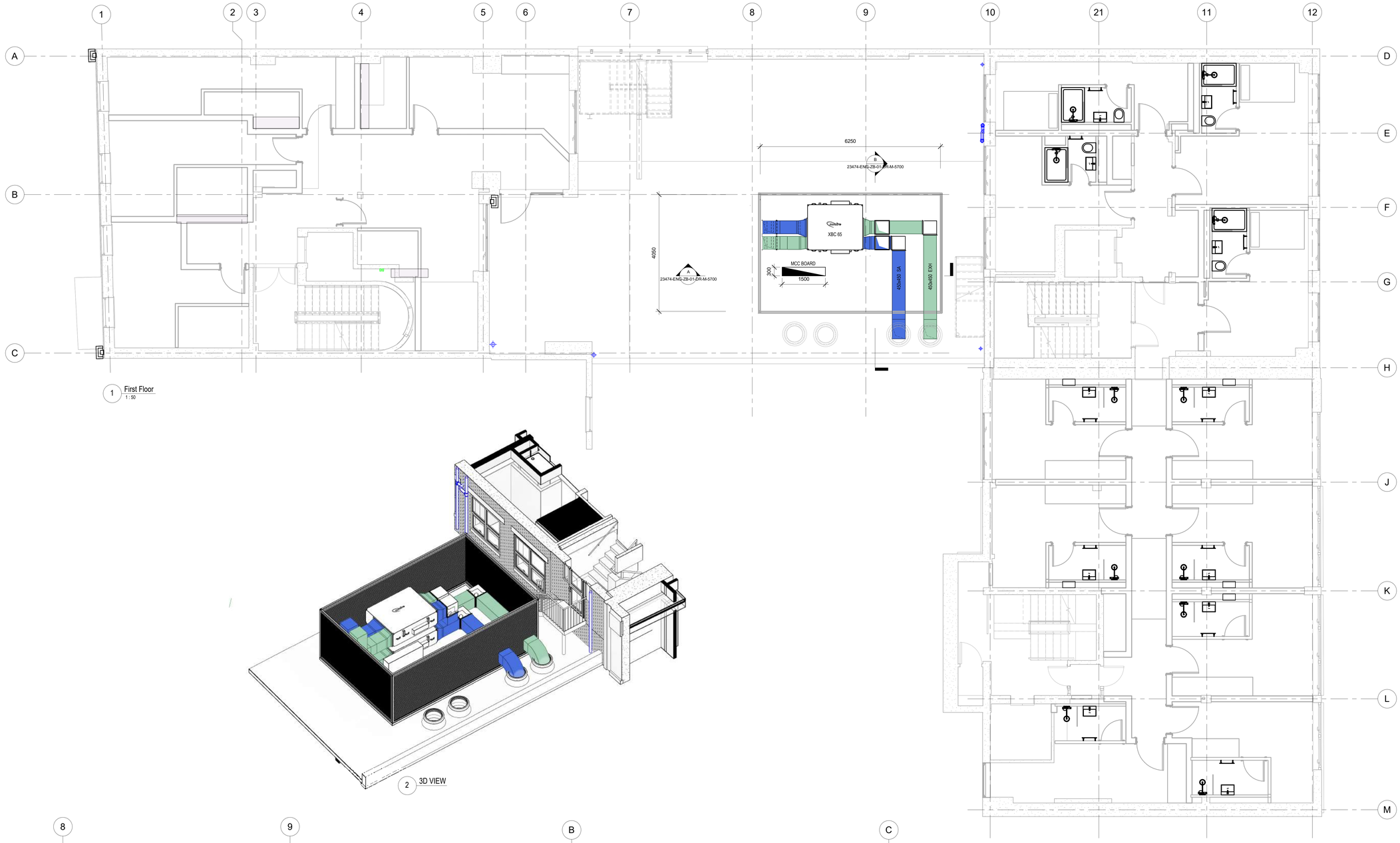
DESIGNED	CHECKED	APPROVED
KB	KB	MA

SUITABILITY CODE	SUITABILITY DESCRIPTION
S01	ISSUED FOR INFORMATION

DRAWING STATUS
STAGE 2 - DRAFT ISSUE

DRAWING No.
23474-ENG-ZB-RF-DR-M-5700

REVISION
P01



1 First Floor
1 : 50

2 3D VIEW

A SECTION A-A
1 : 25

B SECTION B-B
1 : 25

WORK IN PROGRESS

GENERAL NOTES

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A0 ORIGINAL SIZE DRAWING

No.	REVISION	CHK	DATE
P01	ISSUED FOR INFORMATION	MA	24/04/24

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CLIENT
Owner

PROJECT
14 BEDFORD ROW

TITLE
MECHANICAL- MECHANICAL STRATEGY - FIRST FLOOR LAYOUT

DATE CREATED	SCALE
2024/04/24	As indicated

DESIGNED	CHECKED	APPROVED
KB	KB	MA

SUITABILITY CODE	SUITABILITY DESCRIPTION
S01	ISSUED FOR INFORMATION

DRAWING STATUS
STAGE 2 - DRAFT ISSUE

DRAWING No.
23474-ENG-ZB-01-DR-M-5700

REVISION
P01

Appendix 2

BREEAM Pre Assessment for planning

Issue 3 - Issued as WIP Draft
29/04/2024

14 Bedford Row & 12-14 Jockey's Fields,
Camden, London, WC1R 4ED

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Issue	Date	Issue Details	Changes	Prepared by	Reviewed by	Approved by
0	12/04/24	Issued as WIP Draft		MA		
1	24/04/24	Issued as Draft	Incorporating client comments	MA		
2	26/04/24	Issued for comments	Incorporating client comments	MA		
3	29/04/24	Issued for comments	Incorporating client comments			

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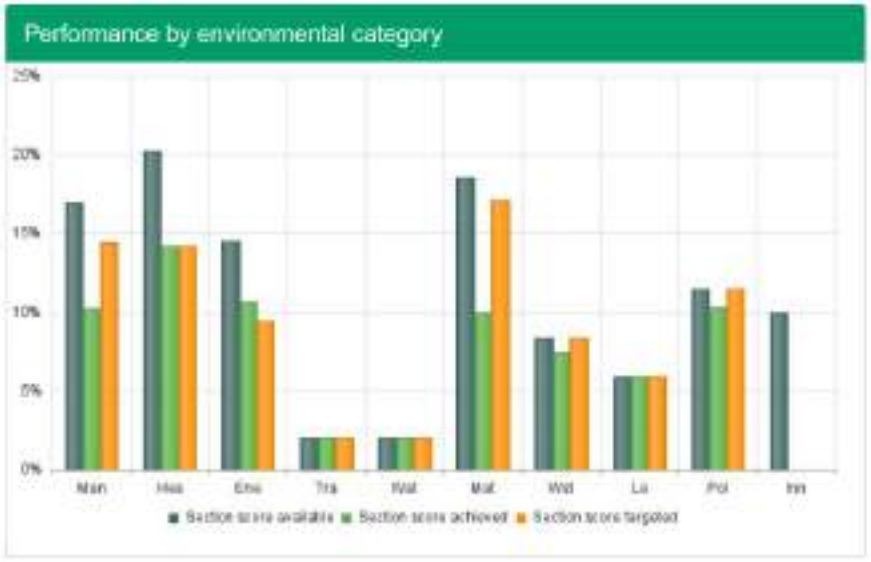
Contents

Executive Summary

This BREEAM Pre assessment has been carried out for 14 Bedford Row.

This BREEAM pre - assessment demonstrates compliance with the Local Authority's policies in relation to BREEAM assessments and the potential for the development to achieve a BREEAM Excellent.

The BREEAM Pre- Assessment demonstrate the potential to achieve **BREEAM Excellent standard** with total score of **72.64%** as shown below:



BREEAM Excellent standard has been achieved based on the initial design information available at this stage and the project team commitments to achieve the highest environmental performances throughout.

This pre-assessment will be updated as the design progresses and the current category score performance shown at this stage may differ, however, the overall target of BREEAM Excellent would be maintained.

The BREEAM pre Assessment has been carried out using the **BREEAM UK Refurbishment & Fit Out 2014**

BREEAM UK BREEAM UK Refurbishment & Fit-out 2014

Pre-assessment : Design Stage : BEDFORD ROW - APART HOTEL (23473)

BREEAM Rating

	Credits available	Credits achieved	Credits targeted	% Credits achieved	Weighting	Category score	Target score
Man	20.0	12.0	17.0	60.00%	16.97%	10.18%	14.42%
Hea	20.0	14.0	14.0	70.00%	20.25%	14.17%	14.17%
Ene	17.0	12.5	11.0	73.53%	14.54%	10.68%	9.40%
Tra	2.0	2.0	2.0	100.00%	1.98%	1.98%	1.98%
Wat	2.0	2.0	2.0	100.00%	1.98%	1.98%	1.98%
Mat	13.0	7.0	12.0	53.85%	18.58%	9.99%	17.13%
Wst	9.0	8.0	9.0	88.89%	8.35%	7.42%	8.35%
Le	2.0	2.0	2.0	100.00%	5.94%	5.94%	5.94%
Pol	10.0	9.0	10.0	90.00%	11.42%	10.28%	11.42%
Inn	10.0	0.0	0.0	0.00%	10.00%	0.00%	0.00%
Total	105.0	68.5	79.0	65.24%	-	72.64%	84.82%
Rating	-	-	-	-	-	★★★★ Excellent	Excellent

1. Introduction

1.1 Existing Site

14 Bedford Row is located within the southern part of the London Borough of Camden. The site comprises three interconnected buildings which stretch from 14 Bedford Row at the front through to 12-13 and 14 Jockey's Fields (via a basement and ground floor link structure) at the rear. The property has been unoccupied for several years, but was last in use as the Headquarters for the Chartered Society of Physiotherapy. The three buildings were built at different times, with different structures, levels, configurations and typologies. Please see figure 1.

Figure 1: Aerial Site Plan (Source: Google Maps)

The surrounding context is a mixture of residential and commercial premises, with buildings varying in height between 4-6 stories. The streets are wide, and tree-lined, providing bicycle racks and curbside parking. The vernacular of the area is or is heavily influenced by Georgian architecture.

1.1.2 14 Bedford Row

14 Bedford Row is Grade II Listed, whilst the entirety of the site sits within the Bloomsbury Conservation Area. This naturally presents limitations to the level of intervention capable of being implemented. Originally constructed in 1717-1718, and rebuilt in 1967 it is 4 stories tall from ground level, with an additional basement floor, being of solid masonry construction with a concrete core/frame. The building currently has individual partitioned offices which host high ceilings. Please see Figure 2 for the front elevation.

Figure 2: 14 Bedford Row elevation

1.1.3 12-13 Jockey's Fields

12-13 Jockey's Fields is a 4-story tall building with the 4th floor being stepped back, it is a concrete frame structure infilled with blockwork and large glazing units, built in 1969. The building is currently a low ceiling, completely open plan office with few private offices.

The Ground floor garages behind the metal shutter and beneath the 1st floor slab as shown in Figure 3, do not belong to the development being private residential parking for the owners at 12-13 Bedford Row and as such are not included within the plans of work.

Figure 3: 12-13 Jockey's Fields elevation

1.1.4 14 Jockey's Fields

14 Jockey's Fields is the newest edition of the 3 buildings being built in 1986 it is 3 stories tall, with an additional large single-storey extension to the rear and basement throughout, it is assumed to be a concrete frame building with cavity walls construction. Currently, the building is being used as individual low-ceiling offices with a large function room located at the rear with supporting conference rooms. Please see Figure 4 for the front elevation.

Figure 4: 14 Jockey's Fields

1.2 The Proposal

The proposed development is for the refurbishment of all 3 buildings into a single high-quality apart-hotel comprising 65 rooms, with supporting amenity space, a rooftop terrace, and a cycle store.

As part of the Development there will be some minor external work carried out to the rear of the 14 Jockey's fields, please see Figure 5 for the plan highlighting key areas and Table 1 for an area schedule of all provisions.

Figure 5: Fourth Floor plan - Courtyard infill (red), Courtyard creation (green), Rooftop plant (orange) - (Source: White Red)

Infilling Courtyard - This will be in the form of infiling the existing courtyard to provide additional internal floor space and allow for the removal of a significant proportion of outdated poorly performing and utilised glazing.

Creation of a new courtyard - There will also be the creation of a new external courtyard that would run along the boundary of 15 Jockey's Fields providing a considerable increase in green space and allowing for greater natural day light in the ground and lower ground floor room.

Table 1: Site Area Schedule
Please refer to appendix 4

Creation of rooftop plant: there will be the creation of three rooftop plant enclosures - one sitting on the link structure terrace, and the other two on the roofs of 12-13 and 14 Jockey's Fields - to meet the MEP demands for servicing the development.

For further details please see the Design and Access statement submitted alongside this document produced by White Red Architects.

2. Methodology

The BREEAM UK Refurbishment & Fit Out 2014 is a performance-based assessment method and certification scheme for new buildings.

BREEAM UK Refurbishment & Fit Out 2014 version 6 2022 has been used in this pre-assessment.

Project scope would be Fully Fitted.

The primary aim of BREEAM UK Refurbishment & Fit Out 2014 is to mitigate the life cycle impacts of new buildings on the environment in a robust and cost-effective manner. This is achieved through integration and use of the scheme by clients and their project teams at key stages in the design and construction process.

Clients can measure, evaluate and reflect the performance of their new building against best practice in an independent and robust manner.

Performance is quantified by individual measures and associated criteria stretching across a range of environmental issues and expressed as a single certified BREEAM rating.

Environmental sections and assessment issues in BREEAM UK New Construction Version 6

Management	Health and Wellbeing
– Man 01 Project brief and design – Man 02 Life cycle cost and service life planning – Man 03 Responsible construction practices – Man 04 Commissioning and handover – Man 05 Aftercare	– Hea 01 Visual comfort – Hea 02 Indoor air quality – Hea 04 Thermal comfort – Hea 05 Acoustic performance – Hea 06 Security – Hea 07 Safe and healthy surroundings
Energy	Transport
– Ene 01 Reduction of energy use and carbon emissions – Ene 02 Energy monitoring – Ene 03 External lighting – Ene 04 Low carbon design – Ene 05 Energy efficient cold storage – Ene 06 Energy efficient transportation systems – Ene 07 Energy efficient laboratory systems – Ene 08 Energy efficient equipment	– Tra 01 Transport assessment and travel plan – Tra 02 Sustainable transport measures
Water	Materials
– Wat 01 Water consumption – Wat 02 Water monitoring – Wat 03 Water leak detection – Wat 04 Water efficient equipment	– Mat 01 Environmental impacts from construction products - Building life cycle assessment (LCA) – Mat 02 Environmental impacts from construction products - Environmental Product Declarations (EPD) – Mat 03 Responsible sourcing of construction products – Mat 05 Designing for durability and resilience – Mat 06 Material efficiency
Waste	Land Use and Ecology
– Wst 01 Construction waste management – Wst 02 Use of recycled and sustainably sourced aggregates – Wst 03 Operational waste – Wst 04 Speculative finishes (Offices only) – Wst 05 Adaptation to climate change – Wst 06 Design for disassembly and adaptability	– LE 01 Site selection – LE 02 Ecological risks and opportunities – LE 03 Managing impacts on ecology – LE 04 Ecological change and enhancement – LE 05 Long term ecological management and maintenance
Pollution	Innovation
– Pol 01 Impact of refrigerants – Pol 02 Local air quality – Pol 03 Flood and surface water management – Pol 04 Reduction of night time light pollution – Pol 05 Reduction of noise pollution	– Inn 01 Innovation

2.1 BREEAM Rating

BREEAM rating benchmarks for projects assessed using BREEAM UK Refurbishment & Fit Out 2014 Version 6 are:

BREEAM rating benchmarks

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

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

In this respect each BREEAM rating broadly represents performance equivalent to:

1. **Outstanding:** Less than the top 1% of UK new non-domestic buildings (innovator)
2. **Excellent:** Top 10% of UK new non-domestic buildings (best practice)
3. **Very Good:** Top 25% of UK new non-domestic buildings (advanced good practice)
4. **Good:** Top 50% of UK new non-domestic buildings (intermediate good practice)
5. **Pass:** Top 75% of UK new non-domestic buildings (standard good practice)

An unclassified BREEAM rating represents performance that is non-compliant with BREEAM, in terms of failing to meet either the BREEAM minimum standards of performance for key environmental issues or the overall threshold score required to achieve at least a Pass rating.

2.2 BREEAM Category Weighting

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

BREEAM Environmental section weightings

Environmental section	Weighting			
	Fully fitted out	Simple building	Shell and core only	Shell only
Management	11%	7.5%	11%	12%
Health and Wellbeing	14%	16.5%	8%	7%
Energy	16%	11.5%	14%	9.5%
Transport	10%	11.5%	11.5%	14.5%
Water	7%	7.5%	7%	2%
Materials	15%	17.5%	17.5%	22%
Waste	6%	7%	7%	8%
Land Use and Ecology	13%	15%	15%	19%
Pollution	8%	6%	9%	6%
Total	100%	100%	100%	100%
Innovation (additional)	10%	10%	10%	10%

2.3 BREEAM Minimum Standards

BREEAM sets minimum standards of performance in key areas, e.g. energy, water, waste etc. The majority of BREEAM credits can, however, be traded, so non-compliance in one area can be offset through compliance in another to achieve the target BREEAM rating.

BREEAM standards by rating level

	Minimum standards by BREEAM rating level				
BREEAM issue	Pass	Good	Very Good	Excellent	Outstanding
Man 03 Responsible construction practices	None	None	None	One credit (responsible construction management)	Two credits (responsible construction management)
Man 04 Commissioning and handover	None	None	One credit (commissioning-test schedule and responsibilities)	One credit (commissioning-test schedule and responsibilities)	One credit (commissioning-test schedule and responsibilities)
Man 04 Commissioning and handover	None	None	Criterion 11 (Building User Guide)	Criterion 11 (Building User Guide)	Criterion 11 (Building User Guide)
Man 05 Aftercare	None	None	None	One credit (commissioning-implementation)	One credit (commissioning-implementation)
Ene 01 Reduction of energy use and carbon emissions	None	None	None	Four credits (Energy performance or Prediction of operational energy consumption*)	Six credits (Energy performance) and Four credits (Prediction of operational energy consumption*)
Ene 02 Energy monitoring	None	None	One credit (First sub-metering credit)	One credit (First sub-metering credit)	One credit (First sub-metering credit)
Wat 01 Water consumption	None	One credit	One credit	One credit	Two credits
Wat 02 Water monitoring	None	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only
Mat 03 Responsible sourcing of construction products	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only
Wst 01 Construction waste management	None	None	None	None	One credit
Wst 03	None	None	None	One credit	One credit
Operational waste					

*For the 'Prediction of operational energy consumption', it must be demonstrated that the operational energy performance has been substantially improved.

3. BREEAM Assessment Timeline

To assist with optimising project sustainability performance, the assessment timeline outlines the stage at which credits should be addressed. Ideally these should be considered by the design team, planner, contractors, owners, occupiers and other members of the project team to achieve the highest possible BREEAM rating at the minimum cost.

If BREEAM advice is taken on too late within the design and construction phases a number of BREEAM credits may not be achieved or only at additional cost or disruption.

Management

Health and Wellbeing

Energy

Transport

Water

Materials

Waste

Land Use and Ecology

Pollution

4. Our Approach

4.1 Management

4.1.1 Man01: Project Brief and Design

During RIBA Stage 2 (Concept Design) , the project delivery consultation meeting took place to identify and define each project team member's roles and responsibilities at each key stage.

There were already two pre-app meetings with the local authority and an extensive period of public consultation with the community.

The pre-app meetings and consultation feedback were used to inform the early-stage design in the lead up to this planning submission.

A BREEAM Advisory Professional (AP) would be potentially appointed at Concept and Developed Design stages.

4.1.2 Man02: Life cycle cost and service life planning

A component level life cycle cost options appraisal would be potentially completed at RIBA Stage 4. This assessment would include the following elements: external spaces, services facade and internal finishes.
The project cost consultant would provide the total capital cost for the building and will be reported using the BREEAM Assessment Scoring and Reporting Tool in pounds per square metre (£/m2).

4.1.3 Man03: Responsible Construction Practices

The project team would ensure that all timber specified and used in the project will be legally sourced. Environmental Management System (EMS) will be required from the Principal Contractor to operate and to implement best practice pollution prevention policies and procedures.

A BREEAM Advisory Professional (BREEAM AP) will be appointed by the Principal Contractor to work closely with the project team and to ensure that compliance against the BREEAM criteria throughout construction are achieved.

The Principle Contractor will also be required to implement responsible construction management actions, covering the following elements:

1. Health and wellbeing
2. Security processes
3. Risk evaluation and implementation
4. Pollution management
5. Vehicle movement
6. Tidiness
7. Training, awareness and feedback
8. Monitoring and reporting

All energy use and water consumption from on-site construction processes will be monitored and recorded by the Principal Contractor.

The distance travelled by materials and waste from and to the site will be monitored and recorded.

4.1.4 Man04: Commissioning and Handover

A schedule of commissioning and testing that includes a timescale for commissioning and recommissioning of all complex and non-complex building services and control systems and testing and inspecting building fabric would be provided by the Principal Contractor.

The Principle Contractor will be required to appoint a specialist commissioning manager, with responsibility for:

1. Undertaking design reviews and giving advice on suitability for ease of commissioning;
2. Providing commissioning management input to construction programming and during installation stages; and
3. Management of commissioning, performance testing and handover or post-handover stages.

The Principle Contractor will be required to carry out training (in accordance with a documented training schedule) for technical and non-technical building users at an appropriate time around handover and proposed occupation.

In addition and prior to the handover the Principal Contractor will provide:

1. A non-technical user guide for distribution to the building occupiers
2. A technical user guide for the premises facilities managers.

4.1.5 Man05: After Care

The project team would ensure the building operates in accordance with the design intent and operational demands, through providing aftercare to the building owner and occupants during the first year of occupation.

A Post-Occupancy Evaluation (POE) would potentially be commissioned by the landlord and carried out by a specialist to gain an informed understanding of how the building is working for both guests and staff members.

The client and project team is committed to providing an after-care support service to the building's guests through having in place operational infrastructure and resources.

The client and the project team is committed to carry out the following commissioning activities over a minimum 12-month period, once the building becomes substantially occupied:

- Identify changes made by the owner or operator
- Test all building services under full load conditions
- carry out testing during periods of extreme (high or low) occupancy
- Interview building occupants
- Produce monthly reports comparing sub-metered energy performance
- Identify inefficiencies and areas in need of improvement
- Re-commission systems
- For natural ventilated building, review thermal comfort, ventilation, and lighting, at three, six and nine month intervals after initial occupation
- Identify deficiencies and areas in need of improvement
- Re-commission systems and incorporate any relevant revisions in operating procedures

4.2 Health and Wellbeing

4.2.1 Hea01: Visual Comfort

The proposed design will ensure applying best practice in visual performance and comfort by ensuring daylighting, artificial lighting and occupant controls are considered.

The relevant areas will either meet good practice daylight factors or meet good practice average and minimum point daylight illuminance criteria and will have an adequate view out.

All internal lighting in all relevant areas of the building will be designed to provide illuminance (lux) levels and colouring rendering index in accordance with the SLL Code for Lighting 2012(32) and any other relevant industry standard. Internal lighting will be zoned to allow for occupant control.

All external lighting located within the construction zone will be specified in accordance with BS 5489-1:2013 Code for the practice for the design of road lighting.

4.2.2 Hea02: Indoor Air Quality

The client and the project team will appoint a specialist to carry out a site-specific compliant Indoor air quality (IAQ) plan. The plan will consider the following:

1. Removal of contaminant sources
2. Dilution and control of contaminant sources, including Air quality requirements of specialist areas such as laboratories, where present
3. Procedures for pre-occupancy flush out and purge ventilation
4. Third party testing and analysis
5. Maintaining good indoor air quality in-use
6. Any relevant local authority plans or policies

The fresh air provision to the building would ensure that at least 10l/s/p of fresh air is delivered at all times. A Mechanical Ventilation with Heat Recovery (MVHR) system is proposed.

All HVAC systems would incorporate suitable filtration to minimise external air pollution, as defined in BS EN 16798-3:2017.

Occupied spaces have carbon dioxide (CO_2) or air quality sensors specified in accordance with Building Regulations ADF2 and they will be linked to the proposed ventilation system.

Volatile Organic Compounds (VOC) emissions from the relevant construction products will meet the emission limits, testing requirements and any additional requirements listed in BREEAM Table 5.1. These materials would include the following:

1. Interior paints and coatings
2. Wood-based products (including wood flooring)
3. Flooring materials (including floor levelling compounds and resin flooring)
4. Ceiling, wall, and acoustic and thermal insulation materials
5. Interior adhesives and sealants (including flooring adhesives)

The client and the project team will appoint a specialist to carry out post-construction indoor air quality measurement in line with the BREEAM requirements.

4.2.4 Hea04: Thermal Comfort

The project team is committed to carry out Thermal Modelling using software in accordance with CIBSE AM11(81) Building Energy and Performance Modelling.

While for naturally ventilated buildings winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A Environmental design, Table 1.5. Or other appropriate industry standards (where this sets a higher or more appropriate requirement or level for the building type).

The building is designed to limit the risk of overheating, in accordance with the adaptive comfort methodology outlined in either of the following standards as appropriate; CIBSE TM52: The limits of thermal comfort: avoiding overheating in European buildings(83) or CIBSE TM59: Design methodology for the assessment of overheating risk in homes(84).

A projected climate change environment would be considered and modelled. Where appropriate, the project team will demonstrate how the building has been adapted, or designed to be easily adapted in future using passive design solutions in order to subsequently meet the requirements.

4.2.5 Hea05: Acoustic Performance

The project team will ensure the building is capable of providing an appropriate acoustic environment to provide comfort for building users.

The proposed design will meet the acoustic performance standards and internal ambient noise levels in compliance with the design ranges given in BS 8233:2014. A programme of pre-completion testing will be carried out by a compliant test body.

4.2.6 Hea06: Security

The proposal will encourage the planning and implementation of effective measures that provide an appropriate level of security to the building and site.

4.2.7 Hea07: Safe and Healthy Surroundings

The proposal will encourage the provision of safe access around the site and outdoor space that enhances the wellbeing of building users.

The proposal will ensure that there is safe access for pedestrians and cyclists. Outdoor amenity space will be provided to enhance the wellbeing of building users.

4.3 Energy

4.3.1 Ene01: Reduction of Energy Use and CO2 Emissions

The proposal is aiming to minimise operational energy demand, primary energy consumption and CO_2 emissions.

An SBEM calculation was carried out and a BRUKL document has been provided. The BRUKL document has been uploaded to the BREEAM pre Assessment to determine energy demand, primary energy consumption and CO2 emissions for the notional and actual buildings. A minimum of four credits is targeted to achieve a rating of 'Excellent'.

4.3.2 Ene02: Energy Monitoring

The proposal is to install an energy sub-metering to facilitate the monitoring of operational energy consumption. To enable managers and consultants post-handover to compare actual performance with targets in order to inform ongoing management and help in reducing the performance gap.

Energy sub-meters of end-use categories with pulsed or other open protocol communication outputs will be installed that enable at least 90% of the estimated annual energy consumption of each fuel to be assigned to the various end-use categories of energy consuming systems.

Sub-meters will be installed on the energy supply to each tenancy area within the building.

4.3.3 Ene03: External Lighting

The proposal will reduce energy consumption through the specification of energy efficient light fittings for external areas of the development.

All external luminaries will be energy efficient and all light fittings are to be daylight linked to ensure that external artificial lights are not used when daylight levels are sufficient. Presence detection will be specified in areas of pedestrian traffic.

The average initial luminous efficacy of the external light fittings within the construction zone will not be less than 70 luminaire lumens per circuit Watt.

4.3.4 Ene04: Low Carbon Design

The proposal will encourage the adoption of design measures, which reduce building energy consumption and associated carbon emissions and minimise reliance on active building services systems.

The project team will emphasise the energy demand reduction as a first step to reduce the overall CO2 emissions. This would be achieved via incorporating suitable passive and active design measures such as improving the facade thermal performances, efficient light fittings and suitable controls.

A detailed Energy Statement report has been produced to detail our approach to achieve a low carbon development.

4.4 Transport

4.4.1 Tra01: Transport Assessment and Travel Plan

A site-specific transport assessment and travel plan has been produced and will inform the site layout and built form.

A site specific travel plan that provides a long term management strategy which encourages more sustainable travel will be developed.This plan would encourage more sustainable travel, and will be made available to future guests.

These assessments have been carried out during RIBA Stage 2 and will be submitted as part of the full planning application.

4.4.2 Tra02: Transport Assessment and Travel Plan

The proposed development will be accessible by public transport, being served by London buses and underground rail services. The project's accessibility index (AI): 41.84.

Cycle storage and facilitates will be provided.

4.5 Water

4.5.1 Wat01: Water Consumption

The proposal is aiming to reduce the consumption of potable water for sanitary use in the building through the use of water efficient components and water recycling systems.

BREEAM Wat 01 calculator will be used to inform the improvements achieved based on the proposed design. The aim is to achieve at least 3 credits i.e an improvement of 40%.

Greywater or rainwater systems will be considered and included where appropriate.

4.5.2 Wat02: Water Monitoring

The proposal is aiming to reduce the consumption of potable water in new buildings through the effective management and monitoring of water consumption.

A pulsed water metre or any other open protocol output will be provided on the mains water supply to monitor the building's water usage.

Where applicable, systems with a significant water demand will have additional water monitoring equipment fitted. All water metres will be connected to the BMS.

4.5.3 Wat03: Water Leak Detection

The proposal is aiming to reduce the consumption of potable water in new buildings through minimising wastage due to water leaks.

A leak detection system will be installed on the main water supply to the building to monitor for major leaks between the building and the utilities water supply. In addition, flow control devices will be installed to each WC zone.

4.6 Materials

4.6.1 Mat01: Building Life Cycle Assessment (LCA)

The proposal is aiming to reduce the burden on the environment from construction products by recognising and encouraging measures to optimise construction product consumption efficiency and the selection of products with a low environmental impact (including embodied carbon), over the life cycle of the building.

BREEAM life cycle assessment calculations will be considered to identify opportunities for reducing the environmental impacts associated with major building materials.

4.6.2 Mat02: Environmental Product Declarations (EPD)

The project team is only specifying products and materials with EPD certification.

4.6.3 Mat03: Responsible sourcing of construction products

The proposal is aiming to specify products that involve lower levels of negative environmental, economic and social impact across their supply chain including extraction, processing and manufacture.

100% of timber and timber-based products specified in the project will be FSC or PEFC certified and/or are 'Legal' and 'Sustainable' as per the UK Government's Timber Procurement Policy (TPP). All other materials will be, where possible, sourced from suppliers holding a valid responsible sourcing certification (e.g. BES 6001).

A sustainable procurement plan will be used during RIBA Stage 3 by the design team to guide specification towards sustainable construction products.

BREEAM Mat 03 calculator will be used to determine the number of credits achieved.

4.6.4 Mat05: Designing for Durability and Resilience

The proposal is aiming to reduce the need to repair and replace materials resulting from damage to exposed elements of the building and landscape.

Suitable durability and protection measures or designed features will be incorporated into the building to protect and prevent damage to vulnerable parts.

4.6.5 Mat06: Material Efficiency

The proposal is aiming to avoid unnecessary materials use arising from over specification without compromising structural stability, durability or the service life of the building.

The project team will aim to discuss, at each RIBA design stage, the opportunities to implement appropriate measures to ensure that the amount of materials used in the construction of the development is optimised and to reduce the amount of construction waste arising from the site.

4.7 Waste

4.7.1 Wst01: Construction Waste Management

The proposal is aiming to reduce construction waste by encouraging reuse, recovery and best practice waste management practices to minimise waste going to landfill.

The principle Contractor will be required to operate a Resource Management Plan (RMP) or Site Waste Management Plan (SWMP) covering non-hazardous construction waste and dedicated off-site manufacture, to ensure that the amount of waste generated is lower than or equal to 3.2 and 6.5 tonnes per 100m2 of gross internal floor area, and that at least 85% of non-demolition waste and 95% of demolition waste is diverted from landfill.

Where applicable, pre-demolition audit will be carried out for any existing buildings, structures or hard surfaces, to identify key refurbishment/demolition materials and highlight the potential issues in the reuse and recycling of these materials.

4.7.2 Wst02: Use of Recycled and Sustainably Sourced Aggregates

The proposal is aiming to encourage the use of more sustainably sourced aggregates, encourage reuse where appropriate and avoid waste and pollution arising from disposal of demolition and other forms of waste.

Any demolition occurs on site, the aim is to reuse site-won material on site and to complete a pre demolition audit of any existing buildings, structures or hard surfaces.

The Principal Contractor will:

- Identify all aggregate uses and types on the project
- Determine the quantity in tonnes for each identified use and aggregate type
- Identify the region in which the aggregate source is located
- Calculate the distance in kilometres travelled by all aggregates by transport type
- Use the BREEAM Wst 2 calculator to calculate the project sustainable aggregate points

4.7.3 Wst03: Operational Waste

The proposal is aimed at the recycling of operational waste through the provision of dedicated storage facilities and space.

Suitably sized, dedicated space to cater for the segregation and storage of operational recyclable waste volumes generated by the assessed building activities will be provided.

4.7.4 Wst04: Speculative Finishes

Given that all rooms will be fitted out to the same set of standards by the client, the proposal will minimise wastage in floor, ceiling and wall finishes.

4.7.5 Wst05: Adaptation to Climate Change

The proposal is aiming to minimise the future need of carrying out works to adapt the building to take account of more extreme weather changes resulting from climate change and changing weather patterns.

A climate change adaptation strategy will be provided to assess the potential climate related risks to the building's structure, fabric, building services and renewables installation.

Any relevant recommendations within the strategy will be implemented, where feasible, to mitigate the risks associated with an increase in extreme weather events resulting from climate change and changing weather patterns.

4.7.6 Wst06: Design for Disassembly and Adaptability

The proposal is aiming to avoid unnecessary materials use, cost and disruption arising from the need for future adaptation works as a result of changing functional demands and to maximise the ability to reclaim and reuse materials at final demolition in line with the principles of a circular economy.

The project team has developed a workable strategy to ensure the building design is flexible and can be modified to accommodate reasonable future changes in working practices, change-in-use, plant replacement and refurbishment.

4.8 Land Use and Ecology

4.8.1 Le01: Site Selection

The proposal has been based on 100% the use of previously occupied or contaminated land and avoiding land which has not been previously disturbed.

4.8.2 Le02: Ecological Risks and Opportunities

The project team will confirm compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.

The project team is committed to evaluate the site using the BREEAM Ecological Risk Evaluation Checklist and where required, a Suitably Qualified Ecologist (SQE) will carry out a survey and evaluation for the site early enough to influence site preparation works, layout and, where necessary, strategic planning decisions.

4.8.3 Le03: Managing Impacts on Ecology

The project team is committed to avoid, or limit as far as possible, negative ecological impacts associated with the site and surrounding areas resulting from the project in accordance with the BREEAM hierarchy and that no overall loss of ecological value occurs as a result of the development.

The project team will confirm compliance is monitored against all relevant UK and EU or international legislation relating to the ecology of the site.

Site preparation and construction works will be planned and implemented at an early stage to maximise the benefits. The project team liaises with representative stakeholders during site preparation and construction.

4.8.4 Le04: Ecological Change and Enhancement

The proposal is aiming to enhance ecological value of the area associated with the site in support of local, regional and national priorities.

The project team will ensure that there is no net loss of ecological value as a result of the development, and that a positive change in ecological value on site will aim to achieve at least 1 BREEAM credit.

4.8.5 Le05: Long Term Ecological Management and Maintenance

The proposal is aiming to secure ongoing monitoring, management and maintenance of the site and its habitats and ecological features, to ensure intended outcomes are realised for the long term.

The project team is committed to ensure compliance will be monitored against all relevant UK, EU and international standards relating to the ecology of the site.

The project team will liaise and collaborate with the stakeholders to monitor and review the effectiveness of implemented ecological solutions and to develop and review the management and maintenance measures in place.

A Landscape and Ecology Management Plan, or equivalent, will be developed, if required, in accordance with BS 42020:2013 Section 11.1(211) covering at least the first five years after project completion as a minimum. The landscape and management plan or similar will be updated to support maintenance of the ecological value of the site.

4.9 Pollution

4.9.1 Pol01: Impact of Refrigerants

The project team is committed to reduce the level of greenhouse gas emissions arising from the leakage of refrigerants from building systems.

All systems with electric compressors will comply with the requirements of BS EN 378:2016 (parts 2 and 3). All specified refrigerants have a global warming potential (GWP) ≤10.

A permanent automated refrigerant leak detection system, that is robust and tested, and capable of continuously monitoring for leaks will be installed. This system will also be capable of automatically responding and managing the remaining refrigerant charge to limit loss of refrigerant.

4.9.2 Pol02: Local Air Quality

The proposal is aimed at a reduction in local air pollution through the use of low emission combustion appliances in the building.

All heating, cooling and hot water is supplied by non-combustion systems and only powered by electricity.

4.9.3 Pol03: Flood and Surface Water Management

The proposal is aiming to avoid, reduce and delay the discharge of rainfall to public sewers and watercourses, thereby minimising the risk and impact of localised flooding on-site and off-site, watercourse pollution and other environmental damage.

The Environmental Agency Flood Map shows that the development is located in an area with a medium probability of flooding (Flood Zone 2). A site-specific flood risk assessment will be undertaken.

A SUD's Statement has been produced by Elliott Wood outlining that there will be minimal change to the overall SUD's strategy of the existing development as no measurable improvement can be made due to inadequate space and lack of structural capacity for attenuation.

Relevant maintenance agreements will be in place post-construction for the management and maintenance of all specified SuDS.

4.9.4 Pol04: Reduction of Night Time Light Pollution

The proposal is aiming to ensure that external lighting is concentrated in the appropriate areas and that upward lighting is minimised, thereby reducing unnecessary light pollution, energy consumption and nuisance to neighbouring properties.
The external lighting strategy will be designed in compliance with Table 2 (and its accompanying notes) of the Institution of Lighting Professionals (ILP) Guidance notes for the reduction of obtrusive light, 2011.

All external lighting (except safety and security lighting) will automatically switch off between 23:00 and 07:00.

Safety and security lighting will be used between 23:00 and 07:00 and will comply with the lower levels of lighting recommended during these hours in Table 2 of the ILP guidance notes.

No building illuminated advertisements will be specified.

4.9.5 Pol05: Reduction of Noise Pollution

The proposal aims to minimise the potential disturbance caused by fixed installations in the new development on nearby noise-sensitive buildings.

A thorough noise impact survey was conducted by Venta Acoustics to understand the existing noise levels in the area surrounding the site, supporting the planning application.

Based on this survey, noise emission limits have been established for the most affected noise-sensitive area, ensuring compliance with Camden Council regulations.

Acoustic louvres enclosures are specified as per the recommendations of the acoustician to ensure that noise levels from the assessed building remain at least 5dB lower than the background noise throughout the day and night.

With the implementation of necessary mitigation measures, the cumulative noise emissions from the proposed plant have been evaluated to meet the plant noise emission limits, resulting in a projected low noise impact from the proposed scheme.

Appendices

Appendix 1: Credits Summary

BREEAM UK BREEAM UK Refurbishment & Fit-out 2014

Pre-assessment : Design Stage : BEDFORD ROW - APART HOTEL (23473)
Issue scores

Please Note: X means the exemplary credit for the relevant issue

Management

Man 01 Project Brief and design 1 / 4	Man 02 Life cycle cost and service life planning 1 / 4	Man 03 Responsible construction practices 5 / 6 X: 0 / 1
Man 04 Commissioning and handover 3 / 3	Man 05 Aftercare 2 / 3 X: 0 / 1	

Health and Wellbeing

Hea 01 Visual comfort 3 / 7 X: 0 / 1	Hea 02 Indoor air quality 4 / 5 X: 0 / 2	Hea 03 Safe containment in laboratories N/A
Hea 04 Thermal comfort 3 / 3	Hea 05 Acoustic performance 3 / 4	Hea 06 Safety and security 1 / 1

Energy

Ene 01 Reduction of energy use and carbon emissions 8 / 10 X: 0 / 5	Ene 02 Energy monitoring 1 / 1	Ene 03 External lighting 1 / 1
Ene 04 Low carbon	Ene 05 Energy efficient	Ene 06 Energy efficient

office

Transport

Tra 01 Sustainable transport solutions
N/A

Tra 02 Proximity to Amenities
1 / 1

Tra 03 Cyclist facilities
N/A

Tra 04 Maximum car parking capacity
N/A

Tra 05 Travel plan
1 / 1

Water

Wat 01 Water consumption
N/A

Wat 02 Water monitoring
N/A

Wat 03 Water leak detection and prevention
2 / 2

Wat 04 Water efficient equipment
N/A

Materials

Mat 01 Life cycle impacts
2 / 6 X: 0 / 1

Mat 03 Responsible sourcing
2 / 4 X: 0 / 1

Mat 04 Insulation
1 / 1

Mat 05 Designing for durability and resilience
1 / 1

Mat 06 Material efficiency
1 / 1

Waste

Wst 01 Construction waste management
6 / 7 X: 0 / 1

Wst 02 Recycled aggregates
N/A

Wst 03 Operational waste
1 / 1

Wst 04 Speculative finishes
N/A

Wst 05 Adaptation to climate change
N/A

Wst 06 Functional adaptability
1 / 1

Land use and ecology

Le 02 Protection of ecological features
N/A

Le 04 Enhancing site ecology
N/A

Le 05 Long term impact on biodiversity
2 / 2

Pollution

Pol 01 Impact of refrigerants
2 / 3

Pol 02 Nox Emissions
3 / 3

Pol 03 Flood risk management and reducing surface water run-off
2 / 2

Pol 04 Reduction of Night Time Light Pollution
1 / 1

Pol 05 Noise attenuation
1 / 1

Innovation

Inn 01 Innovation
0 / 0 X: 0 / 10

Appendix 2: BREEAM Rating

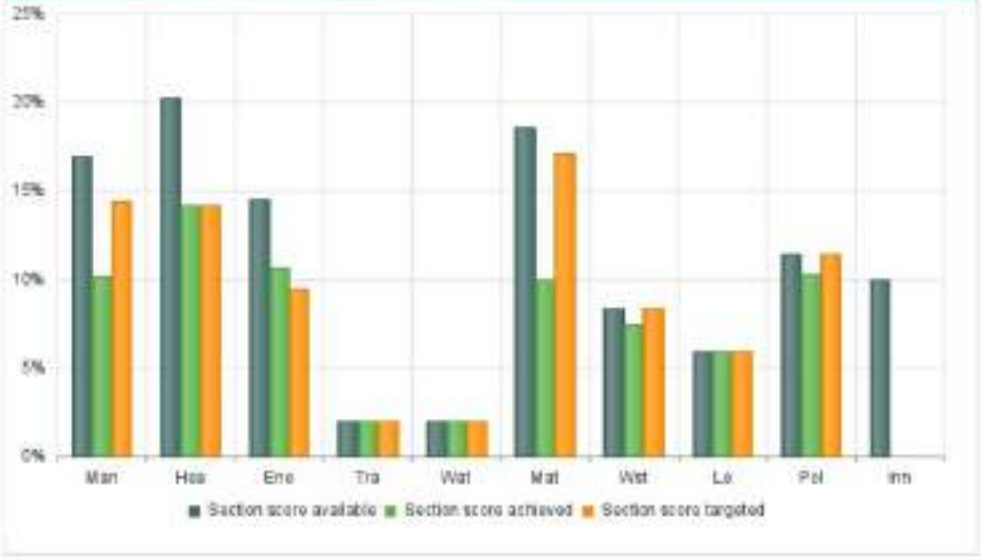
BREEAM UK | BREEAM UK Refurbishment & Fit-out 2014

Pre-assessment : Design Stage : BEDFORD ROW - APART HOTEL (23473)

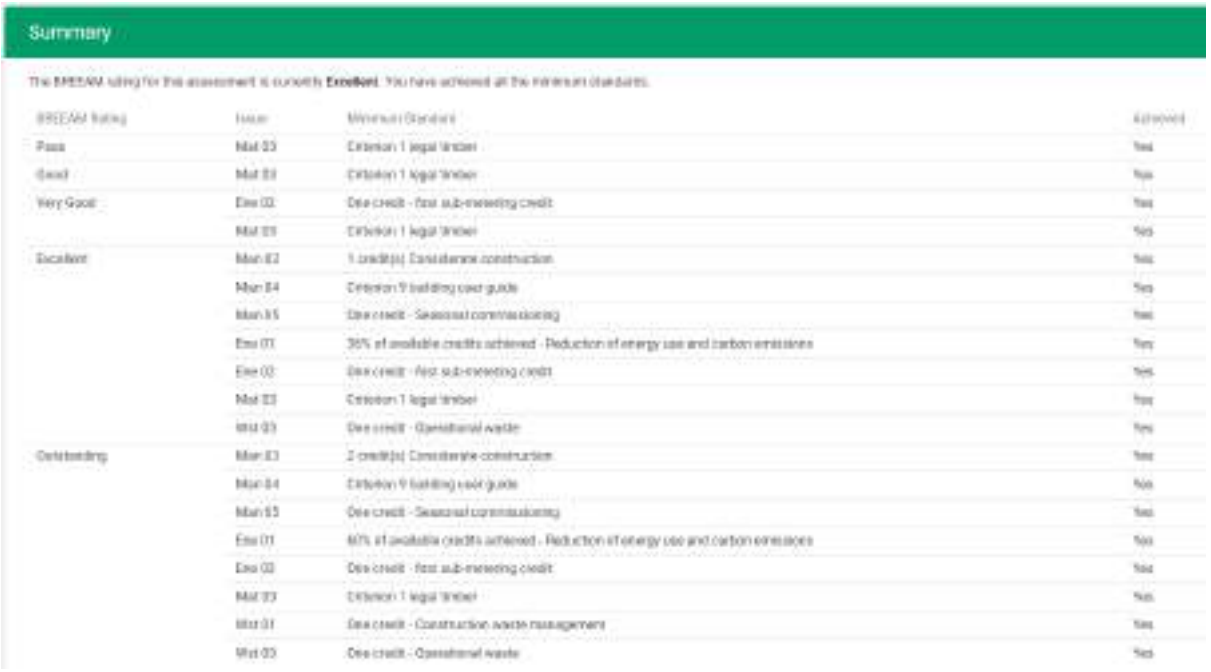
BREEAM Rating

	Credits available	Credits achieved	Credits targeted	% Credits achieved	Weighting	Category score	Target score
Man	20.0	12.0	17.0	60.00%	16.97%	10.18%	14.42%
Hea	20.0	14.0	14.0	70.00%	20.25%	14.17%	14.17%
Ene	17.0	12.5	11.0	73.53%	14.54%	10.68%	9.40%
Tra	2.0	2.0	2.0	100.00%	1.98%	1.98%	1.98%
Wat	2.0	2.0	2.0	100.00%	1.98%	1.98%	1.98%
Mat	13.0	7.0	12.0	53.85%	18.56%	9.99%	17.13%
Wst	9.0	8.0	9.0	88.89%	8.35%	7.42%	8.35%
Le	2.0	2.0	2.0	100.00%	5.94%	5.94%	5.94%
Pol	10.0	9.0	10.0	90.00%	11.42%	10.28%	11.42%
Inn	10.0	0.0	0.0	0.00%	10.00%	0.00%	0.00%
Total	105.0	68.5	79.0	65.24%	-	72.64%	84.82%
Rating	-	-	-	-	-	★★★★☆ **Excellent**	Excellent

Performance by environmental category



Appendix 3: Minimum Standards



Summary

The BREEAM rating for this assessment is currently **Excellent**. You have achieved all the minimum standards.

BREEAM Rating	Issue	Minimum Standard	Achieved
Pass	Mat 03	Criterion 1 legal timber	Yes
Good	Mat 03	Criterion 1 legal timber	Yes
Very Good	Ene 02	One credit - first sub-metering credit	Yes
	Mat 03	Criterion 1 legal timber	Yes
Excellent	Man 02	1 credit(s) Considerate construction	Yes
	Man 04	Criterion 9 building user guide	Yes
	Man 05	One credit - Seasonal commissioning	Yes
	Ene 01	36% of available credits achieved - Reduction of energy use and carbon emissions	Yes
	Ene 02	One credit - first sub-metering credit	Yes
	Mat 03	Criterion 1 legal timber	Yes
	Wst 03	One credit - Operational waste	Yes
Outstanding	Man 02	2 credit(s) Considerate construction	Yes
	Man 04	Criterion 9 building user guide	Yes
	Man 05	One credit - Seasonal commissioning	Yes
	Ene 01	60% of available credits achieved - Reduction of energy use and carbon emissions	Yes
	Ene 02	One credit - first sub-metering credit	Yes
	Mat 03	Criterion 1 legal timber	Yes
	Wst 01	One credit - Construction waste management	Yes
	Wst 03	One credit - Operational waste	Yes

Appendix 4: Area Schedule

Room Schedule	
Room Name	Area
B1	
Room B1.01	20 m²
Room B1.02	17 m²
Room B1.03	28 m²
Room B1.04 (DDA)	38 m²
Room B1.05	18 m²
Room B1.06	18 m²
Room B1.07	18 m²
Room B1.08	25 m²
	184 m²
L00	
Room 00.01 (DDA)	40 m²
Room 00.02 (DDA)	42 m²
Room 00.03	18 m²
Room 00.03	18 m²
Room 00.04	18 m²
Room 00.05	18 m²
	155 m²
L01	
Room 01.01	19 m²
Room 01.02	17 m²
Room 01.03	17 m²
Room 01.04	18 m²
Room 01.05	23 m²
Room 01.06	13 m²
Room 01.07	16 m²
Room 01.08	22 m²
Room 01.09	22 m²
Room 01.10	16 m²
Room 01.11	16 m²
Room 01.12	16 m²
Room 01.13	16 m²
Room 01.14	16 m²
Room 01.15	17 m²
Room 01.16	17 m²
	281 m²

Room Schedule	
Room Name	Area
L02	
Room 02.01	17 m²
Room 02.02	18 m²
Room 02.03	18 m²
Room 02.04	23 m²
Room 02.05	18 m²
Room 02.06	16 m²
Room 02.07	16 m²
Room 02.08	22 m²
Room 02.09	22 m²
Room 02.10	16 m²
Room 02.11	16 m²
Room 02.12	16 m²
Room 02.13	16 m²
Room 02.14	16 m²
Room 02.15	17 m²
Room 02.16	17 m²
	284 m²
L03	
Room 03.01	19 m²
Room 03.02	17 m²
Room 03.03	17 m²
Room 03.04	23 m²
Room 03.05	18 m²
Room 03.06	17 m²
Room 03.07	24 m²
Room 03.08	21 m²
Room 03.09	20 m²
Room 03.10	20 m²
Room 03.11	16 m²
Room 03.12	17 m²
Room 03.13	17 m²
	246 m²
L04	
Room 04.01	15 m²
Room 04.02	18 m²
	33 m²
Grand total: 61	1184 m²

Area Schedule	
Room Name	Area
B1	
Ancillary	2 m²
Communal Amenity	53 m²
Corridor	47 m²
Plant	32 m²
Stair A	12 m²
Stair B	17 m²
	163 m²
L00	
Ancillary	72 m²
Corridor	80 m²
Reception	24 m²
Stair A	13 m²
Stair B	18 m²
Stair C	18 m²
	224 m²
L01	
Area	3 m²
Corridor	50 m²
External Amenity	33 m²
Plant	26 m²
Stair A	13 m²
Stair B	13 m²
Stair C	17 m²
	164 m²
L02	
Corridor	49 m²
Stair A	13 m²
Stair B	13 m²
Stair C	17 m²
	91 m²
L03	
Corridor	45 m²
Stair A	12 m²
Stair B	12 m²
Stair C	11 m²
	81 m²
L04	
Communal Ammenity	38 m²
Corridor	18 m²
Stair A	10 m²
	67 m²
Grand total: 41	781 m²

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energylab_
Empowering Sustainable Society

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energylab_
Building Services and Sustainability Designers

energylab_ is a dynamic consultancy specialising in sustainability and sustainable design. We have extensive experience in both design and management across a broad range of sectors where we aim to embrace circular economy principles and low energy design practices.

Our vision is to deliver efficient and flexible environments which are engineered to help people work in an sustainable, effective and collaborative way.

We have a proactive approach to spatial design and how building services integrate within the space. We offer our clients a high quality service by working closely with them and their team to achieve a successful end product which meets the ESG agenda.

energylab_ wants to change that way of working by providing a more strategic and integrated approach to workplace design.

We do things differently……..

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the lab foundation_
sense_

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This company meets the highest standards of social and environmental impact

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