



BREEAM Pre Assessment for planning

Issue 3 - Issued for Planning

10/02/2023

**New Build Office Block at the Former Car Wash,
Broad Lane, Haringey**

Prepared for:

Broad Lane Properties Limited

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Issue	Date	Issue Details	Changes	Prepared by	Reviewed by	Approved by
0	23/11/22	Issued for comments	-	MA/KA	MA	
1	13/12/22	Issued for comments	-	MA/KA	MA	MA
2	19/12/22	Issued for planning	Minor changes following client review	MA/KA	MA	MA
3	10/02/23	Issued for planning	Minor changes following client review	MA/KA	MA	MA

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Executive Summary

Haringey Strategic Policies 2013 - 2026, Policy SP4: Working Towards A low carbon Haringey requires all new non-residential development to achieve at least BREEAM Very Good with the aim to achieve BREEAM Excellent standard. The following Pre-Assessment demonstrates compliance with the Local Authority's policies in relation to BREEAM assessments target requirement.

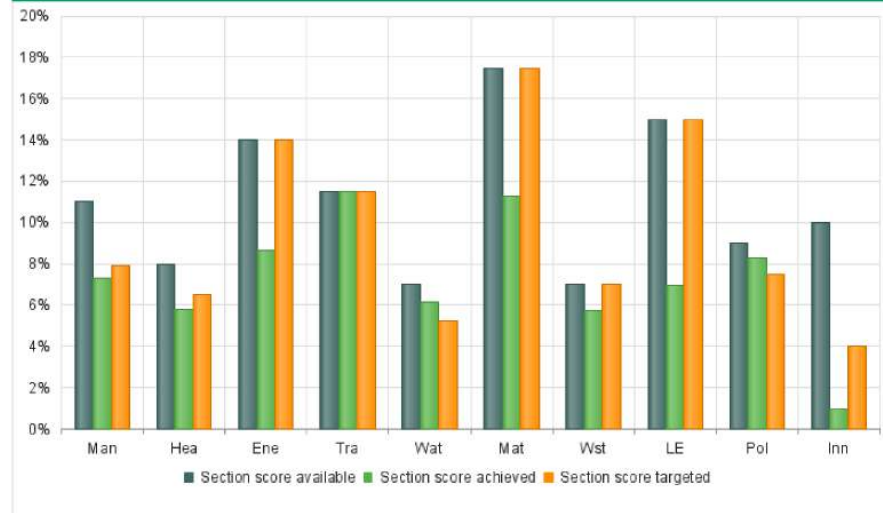
The BREEAM Pre- Assessment demonstrate the potential to achieve **BREEAM Excellent standard** with total score of **72.59%** as shown below:

BREEAM[®] UK BREEAM UK New Construction Version 6 bre

Pre-assessment : Design (Interim) : Broad Lane, Tottenham Hale, Haringey (22416)

BREEAM Rating					
	Credits available	Credits achieved	% Credits achieved	Weighting	Category score
Man	18.0	12.0	66.67%	11.00%	7.33%
Hea	11.0	8.0	72.73%	8.00%	5.81%
Ene	21.0	13.0	61.90%	14.00%	8.66%
Tra	12.0	12.0	100.00%	11.50%	11.50%
Wat	8.0	7.0	87.50%	7.00%	6.12%
Mat	14.0	9.0	64.29%	17.50%	11.25%
Wst	11.0	9.0	81.82%	7.00%	5.72%
LE	13.0	6.0	46.15%	15.00%	6.92%
Pol	12.0	11.0	91.67%	9.00%	8.25%
Inn	10.0	1.0	10.00%	10.00%	1.00%
Total	130.0	88.0	67.69%	-	72.59%
Rating	-	-	-	-	★★★★★ Excellent

Performance by environmental category



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 all target of BREEAM Excellent would be maintained.



1. Introduction

1.1 Existing Site

The site is located on Broad Lane, adjacent to Fountayne Business Centre within the London Borough of Haringey. The existing site used to formally be a car wash centre, however, the site is currently vacant and not developed. Please see the image below (Source: Google Maps).



1.2 The Proposal

The proposal is for a 9 storey, new-build office. The office building shall be developed as shell & core, however, the services shall be extended to serve the speculative office floors alongside the landlord core areas. The services

shall be mainly space heating, cooling, ventilation, public health/water to core areas and vertical transportation.

In addition to the office space, the development will comprise 6 no. sedum green roofs, 1 no. terrace and 2 no. cycle stores to encourage green means of transportation. There will be external amenity spaces included within the building.

The area schedule for the proposed development is displayed below:

Area Schedule	
Floor	Approximate Gross Internal Area (sqm)
Ground Floor	1130
1st Floor	877
2nd Floor	877
3rd Floor	873
4th Floor	763
5th Floor	478
6th Floor	232
7th Floor	232
8th Floor	232



2. Methodology

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

BREEAM UK New Construction version 6 2022 has been used in this pre-assessment.

Project scope would be a shell and core.



Fully fitted



Simple building



Shell & core



Shell only

The primary aim of BREEAM UK New Construction 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 – 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	Health and Wellbeing – 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 – 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	Transport – Tra 01 Transport assessment and travel plan – Tra 02 Sustainable transport measures
Water – Wat 01 Water consumption – Wat 02 Water monitoring – Wat 03 Water leak detection – Wat 04 Water efficient equipment	Materials – 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 – 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	Land Use and Ecology – 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 – 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	Innovation – Inn 01 Innovation



2.1 BREEAM Rating

BREEAM rating benchmarks for projects assessed using BREEAM UK New Construction 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



		Sub credits	Plan of Work						
			Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	Handover and Close Out
Section									
Man 01	Project brief and design	Project delivery planning Stakeholder consultation							
		BREEAM Advisory Professional			Maximise project performance	Maximise project performance			
Man 02	Life cycle cost and service life planning	Life cycle cost			Elemental LCC		Component level LCC options		
		Capital cost reporting							
		Environmental management							
Man 03	Responsible construction practices	BREEAM Advisory Professional							
		Responsible construction management							
		Monitoring of construction site impacts							
		Commissioning testing schedule and responsibilities							
Man 04	Commissioning and handover	Handover						Building user guides and training schedules prepared	Building user guides and training schedules prepared
Man 05	Aftercare								



Health and Wellbeing



		Sub credits	Plan of Work						
			Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	Handover and Close Out
Section									
Hea 01	Visual comfort								
Hea 02	Indoor air quality								
Hea 04	Thermal comfort								
Hea 05	Acoustic performance				Acoustician appointment				
Hea 06	Security				Security consultation appointment				
Hea 07	Safe and healthy surroundings								



Energy



		Sub credits	Plan of Work						
			Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	Handover and Close Out
Section									
Ene 01	Reduction of energy use and carbon								
Ene 02	Energy monitoring								
Ene 03	External lighting								
Ene 04	Low carbon design	Passive design			Passive design analysis				
		Low and zero carbon technologies feasibility			Feasibility study				
Ene 05	Energy efficient cold storage	Refrigeration energy consumption							
Ene 06	Energy efficient transportation systems								
Ene 07	Energy efficient laboratory systems	Design specification		Client engagement					
Ene 08	Energy efficient equipment								



Transport



Fully fitted



Simple building



Shell & core



Shell only

		Sub credits	Plan of Work						
			Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	Handover and Close Out
Section									
Tra 01	Transport assessment and travel plan				Travel plan				
Tra 02	Sustainable transport measures			Consultation with local authority (option B only)					

	Design or management influence
	Design or client decision
	Design or management changes at a high cost
	No further changes can be made
	RIBA stage stipulated within BREEAM criteria

Water



Fully fitted



Simple building



Shell & core



Shell only

		Sub credits	Plan of Work						Handover and Close Out
			Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	
Section									
Wat 01	Water consumption								
Wat 02	Water monitoring								
Wat 03	Water leak detection								
Wat 04	Water efficient equipment								

	Design or management influence
	Design or client decision
	Design or management changes at a high cost
	No further changes can be made
	RIBA stage stipulated within BREEAM criteria

Materials



Fully fitted



Simple building



Shell & core



Shell only

		Sub credits	Plan of Work						Handover and Close Out
Section			Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	
Mat 01	Environmental impacts from construction products - Building life cycle assessment				Building LCA submission		Building LCA submission		
Mat 02	Environmental impacts from construction products							Installation of certified products	
Mat 03	Responsible sourcing of materials	sustainable procurement plan		Sustainable procurement plan	Review sustainable procurement plan	Review sustainable procurement plan			
Mat 05	Designing for durability and resilience								
Mat 06	Material efficiency			Stage actions	Stage actions	Stage actions	Stage actions	Stage actions	

	Design or management influence
	Design or client decision
	Design or management changes at a high cost
	No further changes can be made
	RIBA stage stipulated within BREEAM criteria

Waste



Fully fitted



Simple building



Shell & core



Shell only

		Sub credits	Plan of Work						
Section			Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	Handover and Close Out
Wst 01	Construction waste management				Pre-demolition audit				
Wst 02	Use of recycled and sustainably sourced aggregates								
Wst 03	Operational waste								
Wst 04	Speculative finishes								
Wst 05	Adaptation to climate change				Climate adaptation strategy appraisal		Update on climate adaptation strategy appraisal		
Wst 06	Design for disassembly and adaptability	Design for disassembly and functional adaptability			Disassembly and functional adaptation study				
		Adaptability: Potential for natural ventilation							

	Design or management influence
	Design or client decision
	Design or management changes at a high cost
	No further changes can be made
	RIBA stage stipulated within BREEAM criteria



Land Use and Ecology



Fully fitted



Simple building



Shell & core



Shell only

Section		Sub credits	Plan of Work						Handover and Close Out
			Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	
LE 01	Site selection	Previously occupied land Contaminated land							
LE 02	Identifying and understanding the risks and opportunities for the site	Survey and evaluation Determining the site wide outcomes							
LE 03	Managing negative impacts on ecology								
LE 04	Enhancing site ecology								
LE 05	Long term ecology management and maintenance								

	Design or management influence
	Design or client decision
	Design or management changes at a high cost
	No further changes can be made
	RIBA stage stipulated within BREEAM criteria

Pollution



Fully fitted



Simple building



Shell & core



Shell only

Section		Sub credits	Plan of Work						Handover and Close Out
			Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	
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								

	Design or management influence
	Design or client decision
	Design or management changes at a high cost
	No further changes can be made
	RIBA stage stipulated within BREEAM criteria



4. Our Approach

4.1 Management

4.1.1 Man01: Project Brief and Design

Before the completion of RIBA Stage 2 (Concept Design), the project delivery consultation meeting will be held to identify and define each project team member's roles and responsibilities at each key stage.

In addition to the local authority planning consultations with the community, the project team will consult relevant third-party stakeholders on various aspects of the design and the proposal before the end of RIBA Stage 2 (Concept Design).

These consultations would influence the design and any feedback received would be incorporated into the design, where appropriate, by the design team before the end of RIBA Stage 4 (Technical Design).

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 BREEAM asset life cycle cost plan would be potentially completed at RIBA Stage 2.

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 a building is working for those that live and work in it.

The client and the project team is committed to provide an aftercare support to the building occupiers 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 (CO₂) 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.

The modelling will demonstrate for air-conditioned building, summer and winter operative temperature ranges in occupied spaces are in accordance with the criteria set out in CIBSE Guide A Environmental design(82) , Table 1.5; or other appropriate industry standard (where this sets a higher or more appropriate requirement or level for the building type); or the thermal environment in occupied spaces meet the Category B requirements for PPD, PMV and local discomfort set out in Table A.1 of Annex A of ISO 7730:2005. The PMV (predicted mean vote) and PPD (predicted percentage of dissatisfied) indices based on the above modelling are reported via the BREEAM assessment scoring and reporting tool.

While for naturally ventilated building 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.

A suitably qualified security specialist (SQSS) will conduct a Security Needs Assessment (SNA) during RIBA Stage 2 (Concept Design), the resulting set of recommendations will be implemented on site where appropriate.

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 CO₂ 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 on 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 net zero carbon development.



4.3.5 Ene06: Energy Efficient Transportation Systems

The proposal will encourage the specification of energy efficient transportation systems within buildings.

The transportation demand and the proposed usage patterns for the building shall be assessed to determine the optimum number and size of lifts. An energy efficient lift system will be specified.

4.4 Transport

4.4.1 Tra01: Transport Assessment and Travel Plan

A site-specific transport assessment and travel plan will be produced and will inform the site layout and built form. This assessment will be carried out during RIBA Stage 2.

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 tenants.

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. Electric recharging stations will be considered, however, the type of the development and being a car free development this may not be suitable. The project's accessibility index (AI): 38.69.

Cycle storage and facilities 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 meter 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 meters 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 2 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 will

be developed, to ensure that the amount of waste generated is between lower than or equal to 3.2 and 6.5 tonnes per 100m² of gross internal floor area. And at least 85% of non-demolition waste and 95% of demolition waste must be diverted from landfill.

Where applicable, A 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

The proposal is aiming to minimise the wastage associated with the installation of floor and ceiling finishes in lettable areas in speculative buildings where tenants have not been involved in their selection.

The aim is to only fit out a show floor/part of the floor to reduce the waste.

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 drainage strategy will be produced aiming to reduce the peak rate of run-off by 30% as a result of the development works, including an allowance for climate change.

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 is aiming to reduce the likelihood of noise arising from fixed installations on the new development affecting nearby noise-sensitive buildings.

An acoustic impact assessment and an assessment of the existing background noise levels will be carried out by a qualified acoustician.

Acoustic louvres enclosure will be specified, in accordance with the acoustician's recommendations, to ensure that the noise level from the assessed building is at least 5dB lower than the background noise throughout the day and night.



Appendices

Appendix 1: Credits Summary

BREEAM® UK

BREEAM UK New Construction Version 6

bre

Pre-assessment : Design (Interim) : Broad Lane, Tottenham Hale, Haringey (22416)
Issue scores

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

Management		
Man 01 Project Brief and design 2 / 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 4 / 4	Man 05 Aftercare N/A	
Health and Wellbeing		
Hea 01 Visual comfort 3 / 4 X: 0 / 1	Hea 02 Indoor air quality 0 / 1	Hea 04 Thermal comfort 2 / 2
Hea 05 Acoustic performance 1 / 1	Hea 06 Security 1 / 1 X: 0 / 1	Hea 07 Safe and Healthy Surroundings 1 / 2
Energy		
Ene 01 Reduction of energy use and carbon emissions 7 / 13 X: 0 / 5	Ene 02 Energy monitoring 2 / 2	Ene 03 External lighting 1 / 1
Ene 04 Low carbon design 1 / 3	Ene 05 Energy efficient cold storage N/A	Ene 06 Energy efficient transportation systems 2 / 2
Ene 07 Energy efficient laboratory systems N/A	Ene 08 Energy efficient equipment N/A	
Transport		
Tra 01 Transport assessment and travel plan 2 / 2	Tra 02 Sustainable transport measures 10 / 10	
Water		

Wat 01 Water consumption

4 / 5 X: 0 / 1

Wat 02 Water monitoring

1 / 1

Wat 03 Water leak detection

2 / 2

Wat 04 Water efficient equipment

N/A

Materials

Mat 01 Life cycle impacts

4 / 7 X: 0 / 3

Mat 02 Environmental impacts from construction products

1 / 1

Mat 03 Responsible sourcing

2 / 4 X: 0 / 1

Mat 05 Designing for durability and resilience

1 / 1

Mat 06 Material efficiency

1 / 1

Waste

Wst 01 Construction waste management

4 / 5 X: 0 / 1

Wst 02 Use of recycled and sustainably sourced aggregates

1 / 1 X: 1 / 1

Wst 03 Operational waste

1 / 1

Wst 04 Speculative finishes (Offices only)

1 / 1

Wst 05 Adaptation to climate change

1 / 1 X: 0 / 1

Wst 06 Design for disassembly and adaptability

1 / 2

Land use and ecology

LE 01 Site selection

1 / 2

LE 02 Ecological risks and opportunities

1 / 2 X: 0 / 1

LE 03 Managing impacts on ecology

2 / 3

LE 04 Ecological change and enhancement

1 / 4 X: 0 / 1

LE 05 Long term ecology management and maintenance

1 / 2

Pollution

Pol 01 Impact of refrigerants

3 / 3

Pol 02 Local air quality

2 / 2

Pol 03 Flood and surface water management

4 / 5

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

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Appendix 2: BREEAM Rating

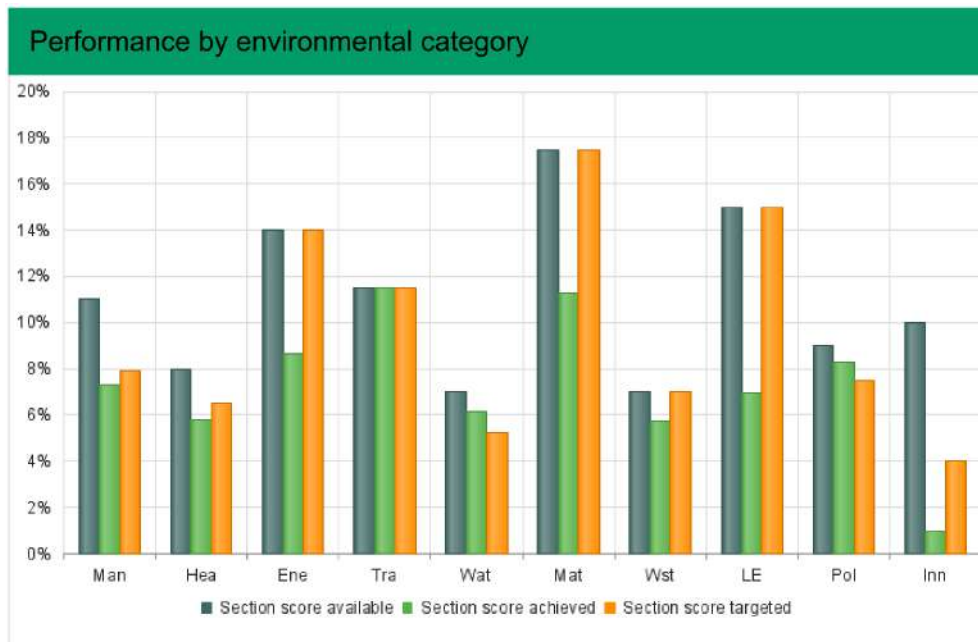
BREEAM[®] UK

BREEAM UK New Construction Version 6

bre

Pre-assessment : Design (Interim) : Broad Lane, Tottenham
Hale, Haringey (22416)

BREEAM Rating					
	Credits available	Credits achieved	% Credits achieved	Weighting	Category score
Man	18.0	12.0	66.67%	11.00%	7.33%
Hea	11.0	8.0	72.73%	8.00%	5.81%
Ene	21.0	13.0	61.90%	14.00%	8.66%
Tra	12.0	12.0	100.00%	11.50%	11.50%
Wat	8.0	7.0	87.50%	7.00%	6.12%
Mat	14.0	9.0	64.29%	17.50%	11.25%
Wst	11.0	9.0	81.82%	7.00%	5.72%
LE	13.0	6.0	46.15%	15.00%	6.92%
Pol	12.0	11.0	91.67%	9.00%	8.25%
Inn	10.0	1.0	10.00%	10.00%	1.00%
Total	130.0	88.0	67.69%	-	72.59%
Rating	-	-	-	-	★★★★★ Excellent



Appendix 3: Minimum Standards

Summary

The BREEAM rating for this assessment is currently **Excellent**. You must achieve the minimum standards and score at least 85% to award a higher BREEAM rating.

BREEAM Rating	Issue	Minimum standard	Standard achieved
Pass	Mat 03	One credit - Prerequisite: All timber and timber based products are 'Legally harvested and traded timber'	Yes
Good	Wat 01	One credit -	Yes
	Wat 02	One credit - Water meter on the mains water supply to each building	Yes
Very Good	Man 04	One credit - Commissioning testing schedule and responsibilities	Yes
	Man 04	One credit - Handover - have a technical and a non-technical building user guide been developed prior to handover?	Yes
	Ene 02	One credit - Sub-metering of end use categories	Yes
Excellent	Man 03	One credit - Responsible construction management	Yes
	Ene 01	One credit - EPR credits	Yes
	Wst 03	One credit -	Yes
Outstanding	Man 03	One credit - Responsible construction management	Yes
	Ene 01	One credit - EPR credits	No
	Wat 01	Two credits -	Yes
	Wst 01	One credit -	Yes

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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.

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the lab_

spacelab_

urbanlab_

the lab foundation_

sense_

eel_

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