



Brighter strategies
for greener projects



Client: Elder Developments (Greyfriars) Ltd

Project: Co-Living Scheme at 20-30 Greyfriars Road

Report: BREEAM Pre-Assessment Report

QUALITY ASSURANCE

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1.0 INTRODUCTION

Greengage Environmental Ltd were commissioned by Elder Developments (Greyfriars) Ltd (the 'applicant') to undertake this BREEAM Pre-Assessment for the development of a mixed-use building comprising 266 co-living residential units and commercial spaces, referred to as 'Co-Living Scheme at 20-30 Greyfriars Road.'

The official planning description of the site is as follows:

'Demolition of the existing building and the erection of a part-7, part-13 storey building comprising 266 co-living units (Sui Generis) and associated communal amenity facilities, refuse storage, cycle parking and plant equipment.'

The project seeks to create a sustainable and energy-efficient development that adheres to stringent environmental standards, enhances biodiversity and provides high-quality living and working environments. The design will integrate advanced energy efficiency measures, renewable energy sources and strategies to mitigate overheating, ensuring a comfortable and resilient urban space.

The development at 20-30 Greyfriars Road is targeting a BREEAM 'Excellent' rating ($\geq 70\%$) in line with Policy CC2 of the Reading Borough Council Local Plan 'Sustainable Design and Construction' and will be assessed under the BREEAM UK New Construction methodology for multi-residential buildings.

This BREEAM Pre-Assessment report presents a framework of credits to target a score of 71.56%, equating to a BREEAM 'Excellent' rating.

The assessment strategy is summarised within Section 3.0 of this report and the full detail is provided within Appendix A.

2.0 BREEAM

The Building Research Establishment's Environmental Assessment Method (BREEAM) is a nationally recognised means of reviewing and improving the environmental performance of buildings.

The BREEAM UK New Construction V6.1 scheme can be used to assess the environmental life cycle impacts of new non-domestic buildings at the design and construction stages. The proposed mixed-use residential scheme is classed as 'New Construction' as it is a new standalone structure that will come into use for the first time upon completion of the works.

Used as a design tool, BREEAM will assess the environmental performance of new build buildings and refurbishments, providing a framework for improvement and an auditable demonstration of good design practice.

2.1 BREEAM CATEGORIES

BREEAM considers key global and local environmental issues and the internal environment for building occupants under various categories, covering:

- Management – rewards good construction site practices, provision of information to building occupants and project management;
- Health & Wellbeing – promotes a healthy internal and external environment;
- Energy – rewards energy efficiency and renewable energy generation;
- Transport – encourages locations with good access to and improvement of sustainable transport options;
- Water – promotes water efficiency and water recycling;
- Materials – rewards the lifecycle consideration and responsible sourcing of materials;
- Waste – encourages good construction and operational waste management practices;
- Land Use & Ecology – encourages ecological enhancements; and
- Pollution – promotes measures to reduce air and water pollution.

2.2 BREEAM RATINGS

BREEAM rating benchmarks, as set out below, enable comparison of building performance against typical sustainability standards.

Table 2.1 BREEAM Ratings and Percentage Score

Rating	Percentage Score
UNCLASSIFIED	<30%
PASS	≥30%
GOOD	≥45%

Rating	Percentage Score
VERY GOOD	≥55%
EXCELLENT	≥70%
OUTSTANDING	≥85%

It is recommended that a score of around 3-4% above the minimum score is aimed for during the design stages and achieved at the final certification stage. This is to ensure that if a credit was lost or disputed and revoked during design progression or third party BRE certification, the target rating would still be robustly achieved.

2.3 MINIMUM RATING REQUIREMENT CREDITS

Under certain categories, there are minimum credit requirements that must be achieved before a particular BREEAM rating can be awarded. All other credits are flexible.

The following minimum standards are required to reach the targeted 'Excellent' rating:

Table 2.2 BREEAM New Construction V6.1 'Excellent' Minimum Standards

Credit	Minimum standard
Man 03: Responsible construction practices	One credit
Man 04: Commissioning and handover	Commissioning – testing schedule and responsibilities
Man 04: Commissioning and handover	Criterion 11 (Building User Guide)
Man 05: Aftercare	One credit
Ene 01: Reduction of energy use and carbon emissions	Four credits (Energy performance or Prediction of operational energy consumption)
Ene 02: Energy monitoring	One credit (First sub-metering credit)
Wat 01: Water consumption	One credit
Wat 02: Water monitoring	Criterion 1 only
Mat 03: Responsible sourcing of materials	Criterion 1 only
Wst 01: Construction waste management	None
Wst 03: Operational waste	One credit

3.0 DEVELOPMENT PERFORMANCE

The proposed development has been assessed against the BREEAM New Construction V6.1 fully fitted 'residential institution' use class methodology.

The pre-assessment BREEAM score that is targeted for the development is 71.56%, which is equivalent to a BREEAM rating of 'Excellent' and includes all required minimum standards.

As shown in Table 2.1, the percentage score required for a BREEAM 'Excellent' rating is 70%. The score of 71.56% is therefore above this threshold. It is anticipated that further credits will be reviewed and targeted where feasible at the detailed design stages.

A summary of the current pre-assessment BREEAM strategy is shown Table 3.1. A detailed breakdown of the targeted BREEAM credits is presented in Appendix A of this report.

Table 3.1 Summary of BREEAM Category Scores

BREEAM category	Credits available	Credits targeted	Weighting (%)	Category score (%)
Management	20	19	11	10.4
Health & Wellbeing	18	13	14	10.1
Energy	28	12	16	6.8
Transport	12	8	10	6.6
Water	9	5	7	3.8
Materials	14	11	15	11.7
Waste	10	8	6	4.8
Land Use & Ecology	13	11	13	11
Pollution	12	9	8	6
TOTAL				71.56
TARGETED RATING				Excellent

4.0 PROGRESS & NEXT STEPS

A BREEAM pre-assessment workshop was held on 13th August 2024 with key members of the design team including the architect, MEP and BREEAM AP. During the workshops key design principles and associated credit achievement were discussed as well as risks and opportunities for credit achievement.

The most significant risk at this stage is late action on early-stage credits that would prohibit a particular feature being included within the design if not considered at this stage.

The early-stage credits/items targeted are detailed within Table 2.1, which demonstrates the progress that has been made against each credit.

Table 4.1 Progress against each credit

Credit	Completion stage	Progress
Man 01 – Project brief and design	Concept design	DTM minutes provided by client. Fortnightly DTMs scheduled. Pre-App documents available to identify design progression. Greengage appointed as BREEAM AP.
Man 02 - Life cycle cost and service life planning	Concept design	Elemental life cycle costing being prepared.
Ene 04 – Low carbon design	Concept design	Meinhardt preparing Energy Strategy for planning to align with GLA Energy Hierarchy through use of ASHP and solar PV.
Tra 01 – Transport assessment and travel plan	Concept design	TTP Consulting preparing Travel Plan and Transport Assessment for planning.
Mat 01 – Environmental impacts from construction products – Building life cycle assessment (LCA)	Concept design and prior to planning application	Mat 01 LCA modelling being progressed by Greengage.
Mat 03 – Responsible sourcing of construction products	Concept design	Sustainable Procurement Plan to be developed and implemented.
Wst 01 – Construction waste management	Concept design	Pre-demolition audit to be conducted.

Credit	Completion stage	Progress
Wst 05 – Adaptation to climate change	Concept design	Climate Change Adaptation review in progress.
Wst 06 – Design for disassembly and adaptability	Concept design	Disassembly and Adaptability review in progress.
LE02-LE05 – Land use and ecology	Preparation & brief	SQE has been appointed and surveyed site. BNG calculation shows development significantly exceeds 10% through tree planting, ornamental planting of climate resilient species and a green wall.

During the next phases of design progression, the BREEAM strategy should be continually reviewed to ensure all target credits can still be achieved with the design or if any additional credits can be picked up as greater detail on certain building elements is established.

5.0 CONCLUSION

This BREEAM Pre-Assessment report has set out a pathway to show how the proposed development could achieve the required 'Excellent' rating. The proposed strategy currently achieves a score of 71.56%, which represents an 'Excellent' rating.

Key actions required at the early project stages have been identified and appointments made where necessary to ensure the required credits can be achieved.

Following this Pre-Assessment report, a BREEAM Design Stage and eventually Post-Construction Stage Assessment would be required in order to gain full BREEAM certification.

Appendix A provides the detailed BREEAM credit assumptions for the proposed development.

APPENDIX A DETAILED CREDIT ASSUMPTIONS

BREEAM New Construction (V6) Design Stage Summary Tracker

Project Name	Co-Living Scheme at 20-30 Greyfriars Road, Reading	
Project Number	552841	
Date	07/10/2024	
Targeted BREEAM Rating	EXCELLENT	71.56%

Project Notes:

BREEAM V6 New Construction
Residential institution (long term stay) - Residential college or school (halls of residence)
Fully fitted



	Further information required
	Potential credits identified
	Credit not targeted

Category	Credit ID	Credit Name	Credit(s) Available	Proposed Scenario	Credit Issue
	Man 01	Project Brief and Design	1	1	Project Delivery Consultation A meeting(s) must be undertaken between the key project delivery stakeholders (as a minimum: the client, the building occupier, the design team and the Principal Contractor [or someone with construction experience]), identifying roles, responsibilities and contributions for key phases of project delivery.
			1	1	Stakeholder Consultation (third parties) - All relevant interested parties (building users, existing community, partnerships and networks) have been consulted by the design team. - Stakeholder contributions and consultation outcomes have influenced Initial Project Brief and Concept Design. - Consultation feedback has been given to, and received by, all relevant parties prior to completion of detailed design.
			1	1	BREEAM AP (Concept Design) Pre-requisite: Project team, including client, formally agree strategic performance targets early in design process. AP is appointed to work with team to maximise project's performance against BREEAM throughout Concept Design, monitor progress against targets, identify risks & opportunities, provide feedback, monitor/coordinate evidence generation.
			1	1	BREEAM AP (Developed Design) Pre-requisite: Project team, including client, formally agree strategic performance targets early in design process. BREEAM AP (Concept Design) credit must be achieved first. AP is appointed to work with team to maximise project's performance against BREEAM throughout Developed Design, monitor progress against targets, identify risks & opportunities, provide feedback, monitor/coordinate evidence generation.
	Man 02	Life cycle cost and service life planning	2	2	Elemental Life Cycle Cost (LCC) Outline entire asset elemental life cycle cost plan carried out.
			1		Component Level Life Cycle Costing (LCC) In line with PD 156865:2008 & includes (where present): - Envelope, e.g. cladding, windows, and/or roofing - Services, e.g. heat source cooling source, and/or controls - Finishes, e.g. walls, floors and/or ceilings - External spaces, e.g. alternative hard landscaping, boundary protection. Examples of how the LCC has influenced the design must be given.
			1	1	Capital Cost Reporting in £/sqm At the design stage, where the final information is not available, credit can be awarded where the client provides predicted capital cost, including contingencies, and commits to providing this information for the final stage of assessment.

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Management	Man 03	Responsible construction practices	✓	✓	Pre-requisite - All timber and timber-based products used during construction are 'legally harvested and traded timber'.
			1	1	Environmental Management All parties who control the site site (principal contractor, demo-contractor) operate EMS (ISO14001 or equivalent) for all main operations and best practice pollution prevention in accordance with Pollution Prevention Guidelines PPG6.
			1	1	BREEAM AP (site) Pre-requisite: Client and contractor formally agree performance targets. BREEAM AP is appointed to assst with maximise performance, going beyond design intent, monitor progress against targets, identify risks/opportunities, provide feedback, coordinate generation of evidence.
			2	2	Responsible Construction Management One Credit - CCS ≥9 points per section and ≥27 overall. Two Credits - CCS ≥11 points per section and ≥35 overall. Exemplary Credit - CCS ≥13 points per section and ≥39 overall.
			2	2	Monitoring of Construction Site Impacts An individual is appointed to record the utility consumption (energy & water) and transport of construction materials & waste to/from site. Targets must be set and monitored.
	Man 04	Commissioning and handover	✓	✓	Mandatory Criterion 9- Provision of a Building User Guide (BUG)
			1	1	Commissioning - Testing Schedule and Responsibilities - A schedule of commissioning including suitable timescale for commissioning/ re-commissioning of all complex/ non-complex building services and control systems and testing and inspecting building fabric. - Commissioning activities carried out in accordance with current Building Regulations, BSRIA, CIBSE guidelines. - Appoint a team member to monitor and programme pre-commissioning, commissioning, testing activities on behalf of the client. - Contractor accounts for the commissioning within their budget and timeline.
			1	1	Commissioning - Design and Preparation Appoint appropriate project team member (by either the client or the principal contractor) to undertake design reviews, give advice, provide commissioning management input during installation and performance testing during handover.
			1	1	Testing and Inspecting Building Fabric Thermographic survey and airtightness testing.

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	Man 05	Aftercare	1	1	Aftercare Support - Operational infrastructure in place to provide aftercare support to the occupier including, meetings with the occupier, on-site facilities training and walkabout, weekly attendance on-site for first month, longer term availability for 12 months. - Monitor energy and water consumption for 12 months
			1	1	Commissioning - Implementation - Over a 12 month period - Full load and part load, summer and winter as appropriate - Interviews with building occupants where affected - Monthly reports comparing sub-metered energy performance to predicted one - Re-commissioning systems and incorporating any revisions into the O&M manuals
			1	1	Post Occupancy Evaluation (POE) 3rd party POE one year after occupation including a review of the design intent and construction process as well as feedback from building users on the environmental conditions of the building. Independent party provides report with lessons learned. Client or occupier commits funds to pay for POE in advance.
	0.55%	Total Credit	20	19	
	Per Credit	Section Score	11.00%	10.45%	

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	Hea 01	Visual Comfort	1	1	Control of glare from sunlight Glare control assessment to identify risk areas Glare control strategy for all relevant areas - Blinds - Building Integrated measures - Bioclimatic Control - External shading or brise soleil Strategy must not increase energy consumption from lighting, therefore curtains are non-compliant.
			1		Daylighting 2% daylight factor across 80% NIFA. Calculations required to confirm feasibility.
			1	1	View Out 95% of floor area in 95% of spaces is within 8m of an external wall with window providing adequate view out and window/opening must be ≥ 20% of the surrounding wall area.
			1	1	Internal and External lighting levels, Zoning and Controls -Internal & external lighting to required illuminance levels (where applicable) including SLL Code for Lighting, CIBSE Lighting Guide 5 & 7 and BS EN 12464. -Internal lighting zoned for occupant control as per criteria.
	Hea 02	Indoor Air Quality	✓	✓	Pre-requisite: Indoor Air Quality Plan Consideration of: -removal of contaminant sources -dilution and control of contaminant sources -procedures for pre-occupancy flush out -third party testing and analysis -maintaining indoor air quality in use -any relevant local authority plans or policies (e.g. AQMAS or Local Air Quality Action Plans)
			1	1	Ventilation Ventilation pathways minimise build-up of air pollutants. Air intakes must be 10m horizontal distance from building exhausts and other external sources of pollution. HVAC systems incorporate suitable filtration. Occupied spaces have CO2 sensors in accordance with Building Regs ADF2 and are linked to mechanical ventilation system. Ventilation rates are in accordance with CIBSE AM10 (naturally ventilated) and AM13 (mixed-mode)
			2	1	Emissions from construction products One credit: 3 of 5 product types meet emission limits/testing criteria plus wood products Two credits: all product types meet emission limits/testing criteria

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Health			1	0	Post construction indoor air quality measurement Formaldehyde concentration in indoor air does not exceed WHO guidelines. TVOC concentration does not exceed specified limits.

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and Wellbeing	Hea 04	Thermal comfort	1	1	Thermal Modelling Thermal modelling has been carried out using software in accordance with CIBSE AM11. Building designed for over heating in accordance with CIBSE TM52. PMV & PPD reported for air conditioned buildings.
			1	1	Design for future thermal comfort Thermal modelling demonstrates that the building design and services strategy can deliver the same thermal comfort levels, PMV and PPD indices in occupied spaces achieved for the first credit under a projected climate change environment.
			1	1	Thermal Zoning and Controls Thermal modelling has informed the temperature control strategy The strategy addresses appropriate zones for heating and cooling, degree of occupant control required, interaction of these systems and potential for manual override of automatic systems.
	Hea 05	Acoustic performance	4	3	Sound Insulation, Indoor Ambient Noise and Room acoustics The building meets the appropriate acoustic performance standards and testing requirements for the building type.
	Hea 06	Security	1		Security of Site and Building - Suitably qualified security specialist (SQSS) conducts an evidence-based Security Needs Assessment (SNA) including visual audit and the recommendations implemented.
			1	1	Safe access Dedicated cycle paths Dedicated/safe footpaths Pedestrian drop off areas providing direct access to footpaths Delivery areas not accessed through general parking areas. Dedicated parking/waiting area for goods vehicles separate to manoeuvring area Parking/turning designed for simple manoeuvring.

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	Credit not targeted				
	Hea 07	Safe and healthy surroundings	1	1	Outside space Providing building users with external amenity area, including with seating for residents.
	0.78%	Total Credit	18	13	
	Per Credit	Section Score	14.00%	10.11%	

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Energy	Ene 01	Reduction of Energy Use and Carbon Emissions	9	4	Energy Performance Based on energy performance BRUKL document Mandatory requirement for 4 credits for Excellent
			4		Prediction of operational energy consumption Pre-requisite: Preliminary design workshop on operational energy performance Additional energy modelling to generate predicted operational energy consumption figures. Risk assessment carried out.
	Ene 02	Energy Monitoring	1	1	Mandatory - Sub-metering of end-use categories Labelling required for each output: Space heating, Domestic Hot Water, Cooling, Lighting, Small power, Other major energy-consuming items. BMS for buildings over 1000sqm
			1	1	Sub-metering of high energy load and tenancy areas Accessible energy monitoring and management system for tenanted areas or relevant function areas or separate sub-meters.
	Ene 03	External Lighting	1	1	External Lighting The average initial luminous efficacy of the external light fittings within the construction zone is not less than 70 luminaire lumens per circuit Watt. All external light fittings are automatically controlled for prevention of operation during daylight hours and presence detection in areas of intermittent pedestrian traffic.
			1	1	Passive Design Analysis Thermal modelling credit under Hea 04 has been achieved. Energy Specialist identifies opportunities for passive design solutions by Concept Design stage Implement passive design measures and Quantify reduced regulated CO ₂ emissions of ≥5% as a result of feasibility study.

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	Credit not targeted				
	Ene 04	Low Carbon Design	1		Free Cooling Analysis of free cooling and implementation opportunities within passive design analysis
			1	1	Low Zero Carbon Feasibility Study LZC study by energy specialist and a local LZC technology has been specified in line with the feasibility study. Quantify reduced regulated CO ₂ emissions of ≥5% as a result of feasibility study.

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	Ene 06	Energy Efficient Transportation Systems	1		Energy Consumption The energy consumption has been calculated in accordance with BS EN ISO 25745 Energy performance of lifts systems with the lowest energy consumption is specified.
			1	1	Energy Efficient Features - energy consumption credit is achieved Lifts must be specified to operate in standby condition during off-peak periods, compliant lighting (> 55 lamp lumens/circuit Watt.), compliant drive controller AND use of regenerative drive demonstrates energy reduction.
	Ene 08	Energy Efficient Equipment	2	2	Unregulated Energy - Identify the buildings unregulated energy loads and estimate their contribution to the total annual unregulated energy demand. - Identify the systems that use a significant proportion of the buildings unregulated energy consumption. - Demonstrate a meaningful reduction in this energy consumption through appropriate specification.
	0.57%	Total Credit	28	12	
	Per Credit	Section Score	16.00%	6.86%	
	Tra 01	Transport assessment and travel plan	2	2	Travel Plan Developing a travel plan, based upon the findings set out within a travel assessment/statement, incorporating the sustainable measures into the design and covering the following: - If relevant, travel patterns and attitudes of existing building or site users towards cycling, walking and public transport, to identify relevant constraints and opportunities. - Predicted travel patterns and transport impact of future building or site users. - Current local environment for pedestrians and cyclists, accounting for any age-related requirements of occupants and visitors. - Reporting of the number and type of existing accessible amenities, see Table 7.1, within 500m of the site. - Disabled access accounting for varying levels and types of disability, including visual impairment. - Calculation of the existing public transport Accessibility Index (AI), see Methodology. - Current facilities for cyclists

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Transport						
	Tra 02	Sustainable transport measures	10	6	Transport options implementation Tra 01 is pre-requisite Identify sustainable transport options, award credits based on AI and number of options. Measures include - dedicated bus service, public transport information system, electric charging, car sharing, cycle storage, cycle facilities, existing amenities, enhanced amenities.	

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	0.83%	Total Credit	12	8	
	Per Credit	Section Score	10.00%	6.67%	
Water	Wat 01	Water Consumption	5	3	Mandatory 1 credit for 12.5% improvement 1 credit - 12.5% improvement over baseline performance- litres/person/day. 2 credits - 25% improvement over baseline performance- litres/person/day. 3 credits - 40% improvement over baseline performance- litres/person/day. 4 credits - 50% improvement over baseline performance- litres/person/day . 5 credits - 55% improvement over baseline performance- litres/person/day. >3 credits requires the implementation of greywater/rainwater recycling.
	Wat 02	Water Monitoring	1	1	Mandatory Criterion 1 Criterion 1- specification of water meter on mains - Areas of 10% + of water consumption fitted with sub-meters - Sub-meters connected to BMS - Pulsed water meter.
	Wat 03	Water Leak Detection	1	1	Leak Detection System Leak detection system capable of detecting major leak on mains.
			1		Flow Control Devices Sanitary supply shut-off. Flow control devices to be fitted to each WC area/facility to ensure water is supplied only when needed.
	Wat 04	Water efficient equipment	1		Water efficient equipment Identify water demands that can be realistically mitigated or reduced. Identify systems or processes to reduce relevant water demand
	0.78%	Total Credit	9	5	
	Per Credit	Section Score	7.00%	3.89%	
	Mat 01	Environmental impacts from construction products - Building life cycle assessment (LCA)	6	6	Superstructure Building LCA options appraisal of 2-4 significantly different superstructure design options at Concept Design. Building LCA options appraisal of 2-3 significantly different superstructure design options at Technical Design.
			1	1	Substructure and hard landscaping options appraisal during Concept Design LCA options appraisal on a combined at least 6 different substructure or hard landscaping design options (at least 2 of each)

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Materials	Mat 02	Environmental impacts from construction products - Environmental Product Declarations (EPD)	1		Specification of products with a recognised environmental product declaration (EPD) Total EPD points score of at least 20
	Mat 03	Responsible sourcing of construction products	✓	✓	Mandatory - Pre-requisite - All timber used must be "legally harvested and traded as per UK Government Timber Procurement Policy"
			1	1	Enabling Sustainable Procurement Contractor sources materials in accordance with a Sustainable Procurement Plan (SPP).
			3	2	Responsible Sourcing of Materials One credit - Superstructure & >10% of points Two/three credits - internal finishes and substructure & hard landscaping & >20% or >30%
	Mat 05	Designing for Durability and Resilience	1	1	Protecting Vulnerable Parts of the Building from Damage. Design and specification measures to limit material degradation due to accidental/malicious damage. Protecting exposed parts of the building from material degradation Exposed building elements designed to limit degradation due to environmental factors through appropriate quality standard or a detailed assessment of the element's resilience. Convenient access to roof and facade for cleaning/repair and design roof to prevent water damage/ingress.
	Mat 06	Material Efficiency	1		Material Efficiency Opportunities and measures to optimise the use of materials in building design, procurement, construction, maintenance and end of life have been identified. Measures must be implemented and targets/actual material efficiencies achieved reported.
	1.07%	Total Credit	14	11	
	Per Credit	Section Score	15.00%	11.79%	
	Wst 01	Construction Waste Management	1	1	Pre-demolition audit Pre-demo audit carried out at Concept Design and referred to in RMP.
			3	2	Construction Resource Efficiency - Construction Resource Management Plan (CRMP) ≤7.5m3 (≤6.5 tonnes) per 100 sqm of non-hazardous construction waste generated.
			1	1	Diversion of Waste from Landfill Non-Demo - 70% Volume / 80% Tonnage Demolition - 80% Volume / 90% Tonnage

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Project Number	552841	
Date	07/10/2024	
Targeted BREEAM Rating	EXCELLENT	71.56%

Project Notes:

BREEAM V6 New Construction
Residential institution (long term stay) - Residential college or school (halls of residence)
Fully fitted



	Further information required
	Potential credits identified
	Credit not targeted

Waste	Wst 02	Use of recycled and sustainably sourced aggregates	1		Project sustainable aggregate points Pre-requisite - pre-demo audit if applicable. Identify all aggregates including quantity, source, distance travelled.
	Wst 03	Operational Waste	1	1	Mandatory 1 Credit - Operational waste Where there is a dedicated space to cater for the segregation and storage of operational recyclable waste volumes generated clearly labelled, accessible, of capacity appropriate.
	Wst 05	Adaptation to Climate Change	1	1	Resilience of structure, fabric, building services and renewables installation Climate change adaptation strategy appraisal Develop recommendations based on appraisal Provide update during technical design on implementation of recommendations
	Wst 06	Design for disassembly and adaptability	1	1	Design for disassembly and functional adaptability - recommendations - Study to explore ease of disassembly and functional adaptation potential of different designs - Develop recommendations and solutions by end of Concept Design
			1	1	Disassembly and functional adaptability - implementation Update during Technical Design on implementation of recommendations or solutions and any changes. Produce building adaptability and disassembly guide for prospective tenants.
	0.60%	Total Credit	10	8	
	Per Credit	Section Score	6.00%	4.80%	
	LE 01	Site Selection	1	1	Previously occupied land At least 75% of the proposed development's footprint on an area of land which has previously been developed.
			1		Contaminated Land Credit if land is deemed to be contaminated land is subsequently remediated.

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Land Use and Ecology	LE 02	Identifying and understanding the risks and opportunities for the project	2	2	Survey and evaluation Pre-requisite - assessment route determined using GN34. Compliance against legislation monitored. Survey & evaluation by ecologist to determine baseline and ecological outcomes.
	LE 03	Managing negative impacts on ecology	1	1	Planning, liaison, implementation and data Roles & responsibilities defined. Site preparation to optimise benefits. Collaboration with stakeholders, solutions implemented.
			2	2	Managing negative impacts of the project Negative impacts from construction managed according to hierarchy (2 credits = no overall loss of ecological value).
	LE 04	Change and enhancement of ecological value	1	1	Liaison, implementation and data collation Only available if ecologist used. Parts of LE03 are pre-requisite. Stakeholder liaison solutions and measures implemented in a way that enhances ecological value on site as priority.
			3	2	Enhancement of ecology Data provided to local environmental records centre. Change in ecological value to award credits
	LE 05	Long term ecology management and maintenance	1	1	Planning, liaison, data, monitoring, and review management and maintenance Parts of LE04 are pre-requisite. Stakeholder collaboration. Monitoring and reporting on project outcomes.
			1	1	Landscape and ecology management plan (or similar) development Plan developed in accordance with BS 42020:2013 covering first five years after completion.
	1.00%	Total Credit	13	11	
	Per Credit	Section Score	13.00%	11.00%	

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Pollution	Pol 01	Impact of Refrigerants	2		Pre-requisite- compliance with BS EN 378:2016 (parts 2 and 3) and where refrigeration systems containing ammonia are installed, the Institute of Refrigeration Ammonia Refrigeration Systems Code of Practice. Impact of refrigerant 2 credits: Where the systems using refrigerants have Direct Effect Life Cycle CO2 equivalent emissions (DELC CO2e) of ≤ 100 kgCO2e/kW cooling/heating capacity OR all refrigerants used have GWP <10. 1 Credit : Where the systems using refrigerants have Direct Effect Life Cycle CO2 equivalent emissions (DELC CO2e) of ≤ 1000 kgCO2e/kW cooling/heating capacity.
			1	1	Leak Detection Refrigerant leak detection system installed or the system is Hermetically sealed.
	Pol 02	Local air quality	2	2	Local air quality Combsution plant emissions from plant providing space heating and doemstic hot water do not exceed required levels in table.
	Pol 03	Flood and surface water management	2	2	Pre-requisite - appropriate consultant appointed Flood Resilience 2 Credits for low flood risk <u>or</u> 1 Credit for medium / high flood risk
			2	2	Surface water run-off Pre-requisite- bespoke surface water run-off design solutions - Peak rate of run-off has 30% improvement for developed site compared to pre-developed for 1 and 100 yr return events. Include climate change allowance. (1 credit) - Flooding of property will not occur in the event of local drainage system failure and use of SuDS to ensure post development runoff volume no greater than pre-development. (1 credit)
			1		Minimising Water Course Pollution No discharge from site for rainfall up to 5mm. Appropriate level of pollution prevention using SuDS. Oil separators.
	Pol 04	Reduction of Night Time Light Pollution	1	1	Night Time Light Pollution Where external lighting pollution has been eliminated through effective design that removes the need for external lighting without affecting the safety and security of the site and its users. OR The external lighting strategy has been designed in compliance with the ILP Guidance Notes for the Reduction of Obtrusive Light, 2021. All external lighting (except for safety and security lighting) can be automatically switched off between 23:00 and 07:00.

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	Potential credits identified				
	Credit not targeted				
	Pol 05	Reduction of Noise Pollution	1	1	Acoustic Report An SQA carried out noise assessment 800m radius, confirmation that the noise survey was in compliance with BS 4142:2014.
	0.67%	Total Credit	12	9	
	Per Credit	Section Score	8.00%	6.00%	
Overall Credits			146.00	96.00	
Final BREEAM Score			110.00%	71.56%	
BREEAM Rating			-	EXCELLENT	