NEAL STREET (OFFICES)

39-49 NEAL STREET, LONDON

BREEAM REFURBISHMENT & FIT-OUT: PRE-ASSESSMENT REPORT

FOR

SHAFTESBURY PLC

September 2017

Our Ref: HLES50137/001Rv2

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This report has been prepared in the RPS Group Quality Management System to British Standard EN ISO 9001:2008

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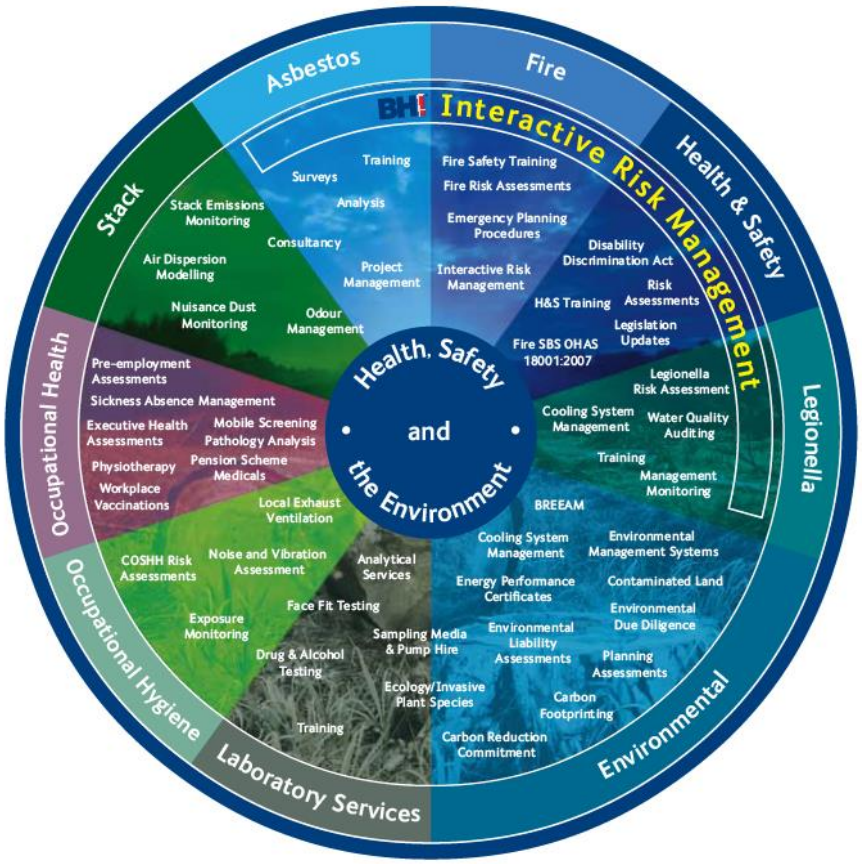
RPS Health, Safety & Environment (London office) is certified to Environmental Management Standard ISO 14001.



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EXECUTIVE SUMMARY

RPS Health Safety & Environment (RPS) was commissioned by *Shaftesbury PLC* to produce a BREEAM Non-domestic Refurbishment and Fit-Out 2014 Pre-Assessment for the proposed offices redevelopment at 39-49 Neal Street, London, W1F 8BH. The scheme consists of the refurbishment of existing office space as well as a top floor extension.

It is understood that the development is required to achieve a 'Very Good' rating under BREEAM Non-domestic Refurbishment and Fit-Out 2014 scheme.

This report is based on information received to date, detailed within the main body of the report. Where specific information was not available, assumptions have been made in order to set up the BREEAM strategy.

This report outlines the credit strategy to be followed by the design team in order to achieve the required BREEAM rating. If the strategy outlined in this report is adopted, it is predicted that the proposed development will achieve the required **BREEAM Very Good** rating of **57.13%**. The full credit analysis is detailed within the Section 3 of the report.

1 INTRODUCTION

RPS Health Safety & Environment (RPS) was commissioned by *Shaftesbury PLC* to produce a BREEAM Non-domestic Refurbishment and Fit-Out 2014 (RFO) Pre-Assessment for the proposed redevelopment of office spaces at *39-49 Neal Street, London, W1F 8BH*.

Background

The proposed redevelopment is located within the Covent Garden (Seven Dials) Conservation Area. The project consists of the remodelling of three storeys of an existing office space as well as a top floor extension providing approximately 250m^2 of further office space. The works include the replacement of part of the existing façade and windows, remodelling of the core areas including the WC areas and the installation of new heating and cooling plant. This will provide four speculative office areas ready for tenant fit out and occupation. Figure 1 shows the proposed third floor plan.

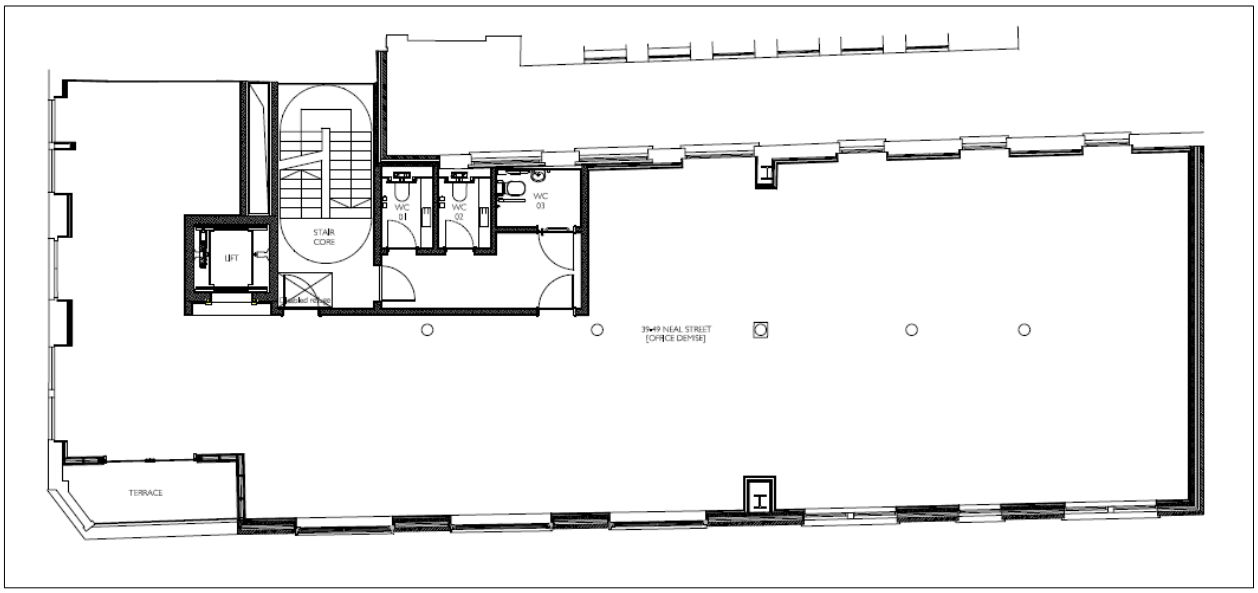

Figure 1: Third floor proposed layout

RPS has registered 39-49 Neal Street – Offices with BRE's BREEAM 2014 RFO scheme. The new build extension has been included as part of this BREEAM RFO assessment because the original building area is greater than 500m^2 and the new extension is less than 20% of the original building area. This is in accordance with the BREEAM technical guidance on part new build, part-refurbishment projects. The registration number is BREEAM-0067-5538.

This report outlines the sustainable deign principles of the scheme in relation to the BREEAM 2014 Refurbishment and Fit-Out 'Office' requirements.

The development will be assessed under the BREEAM 2014 version of the methodology and it is our understanding that a minimum of BREEAM 'Very Good' is targeted for the development.

BREEAM RFO process

BREEAM assessment and certification is generally carried out in three phases:

- A preliminary assessment to set up the strategy to meet the BREEAM target.
- An initial assessment and interim certification is carried out at the design stage
- Final assessment and certification is carried out after construction.

A BREEAM assessment measures the sustainability of a development against design categories, rating the design and construction process as a whole package. The categories included within a BREEAM assessment are:

- Management
- Health and Wellbeing
- Energy
- Transport
- Water
- Materials
- Waste
- Land Use and Ecology
- Pollution

The BREEAM 2014 RFO Non-domestic scheme follows the same structure and scoring system as the conventional New Build scheme. Certain criteria issues and the weighting of the scoring differ to account for the limited influence a team can have on specific aspects of a RFO project. The BREEAM RFO scheme is scope dependant and therefore credits are filtered out based upon the scope of the assessment. Therefore, BREEAM splits the scope of a project into the following four parts:

- Part 1 - Fabric and Structure
- Part 2 - Core Services
- Part 3 - Local Services
- Part 4 - Internal Design

Where the scope of the RFO doesn't include any of the parts listed above, the issues and criteria associated with those parts are filtered out.

The required overall scores for achieving the various BREEAM ratings are highlighted in Table 1 below:

BREEAM rating	Percentage score (%)
Unclassified	< 30
Pass	≥ 30
Good	≥ 45
Very Good	≥ 55
Excellent	≥ 70
Outstanding	≥ 85

Table 1: BREEAM overall scoring thresholds

It has been confirmed that it is a client's requirement for the refurbishment works to achieve a BREEAM 'Very Good' rating, with an overall score of at least 55%. As part of achieving the required BREEAM rating, some of the BREEAM categories have minimum standards that also need to be met. Table 2 highlights the minimum requirements to achieve a BREEAM 'Very Good' rating.

BREEAM issues	Minimum standards for BREEAM Very Good
Ene 02: Energy monitoring	One credit (First sub-metering credit)
Wat 01: Water consumption	One credit
Wat 02: Water monitoring	Part 2: Criterion 1 only
Mat 03: Responsible sourcing of materials	Criterion 1 only

Table 2: BREEAM Very Good Minimum Standards

Scope clarification

During the pre-assessment process, the following filtering questions have been reviewed to establish the scope of the project, in relation to the BREEAM assessment. The scope of the assessment can be seen within Table 3 and answers to the specific filtering questions can be found in Table 4.

BREEAM parts	Included within scope
Part 1: Fabric and structure	Yes – Major works to the façade and windows
Part 2: Core services	Yes – New heating and cooling plant
Part 3: Local services	Yes – New local heating and ventilation systems
Part 4: Interior design	No – Speculative office space to allow for future tenant fit-out

Table 3: Scope of RFO assessment

BREEAM RFO scoping questions	Scoping answers
Is the project a change of use?	No
Are transportation systems specified or present within the refurbishment or fit-out zone?	Yes, newly specified lift
Are there laboratories present and if so what % of total building area do they represent?	No
Laboratory containment area	No
Is cold storage specified or present within the refurbishment or fit-out zone?	Yes
Are soft landscaped areas within the scope of the refurbishment or fit-out zone?	No
If the asset undergoing refurbishment or fit-out is part of a larger building, is the cooling generation plant centralised or localised?	Local to each unit
If the asset undergoing refurbishment or fit-out is part of a larger building, is the heating generation plant centralised or localised?	Local to each unit
Is Wat01 within the scope of the assessment in accordance with Table 42?	Yes
What is the building type?	Office
Is this an assessment of a speculative office building?	Yes
If industrial, does the building have office areas?	N/A
Does the building have any unregulated water demands? e.g. irrigation, car washing or other processes related to water use?	No
Does the building have unregulated energy demands from significantly contributing systems?	No
Is the project a simple building?	No
Does the building have external lighting within the scope of works?	Yes
If undertaking a Part 4 assessment is there any equipment specified that requires commissioning?	No
Historic building (listed building or building in a conservation area)?	Yes
Is any new insulation specified?	Yes

Table 4: RFO assessment specific scoping questions

BREEAM Pre-Assessment

This Pre-Assessment follows the guidance set out in the BREEAM RFO 2014 technical manual, and thus the resulting score is based on version (SD216 1.0-2014).

The details for each category in the environmental ratings are in the completed Pre-Assessment below together with details of how the development intends to achieve this. This BREEAM pre-

assessment has been completed based on information provided by the design team and discussions during design team meetings, along with assumptions made by the BREEAM assessor. The rating obtained by using this BREEAM Pre- Assessment is for guidance only. The predicted ratings may differ from those obtained through a formal assessment, which will be carried out by an appropriately licensed BREEAM assessor. Advice should be sought from a licensed assessor at an early stage in a project to ensure the estimated rating will be obtained.

Design Stage Review

Design specifications are assessed for each individual building, before construction begins. A rating is determined, and (subject to quality assurance) a Design Stage or Interim Certificate is awarded for each building. Registered assessors can apply for assessment of a site, compile and submit a design report for assessment and monitor the assessment status online.

Post Construction Stage Review

The Post Construction Stage (PCS) assessment confirms that buildings have either been built to the Design Stage specifications or to (documented) variations from the Design Stage. Variations must be re-assessed so that new scores and BREEAM levels can be calculated for each affected building. Where a Design Stage assessment has been undertaken, it is used to inform the PCS assessment.

2 SUMMARY OF PREDICTED SCORE

The tables in the following section set out the predicted BREEAM score likely to be achieved for the proposed development, based on the commitments and assumptions from the design team. Overall, it is predicted that the proposed development will achieve the required **BREEAM 'Very Good'** rating of **57.13%** (Table 5 and Figure 2).

	No. credits available	No. targeted credits	Targeted credits (%)	No. potential credits	Potential credits (%)
Management	21	13	9.28%	0	0.00%
Health & Wellbeing	15	10	8.52%	0	0.00%
Energy	24	14	10.07%	0	0.00%
Transport	7	5	4.16%	0	0.00%
Water	8	5	4.16%	0	0.00%
Materials	13	6	7.21%	1	1.20%
Waste	12	7	5.47%	0	0.00%
Land Use & Ecology	2	1	2.50%	0	0.00%
Pollution	13	6	5.76%	1	0.96%
Innovation	10	0	0.00%	0	0.00%
Total	125	67	**57.13%**	2	2.16%

Table 5: Available, targeted and potential credits for the assessment (BREEAM Very Good: 57.13%)

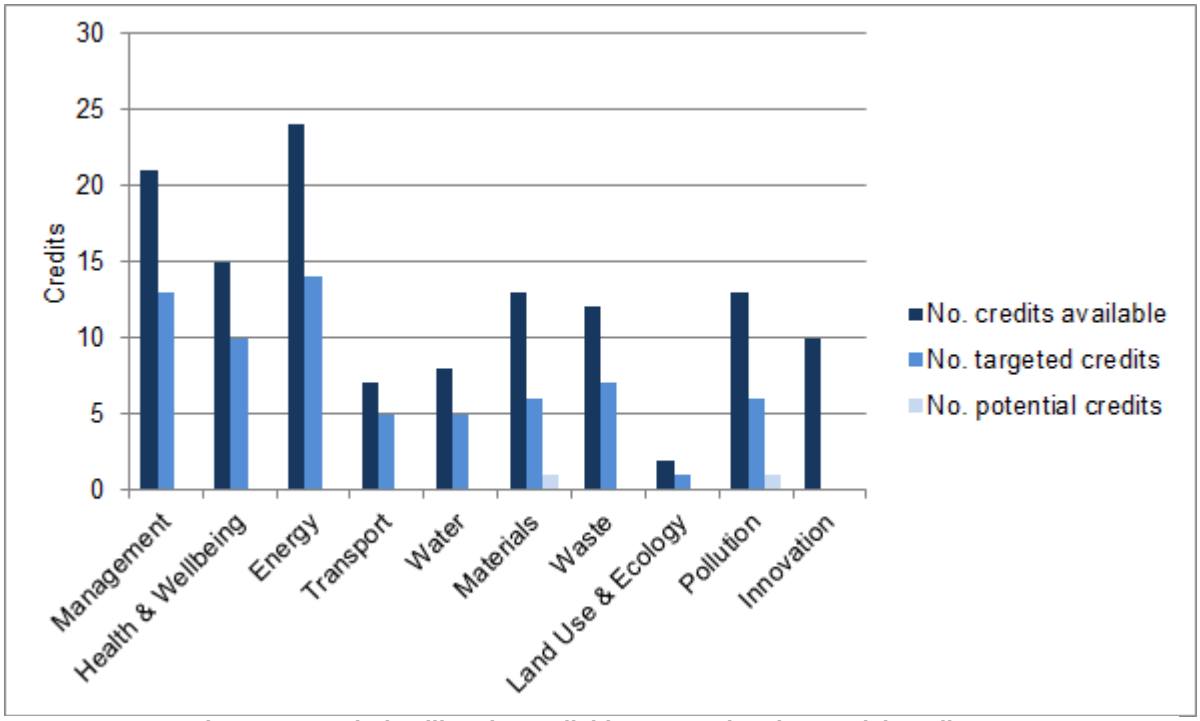

Figure 2: Graph detailing the available, targeted and potential credits

In addition, performance against the minimum standards (required for the specified target rating) under each scenario is summarised below in Table 6. If the required minimum standards are not met then the target rating will not be achieved regardless of overall score.

BREEAM issues	Minimum / Mandatory Requirements Met
Ene 02: Energy monitoring	Yes
Wat 01: Water consumption	Yes
Wat 02: Water monitoring	Yes
Mat 03: Responsible sourcing of materials	Yes

Table 6: BREEAM Very Good Minimum standards targeted

Based on the information received to date it is considered that the development can achieve the required BREEAM 'Very Good' rating. The full credit strategy for the report is detailed within Section 3 of the report.

3 DETAILED PRE-ASSESSMENT

The specific strategy for each section under the BREEAM assessment has been detailed in the tables below. These strategies have been based upon information received to date and discussion held at attended design team meetings.

Management

This category encourages the adoption of sustainable management practices in connection with design, construction, commissioning, handover and aftercare activities. Table 7 details the BREEAM strategy of the management category related to the 39-49 Neal Street office works.

Issue	Available Credits	Targeted Credits	Notes
Man 01: Project brief and design	4	1	- A clear sustainability brief will be developed in accordance with the BRE requirements. - The relevant project stakeholders should be consulted to define their roles and responsibilities for each phase of the project.
Man 02: Life cycle cost (LCC) and service life planning	4	1	- The capital cost for the refurbishment/fit-out works will be reported in the BREEAM Assessment (£K/m^2).
Man 03: Responsible construction practices	6	5	- All timber and timber-based products used on the project will be 'Legally harvested and traded timber'. - The Considerate Constructors Scheme (CCS) will be applied to the site with a score of > 35 targeted. - The principle contractor for the project will operate an environmental management system which covers their main operations (ISO14001). - The principle contractor will monitor and record consumption of energy, water and the transport of materials and waste.
Man 04: Commissioning and Handover	4	3	- Commissioning responsibilities will be clearly defined and programmed. - Complex and simple building services a specialist commissioning manager will be appointed. - An in depth handover strategy will be in place and this will include the development of a Building User Guide (BUG).
Man 05: Aftercare	3	3	- Aftercare support will be provided to the building occupiers. - Seasonal commissioning will be undertaken at the necessary intervals throughout the year. - An independent Post Occupancy Evaluation will be undertaken a year after occupation.

Table 7: BREEAM management category summary

Health and Wellbeing

This category encourages the increase comfort, health and safety of building occupants, visitors and other within the vicinity. Table 8 details the BREEAM strategy of the health and wellbeing category.

Issue	Available Credits	Targeted Credits	Notes
Hea 01: Visual comfort	6	3	- 95% of the occupied floor area is within 7m of a wall which provides an adequate view out. - Internal and external lighting levels, zoning and controls will be designed and installed in accordance with industry best practice guidelines.
Hea 02: Indoor air quality	3	1	- Low VOC products will be used on the project.
Hea 04: Thermal comfort	3	3	- Dynamic thermal modelling will be undertaken to demonstrate internal temperatures meet appropriate industry standards. - The dynamic thermal modelling will also be carried out using future weather to demonstrate the desired results can still be achieved. - The thermal controls and zoning of the spaces will take account of the outputs from the thermal modelling to inform the temperature control strategy.
Hea 05: Acoustic performance	2	2	- The project acoustician will need to confirm the necessary standards regarding sound insulation, internal indoor ambient noise levels and reverberation according to Section 7 of BS 8233:2014.
Hea 06:Safety and security	1	1	- A Suitably Qualified Security Specialist (SQSS) will carry out evidence based Security Needs Assessment (prior to RIBA Stage 2) and provide recommendations, which the project team will implement on the unit.

Table 8: BREEAM Health and Wellbeing category summary

Energy

This category encourages the specification and design of energy efficient building solutions systems and equipment that support the sustainable use of energy in the building as well as sustainable management in the building's operation. Table 9 details the BREEAM strategy of the energy category.

Issue	Available Credits	Targeted Credits	Notes
Ene 01: Reduction of energy use and carbon emissions	15	8	- The number of credits is based upon the improvement of the 'As Refurbished' EPC against the 'Existing' EPC.
Ene 02: Energy monitoring	2	2	- Energy metering and sub-metering will be installed to monitor at least 90% of energy use by all major building components. Meters will be provided with a pulsed output. - Separate sub metering will be provided for each tenancy area.
Ene 03: External lighting	1	1	- The average initial luminous efficacy of the external light fittings within the construction zone will not be less than 60 luminaire lumens per circuit watt. - The external lighting circuit will include a daylight sensor and a timeclock.
Ene 04: Low carbon design	3	0	- Not targeted.
Ene 06: Energy efficient transportation systems	3	3	- The optimum number and size of lifts and escalators has been determined. - The solution that offers the most energy efficient option will be selected including energy efficient features.

Table 9: BREEAM Energy category summary

Transport

This category encourages better access to sustainable means of transport for building users. Table 10 details the BREEAM strategy of the transport category.

Issue	Available Credits	Targeted Credits	Notes
Tra 01: public transport accessibility	3	3	- The Public Transport Accessibility Level (PTAL) confirms the site has an accessibility index of 91.83.
Tra 02: Proximity to amenities	1	1	- All required amenities are located within the necessary distance of the site.
Tra 03: Cyclist facilities	2	1	- Provision of at least 8 compliant cycle storage spaces is required. (This is based upon 40 office workers per floor, as confirmed by the project architect).
Tra 05: Travel plan	1	0	- Not targeted. Confirmation if a travel plan will be provided is required to award this credit.

Table 10: BREEAM Transport category summary

Water

This category encourages sustainable water use in the operation of the building and its site. Table 11 details the BREEAM strategy of the water category.

Issue	Available Credits	Targeted Credits	Notes
Wat 01: Water consumption	5	3	- Water efficient features will be incorporated that will equate to a 40% reduction in water use, compared to a BREEAM baseline building. This could be achieved by the specification of the following: o WC – flush volume 4 litres o WHB taps – 4.50 litres/min o Shower – 6 litres/min
Wat 02: Water monitoring	1	1	- All mains water supplies will have a water meter with a pulsed output.
Wat 03: Water leak detection and prevention	2	1	- A cold water flow control device, linked to a Passive Infra-Red (PIR) sensor, will be fitted to the supply of each WC block.

Table 11: BREEAM Water category summary

Materials

This category encourages steps taken to reduce the impact of construction materials through design, construction, maintenance and repair. Table 12 details the BREEAM strategy of the materials category.

Issue	Available Credits	Targeted Credits	Notes
Mat 01: Life cycle impacts	6	2	- 40% of the available Mat 01 points are targeted. This will be achieved through the reuse of major building elements onsite as well as new materials with robust environmental performance information.
Mat 03: Responsible sourcing	4	2	- A sustainable procurement plan is prepared and adopted for the project. - 18% of the responsible sourcing of materials points available will be achieved by the sourcing of materials through certified suppliers and manufactures.
Mat 04: Insulation	1	1	- Thermal insulation used on the project will have an insulating index score of at least 2.5 based upon the output from the Mat04 calculator.
Mat 05: Designing for durability and resilience	1	1	- Areas with high pedestrian traffic as well as internal and external vehicular movement will have durability measures installed to protect these parts from damage.
Mat 06: Material efficiency	1	0	- This has been marked as a potential item. It would require a documented review of the design at each of the RIBA stages to identify, investigate and implement material efficiency measures.

Table 12: BREEAM Materials category summary

Waste

This category encourages the sustainable management and reuse where feasible, of construction waste, operational waste and waste through future maintenance and repairs associated with a buildings structure. Table 13 details the BREEAM strategy of the waste category related to the 39-49 Neal Street office works.

Issue	Available Credits	Targeted Credits	Notes
Wst 01: Project waste management	4	2	- A pre-refurbishment audit will be carried out in accordance with the BREEAM criteria. - A BREEAM compliant Site Waste Management Plan (SWMP) will be produced for the site. The amount of waste generated will be limited to a maximum of 4.5m3/100m^2 (by volume) or 1.2tonnes/100m^2 of Gross Internal Floor Area (GIFA). Further to this 90% (tonnage) of non-demolition waste and 95% (tonnage) of demolition waste must be diverted from landfill.
Wst 02: Recycled aggregates	1	0	- Not targeted.
Wst 03: Operation waste	1	1	- Appropriate operational waste facilities will be provided, which will be suitably labelled to assist with segregation.

Table 13: BREEAM Waste category summary

Land Use and Ecology

This category encourages sustainable land use, habitat protection and creation, and improvement of long term biodiversity for the building's site and surrounding land. Table 14 details the BREEAM strategy of the Land Use and Ecology category.

Issue	Available Credits	Targeted Credits	Notes
LE 02: Ecological value of site and protection of ecological features	1	1	- No ecological features within the site boundary, therefore the credit can be awarded by default.
LE 04: Enhancing site ecology	1	0	- Not targeted.

Table 14: BREEAM Land Use and Ecology category summary

Pollution

This category addresses the prevention and control of pollution and surface water run-off associated with the building's location and use. Table 15 details the BREEAM strategy of the pollution category.

Issue	Available Credits	Targeted Credits	Notes
Pol 01: Impact of refrigerants	3	1	- The proposed strategy utilises a VRF heating and cooling system therefore only one credit with a potential additional one has been targeted at this stage.
Pol 02: NOx emissions	3	0	- Not targeted
Pol 03: Surface water run-off	5	3	- The Environment Agency flood risk map confirms that the development is within an area with a low probability of flooding. - There is no increase in impermeable area as a result of the refurbishment work therefore one credit under the surface water run-off criteria has been achieved.
Pol 04: Reduction of night time light pollution	1	1	- The external lighting strategy will be designed in accordance with necessary standards as detailed in the BREEAM technical guidance.
Pol 05: Noise attenuation	1	1	- A noise impact assessment in compliance with BS 7445 needs to be carried out to demonstrate that the noise levels from the proposed works is no greater than +5dB during the day and +3dB at night compared to the background noise level.

Table 15: BREEAM Pollution category summary

APPENDIX A - BREEAM SCORING BREAKDOWN

41-49 Neal Street: Offices

Project number: HLES 50137
BREEAM Assessor: Oliver Watts
Scheme: BREEAM 2014 Refurbishment and Fit-Out - Offices

Parts 1-3

Section	Sub Section	Available credits	Targeted pre-assessment	Additional potential credits
Management	Man 01 Project brief and design	4	1	
	Man 02 Life cycle cost and service life planning	4	1	
	Man 03 Responsible construction practices	6	5	
	Man 04 Commissioning and handover	4	3	
	Man 05 Aftercare	3	3	
1 credit =	Total no. Credits	21	13	0
0.71%	Percentage	14.99%	9.28%	0.00%
Health and Wellbeing	Hea 01: Visual comfort	6	3	
	Hea 02: Indoor air quality	3	1	
	Hea 03 Safe containment in laboratories	n/a	n/a	
	Hea 04 Thermal comfort	3	3	
	Hea 05: Acoustic Performance	2	2	
	Hea 06 Safety and security	1	1	
1 credit =	Total no. Credits	15	10	0
0.85%	Percentage	12.78%	8.52%	0.00%
Energy	Ene 01: Reduction of energy use and carbon emissions	15	8	
	Ene 02: Energy monitoring	2	2	
	Ene 03: External lighting	1	1	
	Ene 04 Low carbon design	3	0	
	Ene 05: Energy efficient cold storage	n/a	n/a	
	Ene 06: Energy efficient transportation systems	3	3	
	Ene 07: Energy efficient laboratory systems	n/a	n/a	
	Ene 08: Energy efficient equipment	n/a	n/a	
	Ene 09: Drying space	n/a	n/a	
1 credit =	Total no. Credits	24	14	0
0.72%	Percentage	17.26%	10.07%	0.00%
Transport	Tra 01: Public transport accessibility	3	3	
	Tra 02: Proximity to amenities	1	1	
	Tra 03: Cyclist facilities	2	1	
	Tra 04: Maximum car parking capacity	n/a	n/a	
	Tra 05: Travel plan	1	0	
1 credit =	Total no. Credits	7	5	0
0.83%	Percentage	5.83%	4.16%	0.00%
Water	Wat 01: Water consumption	5	3	
	Wat 02: Water monitoring	1	1	
	Wat 03: Water leak detection and prevention	2	1	
	Wat 04: Water efficient equipment	n/a	n/a	
1 credit =	Total no. Credits	8	5	0
0.83%	Percentage	6.66%	4.16%	0.00%
Materials	Mat 01: Life cycle impacts	6	2	
	Mat 02: Hard landscaping and boundary protection	n/a	n/a	
	Mat 03: Responsible sourcing	4	2	
	Mat 04: Insulation	1	1	
	Mat 05: Designing for durability and resilience	1	1	
	Mat 06: Material efficiency	1	0	1
1 credit =	Total no. Credits	13	6	1
1.20%	Percentage	15.62%	7.21%	1.20%
Waste	Wst 01: Project waste management	7	4	
	Wst 02: Recycled aggregates	1	0	
	Wst 03: Operational waste	1	1	
	Wst 04: Speculative floor and ceiling finishes	1	1	
	Wst 05: Adaption to climate change	1	0	
	Wst 06: Functional adaptability	1	1	
1 credit =	Total no. Credits	12	7	0
0.78%	Percentage	9.37%	5.47%	0.00%
Land Use and Ecology	LE 01: Site selection	n/a	n/a	
	LE 02: Ecological value of site and protection of ecological features	1	1	
	LE 03: Mitigating ecological impact	n/a	n/a	
	LE 04: Enhancing site ecology	1	0	
	LE 05: Long term impact on biodiversity	n/a	n/a	
1 credit =	Total no. Credits	2	1	0
2.50%	Percentage	5.00%	2.50%	0.00%
Pollution	Pol 01: Impact of refrigerants	3	1	1
	Pol 02: NOx emissions	3	0	
	Pol 03: Surface water run-off	5	3	
	Pol 04: Reduction of night time light pollution	1	1	
	Pol 05: Reduction of noise pollution	1	1	
1 credit =	Total no. Credits	13	6	1
0.96%	Percentage	12.49%	5.76%	0.96%
Innovation		10		
Inn		n/a	0	
1 credit =	Total no. Credits	n/a	0	0
1.00%	Percentage	n/a	0.00%	0.00%
Total number of credits		**115**	**67**	**2**
Total percentage		**100.00%**	**57.13%**	**2.16%**
BREEAM rating			**BREEAM Very Good**	