

RPS

**ASHTON COURT
CAMDEN ROAD, LONDON**

BREEAM DOMESTIC REFURBISHMENT PRE-ASSESSMENT

FOR

ORIGIN HOUSING





August 2015

Our Ref: HLES36728/002Rv2

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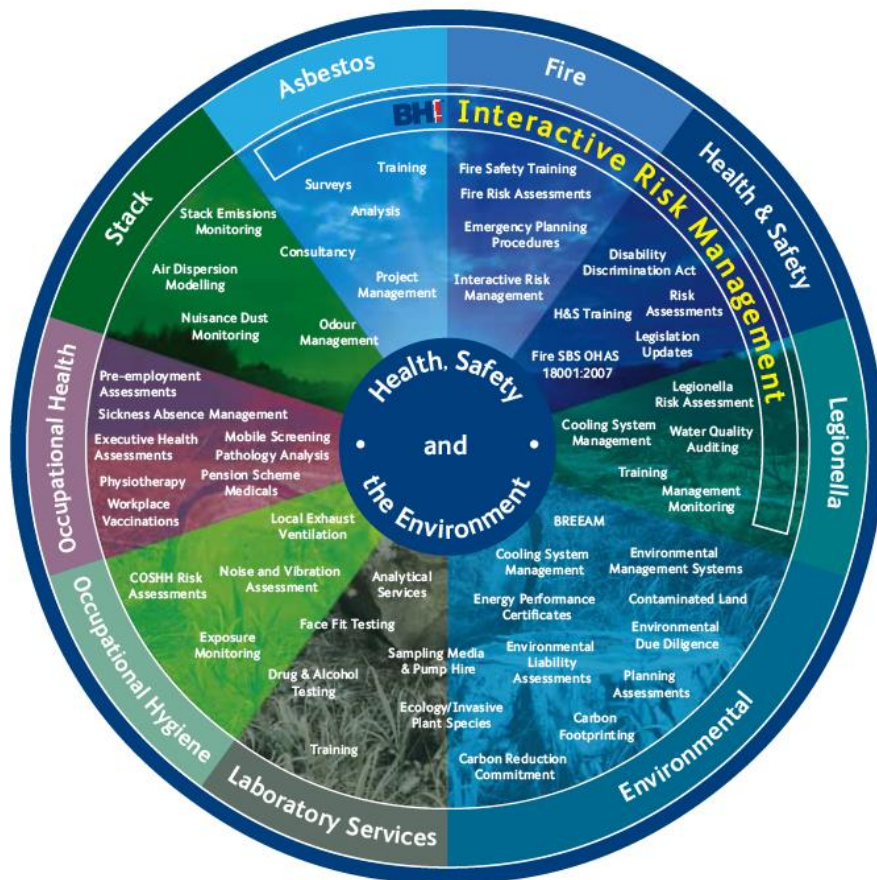


Report Status:	Final	
Project Reference:	HLES36728	
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Date:	3 rd August 2015	

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

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EXECUTIVE SUMMARY

RPS Health Safety & Environment (RPS) was commissioned by *Origin Housing* to produce a BREEAM Domestic Refurbishment 2014 Pre-Assessment for the development at *Ashton Court, London Road, NW1 9HE*.

The proposed development is located in the London Borough of Camden. It consists of the conversion and extension of the existing dwellings to 24 one bedroom flats, which will be assessed under the BREEAM Domestic Refurbishment scheme. In addition to the converted dwellings, 5 new two bedroom town houses are to be built.

This report covers the BREEAM Domestic Refurbishment requirements for the proposed converted/extended 24 residential units. The building is targeting a BREEAM Domestic Refurbishment rating of 'Very Good'. It also targets to achieve 60% of the un-weighted credits in the Energy category, 60% in Water category and 40% in Materials category of the BREEAM assessment. Where specific information is not available, assumptions have been made based on information provided by the Design Team.

This report outlines the credit strategy to be followed by the Design Team in order to achieve the required BREEAM rating. Based on the information received to date, detailed within the main body of the report (Section 2), it is considered that the development can achieve the required 'Very Good' BREEAM rating. The full credit strategy for the report is detailed within Section 3 of the report.

1 INTRODUCTION

RPS Health Safety & Environment (RPS) was commissioned by *Origin Housing* to produce a BREEAM Domestic Refurbishment 2014 Pre-Assessment for the development at *Ashton Court, London Road, NW1 9HE*.

The proposed redevelopment of Ashton Court is located on the east side of the London Borough of Camden on the boundary of Islington and falls within the Cantelowes Ward. The site is bounded by three roads, Camden Road, Camden Park Road and Camden Mews as shown on the site location plan (Figure 2). The scheme falls within the boundary of the Camden Square Conservation Area.

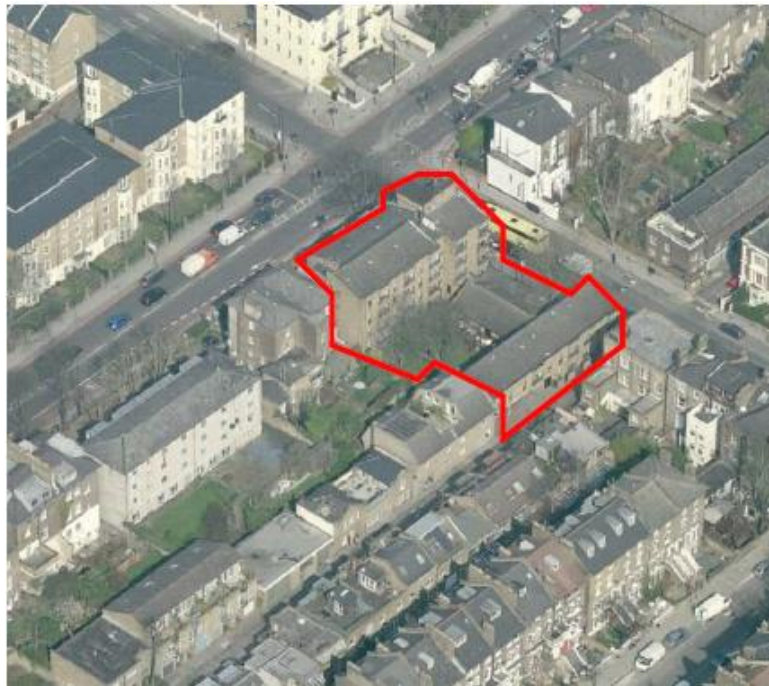


Figure 1: Aerial Photograph

The development site currently is comprised of three distinct parts:

1. A four storey brick building fronting Camden Road which contains the majority of the living accommodation, the design incorporates protruding bay windows as a distinct feature.
2. A single storey block facing Camden Park Road containing the communal social facilities, which open up to an external decking and shared garden.
3. A two storey block to Camden Mews, the design reflects the bay windows from the main block and contains a small number of flats with 4 parking spaces housed in an undercroft.

The existing building consists of 29 studios (no separate bedroom), 6 one bed flats, and 1 two bed flat giving a total of 36 flats. The proposal includes the conversion of the existing dwellings in the

north of the property to 22 residential units, the demolition of the existing common room on Camden Park Road and the replacement by a two storey building which will locate the 2 extended residential units and finally the demolition of the existing buildings in the south of the property on Camden Mews and the construction of 5 new build mews houses.

The development consists of the conversion and extension of the existing dwellings to 24 one bedroom flats, which will be assessed under the BREEAM Domestic Refurbishment 2014 scheme and a 'Very Good' rating is targeted. According to the Camden Council's planning policy requirements (Policy DP22), the development should target to achieve 60% of the un-weighted credits in the Energy category, 60% in Water category and 40% in Materials category of the BREEAM assessment.



Figure 2: Proposed redevelopment

BREEAM Pre-Assessment

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
- Water
- Materials
- Waste
- Pollution

BREEAM has a scoring system of six levels. The different levels are made up by achieving both the appropriate mandatory minimum standards together with a proportion of the other credits so that a score is achieved. The scores required for the corresponding ratings are summarised in the table below.

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

Table 1: BREEAM Classification

This Pre-assessment follows the guidance set out in the BREEAM Domestic Refurbishment 2014 technical manual, and thus the resulting score is based on version (SD5077-2014-2.0).

A summary of the scores achieved in each section and the proposed method for achieving the required credits are detailed in section 2. This BREEAM Pre-Assessment has been completed based on information provided by the client. 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.

Compliance with the Assessment Process

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

- An initial assessment and interim certification is carried out at the design stage.
- Final assessment and certification is carried out after construction.

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 at Ashton Court, Camden Road, London, NW1 9HE should achieve a score of **63.48%**, thereby achieving the required **'Very Good'** rating (>55%) for both elements. In addition all mandatory credits for this rating have also been achieved.

Building name		Ashton Court			
Indicative Building Score		63.48%			
Indicative Building Rating		BREEAM Very Good			
	Issue	Credits Available	Indicative Credits Achieved	Weighting	Section Score
Management	Man 01	3	3	12%	8.73%
	Man 02	2	1		
	Man 03	1	1		
	Man 04	2	1		
	Man 05	1	1		
	Man 06	2	1		
Health and Wellbeing	Hea 01	2	1	17%	8.50%
	Hea 02	4	2		
	Hea 03	1	0		
	Hea 04	2	1		
	Hea 05	2	1		
	Hea 06	1	1		
Energy	Ene 01	6	1.5	43%	28.17%
	Ene 02	4	3.5		
	Ene 03	7	6		
	Ene 04	2	1		
	Ene 05	2	2		
	Ene 06	1	1		
	Ene 07	2	2		
	Ene 08	2	1		
	Ene 09	2	0		
	Ene 10	1	1		
Water	Wat 01	3	1.5	11%	7.70%
	Wat 02	1	1		
	Wat 03	1	1		
Materials	Mat 01	25	15	8%	3.83%
	Mat 02	15	0		
	Mat 03	8	8		
Waste	Was 01	2	2	3%	1.80%
	Was 02	3	1		
Pollution	Pol 01	3	2	6%	3.75%
	Pol 02	3	1		
	Pol 02	2	2		
Innovation		10	1	N/A	1.00%

Table 2: Predicted Score

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

Issue	Minimum Mandatory Requirements Met
Ene 02: Energy Efficiency Rating Post Refurbishment	2 credits
Wat 01: Internal Water use	1 credit
Hea 05: Ventilation	1 credit
Hea 06: Safety	1 credit
Mat 02: Responsible sourcing of materials	Criterion 3 Only

Table 3: Mandatory Credits

It should be noted that the planning BREEAM requirement of achieving 60% of the un-weighted credits in the Energy category, 60% in Water category and 40% in Materials category, according to the Council’s Policy DP22 – Promoting sustainable design and construction, has been met by the proposed redevelopment. This can be seen in Figure 3, which demonstrates that 66% is achieved under the Energy category, 70% under the Water category and 48% under the Materials category.

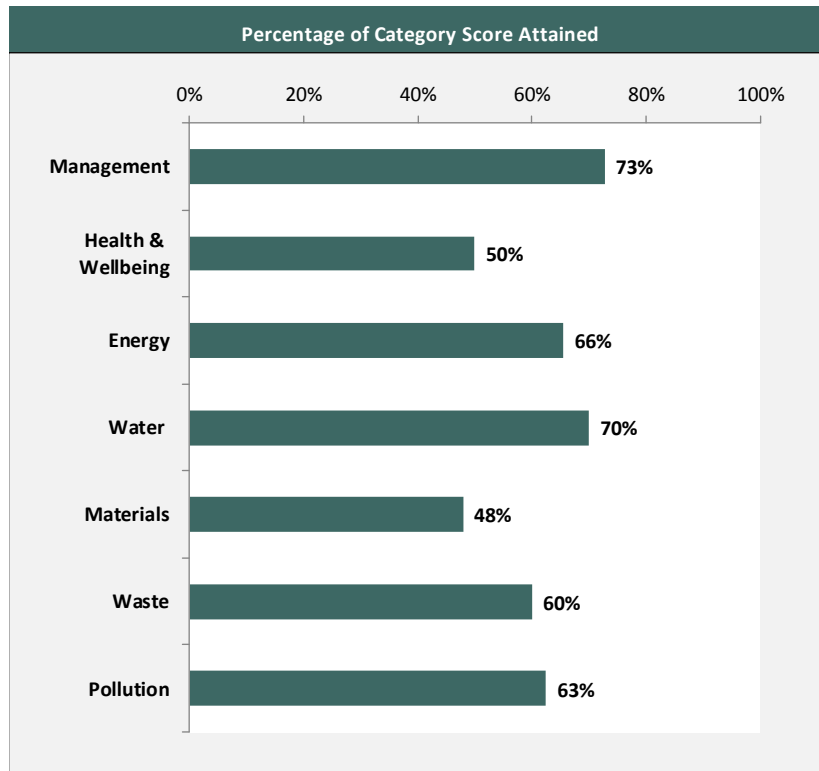


Figure 3: Percentage of category score attained

3 DETAILED PRE-ASSESSMENT

The following pages provide a summary of the output further to additional design information received.

Management

MAN 01 – Home User Guide: Three credits are assumed as the main contractor will be obliged, with the assistance of the design team, to create a suitable Home Users Guide. The developer will ensure the Home Users Guide is distributed to all future building users.

MAN 02 – Responsible construction practices: The main contractor will be required to register the project under the Considerate Constructors Scheme and achieve a score of 25 or above, with a score of at least 5 in each section. Hence, one credit has been assumed.

MAN03 – Construction Site Impacts: The main contractor will be required to (i) set objectives for reducing CO₂ production from energy use arising from site activities (ii) set objectives for reducing water use arising from site activities (iii) provide environmental materials statement and comply with requirements for all site timber used in the project to be 'legally harvested and traded timber'. Hence, one credit has been assumed.

MAN 04 – Security: Where retained, external doors and accessible windows comply with the minimum security requirements. New external door sets and windows will be appropriately certified. The first credit can be achieved. If the proposed development will be designed to achieve a Secured by Design certificate as, the second credit could be achieved (currently not assumed till further confirmation).

Man 05 – Protection and enhancement of ecological features: A suitably qualified ecologist will be appointed to prepare a BREEAM compliant ecology report.

Man 06 – Project Management: The design team will clearly define their roles and responsibilities for delivering the project. These need to be across the planning, design, refurbishment, commissioning & handover and occupation stage. Hence, one credit can be awarded.

Health and Wellbeing

HEA 01 – Daylighting: The proposed conversion and extension will meet the required minimum daylight factor levels (kitchens achieve a minimum daylight factor of at least 2%, living rooms, dining rooms and studies achieve a minimum average daylight factor of at least 1.5% and 80% of the working plane in each new space including kitchens, living rooms, dining rooms and studies, receive direct light from the sky). The credit can be awarded for the conversion if the refurbishment results in a neutral impact on the dwellings daylighting levels in the kitchen, living room, dining room and study.

The credit can be awarded for the extension if new spaces achieve minimum daylighting levels and the extension does not significantly reduce daylighting levels in the kitchen, living room, dining room or study of neighbouring properties. It is envisaged that daylight calculations will be undertaken during the detailed design stage. Hence, one credit has been assumed.

HEA 02 – Sound Insulation: A suitably qualified acoustician will be appointed to carry out a sound testing and confirm that the dwellings go beyond regulations. It has been assumed that both the airborne and the impact sound insulation will show Part E compliance. Hence, two credits have been assumed.

HEA 04 – Inclusive Design: The checklist A-8 (access statement template) of the BREEAM technical manual will be completed by a member of the design team (architect) to optimise the accessibility of the proposed redevelopment. The access statement should demonstrate reasonable provision to provide minimum accessibility to the dwelling in accordance with Part M, Lifetime Homes and other requirements relating to external storage facilities. Thus, one credit has been awarded.

HEA 05 – Ventilation: A minimum level of background ventilation will be provided (with trickle ventilators or other means of ventilation) for all habitable rooms, kitchens and bathrooms compliant with section 7, Building Regulations Approved Document Part F, 2010. Also, it will be provided the minimum level of extract ventilation in all wet rooms (e.g. kitchen, utility and bath-rooms), compliant with section 5, Building Regulations Approved Document Part F 2010, and purge ventilation will be provided in all habitable rooms and wet rooms, compliant with section 7, Part F, 2010. Hence this mandatory credit has been awarded.

HEA 06 – Safety: Fire detectors, alarm system and carbon monoxide detectors will be installed in each dwelling. Hence this mandatory credit has been awarded.

Energy

ENE 01 – Improvement in energy efficiency rating: According to the SAP calculations for the pre and post refurbishment, the energy efficiency rating improvement will be 13. Therefore, 1.5 credits can be awarded.

ENE 02 – Energy efficiency rating post-refurbishment: According to the SAP calculations, the energy efficiency rating post-refurbishment will be more than 77. Therefore the minimum requirements for a Very Good rating will be achieved and 3.5 credits can be awarded under this category.

ENE 03 – Primary energy demand: According to the SAP calculations, as a result of the refurbishment the primary energy demand will be 151.78kWh/m²/year. Hence, 6 credits can be awarded.

ENE 04 – Renewable technologies: According to the provided energy statement, low or zero carbon technologies will be incorporated onsite. At least 10% of the dwellings' primary energy demand per annum will be supplied by photovoltaic panels. Hence, one credit has been assumed.

ENE 05 – Energy labelled white goods: White goods which score highly against the EU energy labelling scheme will be specified. Fridges, freezers and fridge-freezers should be A+ rated, washing machines should be A++ rated and dishwashers A+ rated. If washer dryer and tumble dryers will be specified then they should be A rated. Consequently two credits have been assumed.

ENE 06 – Drying space: All 1 bed dwellings will be supplied with 4m+ drying lines. All drying lines will be installed to each of the dwellings (over bath fixed lines or in a storage area with appropriate ventilation). Hence this credit has been awarded.

ENE 07 – Lighting: Energy efficient external lighting will be specified and all internal lighting will have a maximum average wattage of 9 Watts/m², therefore two credits have been assumed.

ENE 08 – Energy display devices: An appropriate energy display device will be installed in each dwelling showing electricity consumption data; this system will comprise a self-charging sensor fixed to the incoming mains supply or supplies, to measure and transmit energy consumption data to a visual display unit. As a minimum the visual display unit will be capable of displaying the following information: Local time, current energy consumption (kW and kWh), current estimated emissions (g/kg CO₂), current tariff, current cost (per hour), visual presentation of data (i.e. non-numeric) to allow consumers to easily identify high and low level of usage. Therefore one credit has been assumed.

ENE 09 – Cycle storage: This credit is not sought.

ENE 10 – Home Office: A home office facility will be provided within the bedroom/living area of each dwelling. The following services must be provided in the suitable room intended as a home office: two double power sockets, two telephone points (or double telephone point), or one telephone point where cable or broadband is available and a window that can be opened (The room chosen to be the nominated home office must have a daylight factor of at least 1.5%). Hence, this credit has been awarded.

Water

WAT 01 – Internal water use: It is assumed that water efficient sanitary fittings will be specified for each dwelling. It is assumed that the water consumption will be between 118 and 129 litres per day, resulting in 1.5 credits being assumed.

Proposed water specification:

- Showers: 6 litres/minute
- Baths: 200 litres capacity to overflow
- WCs: 3 by 6
- Bathroom taps: 3 litres/minute
- Kitchen and Utility Taps: 5 litres/minute
- Dishwasher: 1.25 litres per place setting
- Washing machine: 8.17 litres / kg

WAT 02 – External water use: 17 flats have been provided with communal garden space. Therefore, 4 compliant rainwater butts should be installed and a total capacity of min 510 litres should be applied. In addition, 6 flats have been provided with balconies and 1 with terrace. Therefore the flats provided with balconies can get the credit by default, while the flat provided with a terrace requires a rainwater butt of min 100litres. Hence, one credit has been awarded.

WAT 03 – Water meter: Appropriate water meters will be specified and supplied to each dwelling (in a location visible to occupants, not hidden in a cupboard). The meter will be capable of recording and displaying historic water consumption to allow water consumption to be monitored over time. The meter should be capable of displaying current consumption either instantaneously or at half hourly intervals. Therefore the credit can be assumed.

Materials

MAT 01 – Environmental impact of materials: It is assumed that all new building elements such as internal walls and windows will each attain at least a Green Guide rating of A. Retained elements such as external walls, floor, roof undergoing refurbishment can achieve a maximum of 5 credits where will attain at least a Refurbishment Green Guide Rating of A. Therefore, at least 15 credits have been assumed.

MAT 02 – Responsible sourcing of materials: All new timber used in the project will be sourced in accordance with the UK Government's Timber Procurement Policy.

MAT 03 – Insulation: All new insulation will have an insulation index of at least 2 and more than 80% of the new thermal elements will be responsibly resourced, therefore eight credits are assumed.

Waste

WST 01 – Household waste: The London Borough of Camden has a collection scheme in place and recycling is being sorted after collection. Hence, one credit can be achieved since each dwelling will be provided with 1 dedicated internal recycling container with an overall capacity of minimum 30 litres. All dwellings will be provided with a composting service or facility for kitchen waste and an interior container for kitchen waste of at least 7 litres. Hence, the second credit can be achieved.

WST 02 – Refurbishment site waste management: The main contractor will be obliged to ensure one credit is achieved by preparing a compliant Level 2; Site Waste Management Plan.

Pollution

POL 01 – Nitrogen oxide emissions: According to the energy statement the existing communal gas boilers will provide the space heating and hot water requirements of each dwelling. It is assumed that the NOx emissions will be less than 70mg/kwh. Hence, two credits have been assumed.

POL 02 – Surface water run-off: The development will have a SUDS strategy implemented. It is also assumed that detailed surface water run-off calculations will be carried out by a qualified Hydrologist. Hence, one credit has been assumed.

POL 03 – Flooding: A Flood Risk Assessment will be undertaken for the development by a qualified Hydrologist. Based on the EA flood map the development is located in a low flood risk zone. Hence, two credits can be awarded if the dwellings will be defined as having a low annual probability of flooding.

Based on the information received to date, detailed within the main body of the report (Section 2), it is considered that the development can achieve the required **'Very Good'** BREEAM rating.