SAP WorkSheet: New extension to existing dwelling

Water heating cost (other fuel)	(219)	13.19	x 0.01 =	321.04	(247)
Space cooling	(221)	13.19	x 0.01 =	30.2	(248)
Pumps, fans and electric keep-hot	(231)	13.19	x 0.01 =	2152.56	(249)
(if off-peak tariff, list each of (230a) to (230g) separately as applicable and apply fuel price according to Table 12a					
Energy for lighting	(232)	13.19	x 0.01 =	418.71	(250)
Additional standing charges (Table 12)				0	(251)
	one of (233) to (235) x)	13.19	x 0.01 =	-1025.2	(252)
Appendix Q items: repeat lines (253) and (254) as needed					
Total energy cost	(245)...(247) + (250)...(254) =			12198.12	(255)

11a. SAP rating - individual heating systems

Energy cost deflator (Table 12)		0.42	(256)
Energy cost factor (ECF)	[(255) x (256)] ÷ [(4) + 45.0] =	2.15	(257)
SAP rating (Section 12)		70.07	(258)

12a. CO2 emissions – Individual heating systems including micro-CHP

		Energy kWh/year		Emission factor kg CO2/kWh		Emissions kg CO2/year	
Space heating (main system 1)	(211)	x		0.519	=	33181.8	(261)
Space heating (secondary)	(215)	x		0.019	=	839.02	(263)
Water heating	(219)	x		0.519	=	1263.22	(264)
Space and water heating	(261) + (262) + (263) + (264) =					35284.03	(265)
Space cooling	(221)	x		0.519	=	118.82	(266)
Electricity for pumps, fans and electric keep-hot	(231)	x		0.519	=	8469.9	(267)
Electricity for lighting	(232)	x		0.519	=	1647.54	(268)
Energy saving/generation technologies							
Item 1				0.519	=	-4033.97	(269)
Total CO2, kg/year	sum of (265)...(271) =					41486.33	(272)
CO2 emissions per m²	(272) ÷ (4) =					17.71	(273)
EI rating (section 14)						77	(274)

13a. Primary Energy

		Energy kWh/year		Primary factor		P. Energy kWh/year	
Space heating (main system 1)	(211)	x		3.07	=	196277.69	(261)
Space heating (secondary)	(215)	x		1.04	=	45925.04	(263)
Energy for water heating	(219)	x		3.07	=	7472.23	(264)
Space and water heating	(261) + (262) + (263) + (264) =					249674.96	(265)
Space cooling	(221)	x		3.07	=	702.84	(266)

SAP WorkSheet: New extension to existing dwelling

Electricity for pumps, fans and electric keep-hot	(231) x	3.07	=	50101.32	(267)
Electricity for lighting	(232) x	0	=	9745.58	(268)
Energy saving/generation technologies					
Item 1		3.07	=	-23861.81	(269)
'Total Primary Energy		sum of (265)...(271) =		286362.88	(272)
Primary energy kWh/m²/year		(272) ÷ (4) =		122.22	(273)

Predicted Energy Assessment

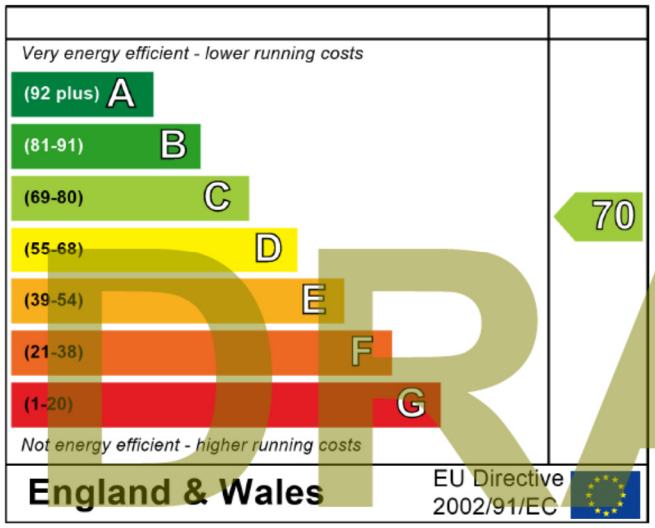
Athlone House
Hampstead Lane
LONDON
N6 4RU

Dwelling type: Detached House
Date of assessment: 28 March 2016
Produced by: Stroma Certification
Total floor area: 2343 m²

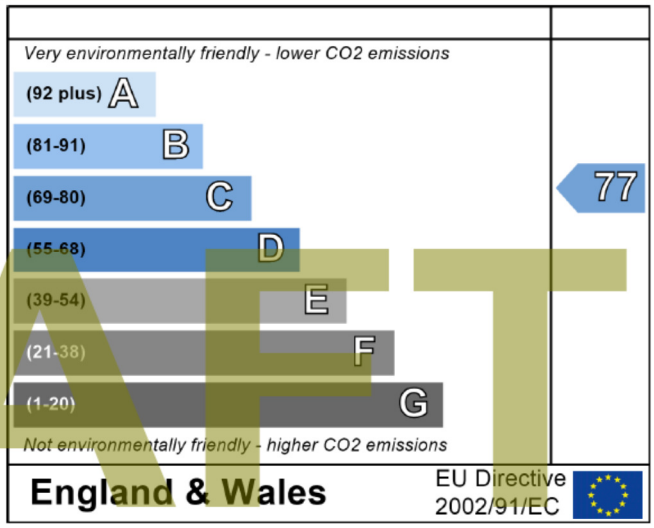
This is a Predicted Energy Assessment for a property which is not yet complete. It includes a predicted energy rating which might not represent the final energy rating of the property on completion. Once the property is completed, an Energy Performance Certificate is required providing information about the energy performance of the completed property.

Energy performance has been assessed using the SAP 2012 methodology and is rated in terms of the energy use per square metre of floor area, energy efficiency based on fuel costs and environmental impact based on carbon dioxide (CO2) emissions.

Energy Efficiency Rating



Environmental Impact (CO_2) Rating



The energy efficiency rating is a measure of the overall efficiency of a home. The higher the rating the more energy efficient the home is and the lower the fuel bills are likely to be.

The environmental impact rating is a measure of a home's impact on the environment in terms of carbonn dioxide (CO2) emissions. The higher the rating the less impact it has on the environment.

APPENDIX C
DOMESTIC BREEAM REPORT

APPENDIX C:
Domestic BREEAM report

PRICE&MYERS

BREEAM®

Athlone House

BREEAM Domestic Refurbishment 2014 Pre-Assessment Report

BREEAM ACCREDITED PROFESSIONAL

Job Number:
Report: v1

Prepared by: Jess James

Date: 04 May 2016

Executive Summary

Price & Myers has been commissioned to carry out a Preliminary BREEAM (BRE Environmental Assessment Method) Domestic Refurbishment assessment for the proposed development of Athlone House in Camden. The development involves the refurbishment and extension of an existing property in Hampstead.

This pre-assessment report demonstrates that an Excellent rating can be achieved, with a score of 72.88%, based on the credits targeted by the design team.

The score provides a small buffer above the 70% threshold for an Excellent rating, but this could be increased if some of the potential credits are targeted. This score meets the minimum target of Excellent required by the London Borough of Camden.

It is key for the design team to remain in contact with the assessor throughout the process and to check that all specifications are in line with the pre-assessment to ensure the required level is achieved upon construction. In order to sign off the planning condition, a Design Stage and Post Construction Stage assessment will be required and the reports submitted to the BRE for certification.

Contents

1. Introduction

Price & Myers has been commissioned to carry out a Preliminary BREEAM (BRE Environmental Assessment Method) Domestic Refurbishment assessment for the proposed development of Athlone House in Camden.

The development involves the refurbishment and extension of an existing property in Hampstead. There is a planning target to achieve a BREEAM Excellent rating.

This report comprises a pre-assessment of the development against the BREEAM Domestic Refurbishment scheme in support of the planning application. It concludes the BREEAM score and rating that the development can achieve based on the individual credits targeted by the design team.

The results presented are indicative only of the potential performance achievable for the assessed building. The results do not represent a formal certified BREEAM assessment or rating and must not be communicated as such.

2. BREEAM Domestic Refurbishment

BREEAM Domestic Refurbishment is a performance based assessment method and certification scheme for domestic buildings undergoing refurbishment and/or subterranean extensions.

The primary aim of the scheme is to improve the environmental performance of existing dwellings in a robust and cost effective manner. The performance of the dwelling on the scheme is quantified by a number of individual measures and associate criteria encompassing a range of environmental issues, categorised into the following sections:

- Management
- Health and Wellbeing
- Energy
- Water
- Materials
- Pollution
- Waste
- Innovation

BREEAM Scoring

Within each of the eight BREEAM categories outlined above, there are a number of credit requirements that reflect the options available to designers and managers of buildings.

An environmental weighting is applied to the scores achieved under each category, illustrated in Section 3, in order to calculate the final BREEAM score. The weighting factors have been derived from consensus based research with various groups such as government, material suppliers and lobbyists. This research was carried out by BRE to establish the relative importance of each environmental issue.

The current rating benchmarks for this BREEAM scheme are detailed in the table below:

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

Table 2.1 - BREEAM rating benchmarks

Minimum Standards

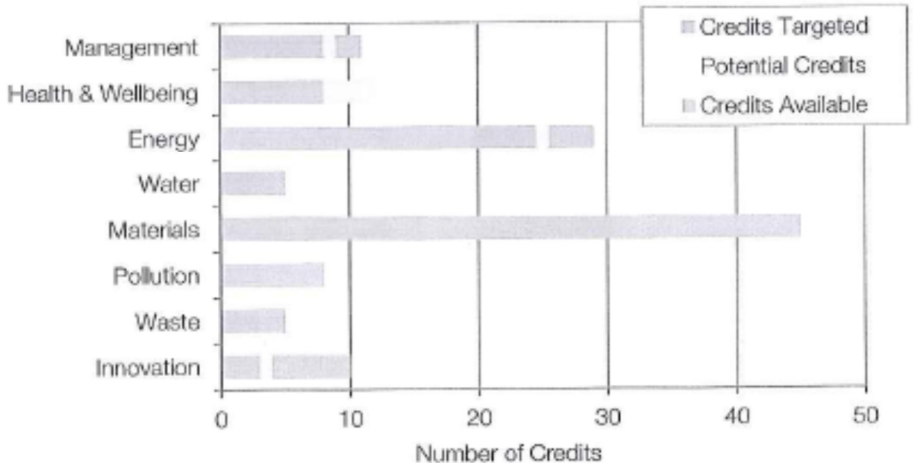
In order to achieve particular benchmark ratings there is a minimum performance requirement within the BREEAM schemes. The minimum performance requirements are detailed in the table below and a project cannot achieve a particular rating unless the minimum requirements have been met, irrespective of the overall percentage score.

BREEAM Credit	Minimum Standards by Rating Level				
	Pass	Good	Very Good	Excellent	Outs:anding
Ene 02: Energy Efficiency Rating Post Refurbishment	EER ≥ 50	EER ≥ 58	EER ≥ 65	EER ≥ 70	EEF ≥ 81
Wat 01: Internal Water Use	-	-	1 Credit	2 Credits	3 Credits
Hea 05: Ventilation	1 Credit	1 Credit	1 Credit	1 Credit	1 Credit
Hea 06: Safety	1 Credit	1 Credit	1 Credit	1 Credit	1 Credit
Pol 03: Flooding	-	-	-	2 Credits	2 Credits
Mat 02: Responsible Sourcing of Materials	Criterion 3 only	Criterion 3 only	Criterion 3 only	Criterion 3 only	Criterion 3 cnly

Table 2.2 - Minimum BREEAM standards

3. Score Summary

The potential BREEAM score of the development has been determined based on discussions with the design team and is currently expected to achieve the following:



BREEAM Section	Credits Available	Credits Targeted	% of Credits Achieved	Section Weighting	Section Score
Management	11	8	72.7%	12%	8.73
Health & Wellbeing	12	8	66.7%	17%	11.33
Energy	29	24.5	84.5%	43%	36.33
Water	5	3	60.0%	11%	6.60
Materials	45	16	35.6%	8%	2.84
Pollution	8	3	37.5%	6%	2.25
Waste	5	3	60.0%	3%	1.80
Innovation	10	3	30.0%	10%	3.00
Target BREEAM Score			72.88		
Target BREEAM Rating			Excellent		
Potential BREEAM Score			82.12		
Potential BREEAM Rating			Excellent		

Minimum BREEAM Standards					
Rating Level	Pass	Good	Very Good	Excellent	Outstanding
Minimum Standards Achieved	Yes	Yes	Yes	Yes	No

This report demonstrates that the development has met all of the minimum standards and can achieve a Excellent rating on the BREEAM Domestic Refurbishments scheme.