

**BREEAM New Construction 2011 (Retail) Pre-Assessment of
74 Charlotte Street, London**

Pre-Assessment Guidance Report

16/02/12
Rev 2

breeam

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1.0 Executive Summary

The target BREEAM rating for 74 Charlotte St is 'Very Good'.

A pre-assessment has been carried out and on current design intent with 'easy wins' the score is 56.54% which places the development within the 'Very Good' rating category.

A number of additional credits have been identified as being potentially available and if targeted, these would enable a maximum potential score of 70.76% to be achieved, a high rating of 'Very Good'.

These additional credits are listed in this report for consideration by the project team in order to provide flexibility in the formal BREEAM assessment process.

2.0 Introduction

This report covers BREEAM pre-assessment works that have been carried out to identify the current BREEAM New Construction 2011 (Retail) rating of 74 Charlotte Street based on the current design intent. The exercise has also identified potential ways of improving this rating and attaining the target rating of 'Very Good'.

The report concludes with an expanded list of credits (and associated requirements) which may be considered by the design team in forming their strategy with regard to reaching the target rating.

It is recommended that the information contained within this pre-assessment be included in any specifications and contractor or supplier tenders, in order to ensure that the obligations discussed are implemented. This should prevent the score from reducing significantly during the formal design stage and post construction stage assessments.

3.0 About BREEAM

3.1 Introduction

BREEAM is a voluntary scheme that aims to quantify and reduce the environmental burden of buildings by rewarding designs and operational procedures that take positive steps to minimise their environmental impact.

Projects are assessed using a system of credits. These credits are grouped into the following categories:

- Management
- Health & Wellbeing
- Energy
- Transport
- Water
- Materials
- Waste
- Land & Ecology
- Pollution
- Innovation

The assessment process results in a report covering the above credit categories. The full assessment is submitted to the BRE for quality assurance checking and certification. Certificates are awarded depending on a rating scale and will result in a building being awarded a rating of PASS, GOOD, VERY GOOD, EXCELLENT and, for exemplar buildings, OUTSTANDING.

3.2 Scoring & Rating

In order for a BREEAM score to give an appropriate balance across such a broad selection of issues, the BRE have developed a weighting system through consultation with a range of

industry representatives. This weighting system provides a relative importance to each of the credit categories. The current weightings are as follows;

Category	Weighting
Management	12%
Health & Wellbeing	15%
Energy	19%
Transport	8%
Water	6%
Materials	12.5%
Waste	7.5
Land Use & Ecology	10%
Pollution	10%

The number of environmental criteria within each of the categories varies and as a result, there are a different number of credits within each category. Due to the different number of credits within each category and the differing category weightings, the overall value of each individual credit (as a percentage of the total number of credits in the assessment) is different depending on the category.

In order to achieve credits, information must be submitted to the assessor who will then award credits based on the current BREEAM compliance criteria. The weightings are then applied to the sum total for each credit category to achieve an overall score. In the case of a pre-assessment, this is an informal process; for the full assessment, this information needs to be provided in full as confirmation of commitment to achieve each credit. This score is then used to identify the overall BREEAM rating using the following ranges;

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

Once the Design Stage and then the Post Construction assessments have been carried out, based on information submitted to the assessor, a report is written which describes which credits have been awarded. This report then goes to the BREEAM team at the BRE for QA checking and comments prior to certification. After the Design Stage assessment submission and pass through BRE QA, an interim certificate is awarded. After the Post Construction assessment submission and pass through BRE QA the final certificate can be awarded.

3.3 BREEAM New Construction 2011

The current version of BREEAM for new buildings is BREEAM 2011 New Construction. This scheme was launched on 1st July 2011 and covers the following building types;

- Commercial;
 - Offices

- Industrial
- Retail
- Public;
 - Education
 - Healthcare
 - Prisons
 - Law Courts
- Multi-Residential, includes;
 - Care homes /sheltered housing
 - Student halls of residence
 - Military accommodation
- Other, includes;
 - Residential (such as hotels, residential & secure training centres)
 - Institutions (such as art galleries, libraries, community centres & places of worship)
 - Public assembly (such as cinemas, theatres, exhibition/conference centres, sport & leisure buildings)
 - Other (such as transport hubs, research & development facilities, crèche)

Other building types may be assessed under a bespoke version of BREEAM 2011 and refurbishment projects should be assessed under the previous version of BREEAM (BREEAM 2008) until such time as BRE develop their proposed BREEAM Refurbishment schemes (expected at some point in 2012).

3.4 BREEAM Retail, Shell & Core Certification

When developers are working on Shell & Core projects there will be a number of credits which will not be able to be awarded (either in part or in full) until the building fit-out design is completed by the tenant. This can be quite significant eg between 30-50 credits.

There are 4 options in how to deal with these credits if the project has to be certified at conclusion of Shell & Core;

Option 1: No evidence provided

This means the credits cannot be achieved and the building would not reach its target score at conclusion of Shell & Core works.

Option 2: Provision of Green Building Guide for tenant fit-outs

In this case the developer will produce a Green Building Guide which will be provided to the building tenants and will outline what needs to be addressed in the fit-out works to address the relevant BREEAM credits. As this is not legally binding then it only allows half a credit to be awarded for any fit-out related issues. Again this means that the building would not reach its target score at conclusion of Shell & Core works although the score would be higher than for Option 1.

Option 3: Tenant / developer collaboration

In this case the Shell & Core developer will work with the tenant to fit-out the building in accordance with the targeted BREEAM credits (as would happen with a traditional, fully specified building contract). Full credits can be awarded.

Option 4: Formal Green Lease agreement

This is a formal tenancy lease agreement that would legally require that the tenant fit-out the building in accordance with all of the targeted BREEAM credits. Full credits can be awarded.

If the local authority requires the development to achieve Very Good at Shell & Core then the only way to formally do this (ie with a BREEAM certificate) is by Option 3 or 4. However, Option 3 is only possible if the developer knows who the tenant will be before they finish Shell & Core and can work with them. If they want to be able to conclude the Shell & Core works and then be able to walk away with no further involvement then their only choice is Option 4, a formal, detailed legal agreement. More information on Green Leases can be found here: <http://www.betterbuildingspartnership.co.uk/working-groups/green-leases/green-lease-toolkit/>

Alternatively the conclusion of the BREEAM assessment could be passed to the fit-out contractor if the local authority found this to be acceptable.

4.0 BREEAM Pre-Assessment

The following table presents the following scenarios;

- Current - credits available based on the current design intent
- Scenario 1 – as Current scenario plus the inclusion of additional credits (typically ‘easy wins’) which would require limited changes in design, such as inclusion of standard practices which are not included in the current project scope. This includes addressing credits which are required as a minimum standard in order to achieve the required ‘Very Good’ rating. Some additional costs may result from the inclusion of these credits however these are not considered to be unreasonable.
- Scenario 2 – as Scenario 1 plus the inclusion of further credits which could be targeted in order to achieve a higher rating of ‘Very Good’. These additional credits are likely to result in more significant design changes and/or higher costs than those listed under Scenario 1. The score achieved for this scenario should be considered as the maximum potential for the project.

4.1 Credit Summary

The following table gives a summary of credits identified (before weighting):

	Available	Current	Easy wins	Further potential
Management				
Man 01 - Sustainable Procurement	8	4	5	5
Man 02 - Responsible Construction Practices	2	1	1	2
Man 03 - Construction Site Impacts	5	4	4	5
Man 04 - Stakeholder Participation	4	2	3	3
Man 05 - Life Cycle Cost and Service Life Planning	3	0	0	0
Management Totals:	22	11	13	15
% Management Score Totals:	12	6	7.09	8.18
Health & Wellbeing				
Hea 01 - Visual Comfort	4	2	2	2
Hea 02 - Indoor Air Quality	4	0	1	2
Hea 03 - Thermal Comfort	2	0	2	2
Hea 04 - Water Quality	1	0	1	1
Hea 05 - Acoustic Performance	2	0	2	2
Hea 06 - Safety and Security	2	1	2	2
Health & Wellbeing Totals:	15	3	10	11
% Health & Wellbeing Score Totals:	15	3	10	11
Energy				
Ene 01 - Reduction of CO2 Emissions	15	0	0	1
Ene 02 - Energy Monitoring	2	2	2	2
Ene 03 - External Lighting	1	1	1	1
Ene 04 - Low and Zero Carbon	5	0	1	1

Technologies				
Ene 05 - Energy Efficient Cold Storage	2	0	1	2
Ene 06 - Energy Efficient Transportation Systems	2	0	2	2
Ene 08 - Energy Efficient Equipment	2	0	0	2
Energy Totals:	29	3	7	11
% Energy Score Totals:	19	1.97	4.59	7.21
Transport				
Tra 01 - Public Transport Accessibility	5	5	5	5
Tra 02 - Proximity to Amenities	1	1	1	1
Tra 03 - Cyclist Facilities	2	0	0	0
Tra 05 - Travel Plan	1	0	0	1
Transport Totals:	9	6	6	7
% Transport Score Totals:	8	5.33	5.33	6.22
Water				
Wat 01 - Water Consumption	5	1	3	4
Wat 02 - Water Monitoring	1	1	1	1
Wat 03 - Leak Detection	2	0	1	2
Water Totals:	8	2	5	7
% Water Score Totals:	6	1.5	3.75	5.25
Materials				
Mat 01 - Life Cycle Impacts	5	3	3	4
Mat 02 - Hard Landscaping and Boundary Protection	1	1	1	1
Mat 03 - Responsible Sourcing of Materials	3	1	2	2
Mat 04 - Insulation	2	2	2	2
Mat 05 - Designing for Robustness	1	1	1	1
Materials Totals:	12	8	9	10
% Materials Score Totals:	12.5	8.33	9.38	10.42
Waste				
Wst 01 - Construction Waste Management	4	2	4	4
Wst 02 - Recycled Aggregates	1	0	0	0
Wst 03 - Operational Waste	1	1	1	1
Waste Totals:	6	3	5	5
% Waste Score Totals:	7.5	3.75	6.25	6.25
Land Use & Ecology				
LE 01 - Site Selection	2	1	1	1
LE 02 - Ecological Value of Site and Protection of Ecological Features	1	1	1	1
LE 03 - Mitigating Ecological Impact	2	2	2	2
LE 04 - Enhancing Site Ecology	3	0	0	1
LE 05 - Long Term Impact on Biodiversity	2	0	0	2
Land Use & Ecology Totals:	10	4	4	7
% Land Use & Ecology Score Totals:	10	4	4	7
Pollution				
Pol 01 - Impact of Refrigerants	3	0	2	3

Pol 02 - NOx Emissions	3	0	0	3
Pol 03 - Surface Water Run Off	5	1	4	4
Pol 04 - Reduction of Night Time Light Pollution	1	1	1	1
Pol 05 - Noise Attenuation	1	1	1	1
Pollution Totals:	13	3	8	12
% Pollution Score Totals:	10	2.31	6.15	9.23
Innovation				
Man 01 - Sustainable Procurement	1	0	0	0
Man 02 - Responsible Construction Practices	1	0	0	0
Hea 01 - Visual Comfort	1	0	0	0
Ene 01 - Reduction of CO2 Emissions	5	0	0	0
Ene 04 - Low or Zero Carbon Technologies	1	0	0	0
Ene 05 - Cold Storage	1	0	0	0
Wat 01 - Water Consumption	1	0	0	0
Mat 01 - Life Cycle Impacts	1	0	0	0
Mat 03 - Responsible Sourcing of Materials	1	0	0	0
Wst 01 - Construction Waste Management	1	0	0	0
Wst 02 - Recycled Aggregates	1	0	0	0
Innovation Totals:	15	0	0	0
% Innovation Score Totals:	15	0	0	0
OVERALL TOTALS:		43	67	85
OVERALL SCORE TOTALS:		36.19	56.54	70.76

4.2 Initial BREEAM Results

Following the application of the environmental weightings, the above credits equate to the following BREEAM scores and ratings;

Current: 36.19% - 'Pass'

Scenario 1: 56.54% - 'Very Good'

Scenario 2: 70.76% - 'Very Good' (a score of 'Excellent' though not achieving certain BREEAM 'Excellent' minimum standards).

The following sections explain each of the credits that are included in the current design and in Scenarios 1 and 2.

5.0 Credits required for BREEAM 'Very Good'

The following credits are considered likely to be achieved within the current project scope and with additional 'easy wins' in order to achieve BREEAM 'Very Good';

5.1 Management

Man 01 - Sustainable Procurement

Current

Three credits for the appointment of a BREEAM AP & setting of BREEAM performance targets by the end of RIBA Stage C (or equivalent) and monitoring / regular review of project performance against BREEAM performance targets to the end of RIBA Stage L (or equivalent).

One credit where there will be a commitment to appoint a project team member to monitor commissioning on behalf of the client, where best practice (CIBSE / BSRIA) commissioning codes will be complied with & commissioning will be accounted for in the programme of works. In addition, where complex systems are specified, a specialist commissioning manager should be appointed during the design stage to monitor commissioning until project completion.

Easy wins

One credit where a specialist commissioning agent will be appointed to undertake seasonal commissioning in the first 12 months after building occupation.

Man 02 - Responsible Construction Practices

Current

One credit where there is a commitment to achieve a score of up to 31 points under the Considerate Constructors Scheme.

Man 03 - Construction Site Impacts

Current

One credit for appointing a nominated individual to monitor, record and report data on energy consumption relating to site activities and providing this data to the BREEAM assessor for entry into the BREEAM reporting tool.

One credit for appointing a nominated individual to monitor, record and report data on water consumption relating to site activities and providing this data to the BREEAM assessor for entry into the BREEAM reporting tool.

One credit for appointing a nominated individual to monitor, record and report data on transport (fuel consumption & CO2 emissions) relating to site activities (waste & materials) and providing this data to the BREEAM assessor for entry into the BREEAM reporting tool.

One credit for sourcing all timber used for temporary site uses in accordance with the Government's Timber Procurement Policy.

Man 04 - Stakeholder Participation

Current

One credit where relevant parties have been consulted in the preparation of the building brief, a consultation plan produced, consultation undertaken and feedback provided.

One credit for producing a Building User Guide appropriate to all users of the building and where this is made available to all users.

Easy wins

One credit for producing an access statement in accordance with CABI recommendations

and providing shared facilities that can be accessed by the community in a secure manner (without gaining uncontrolled access to the building).

5.2 Health & Wellbeing

Hea 01 - Visual Comfort

Pre-requisite requirement that all fluorescent lighting be fitted with high frequency ballasts.

Current

One credit where all occupied areas (e.g. offices) will have user controlled glare control (e.g. blinds) and an adequate view out or where no relevant areas are present.

One credit where internal & external lighting will be designed and specified in accordance with relevant CIBSE & BS best practice guidance.

Hea 02 - Indoor Air Quality

Easy wins

One credit where paints / varnishes and the majority of finishes materials will be specified as low VOC in accordance with best practice testing.

Hea 03 - Thermal Comfort

Easy wins

One credit where thermal modelling will be carried out in accordance with best practice CIBSE guidance & to ensure appropriate thermal comfort levels are met.

A further credit where appropriate thermal zoning & control systems will be specified.

Hea 04 - Water Quality

Pre-requisite requirement that all water systems will be designed to HSE ACoP on prevention of legionella

Easy wins

One credit where all water systems will be designed to HSE ACoP on prevention of legionella and no humidification is present. In addition chilled drinking water dispensers should be provided in staff areas.

Hea 05 - Acoustic Performance

Easy wins

One credit for a commitment to design occupied areas to meet best practice (BS8233) internal noise levels.

One credit for a commitment to design relevant building areas to meet best practice (BS8233) reverberation times (may be awarded by default if no relevant areas present).

Hea 06 - Safety and Security

Current

One credit where the site will be designed to have safe cyclist, pedestrian & delivery access.

Easy wins

One credit where a suitable security consultant (ALO or CPDA) will be consulted from RIBA Stage C (or equivalent) and their comments incorporated within the building design to ensure that it will comply with the principles of Secured by Design.

5.3 Energy

Ene 01 - Reduction of CO2 Emissions

At present Building Regs compliance assumed for current design although an improvement in performance of approx 5% over TER will achieve 1 credit.

Ene 02 - Energy Monitoring

Current

One credit where all major energy consuming systems within the building will be sub-metered and all submeters / outputs appropriately labelled.

One credit where all tenanted (or major function areas) will be individually sub-metered with pulsed output for future connection to a BMS.

Ene 03 - External Lighting

Current

One credit where all external lighting will be specified to meet best practice efficacy, colour rendering and control requirements.

Ene 04 - Low and Zero Carbon Technologies

Easy wins

One credit where a feasibility study will be carried out to establish appropriate forms of low & zero carbon energy for the development.

Ene 05 - Energy Efficient Cold Storage

Easy wins

One credit where refrigeration systems will be specified in accordance with best practice, be fitted with components listed on the ECA Energy Technology Product List & be commissioned in accordance with credit Man 01.

Ene 06 - Energy Efficient Transportation Systems

Easy wins

One credit where lifts will be specified based on an analysis of transport demand & energy consumption and selection of the lowest energy consumption option.

A further credit where lifts will be fitted with energy saving measures such as variable speed drives, load sensors and stand-by mode.

5.4 Transport

Tra 01 - Public Transport Accessibility

Current

5 credits are considered achievable on the basis of nearby transport links which result in a PTAL of 6 (AI greater than 25).

Tra 02 - Proximity to Amenities

Current

One credit as the building is located within 500m (by safe walking route) to key amenities such as grocery shop (Tesco on Goodge St) , post box (junction of Howland St & Charlotte St) & cash machine (Lloyds & NatWest on Tottenham Court Road).

5.5 Water

Wat 01 - Water Consumption

Current

Two credits available based on an assumed specification of 6/4 litre dual flush toilets, 6 flush urinals and 4.5 litres/min flow taps. One or two further credits available for the provision of rainwater harvesting supplying 100% of the toilet flushing demand.

Wat 02 - Water Monitoring

Pre-requisite requirement that water meter is fitted.

Current

One credit where a pulsed output water meter will be specified to the mains supply to the building. In addition, any water consuming plant or areas which account for more than 10% of water demand (this is likely to be the kitchens & toilets) must be separately sub-metered and all meters connected to the BMS (where specified).

Wat 03 - Leak Detection

Easy wins

One credit where sanitary supply shut off will be specified to the cold water supply to WCs in all toilet areas.

5.6 Materials

Mat 01 - Life Cycle Impacts

Up to 5 credits are available for the specification of materials for key building elements. Based on the current specification and Green Guide ratings from the architect it is estimated that at least 3 credits are likely to be achieved although this could potentially be increased to 4 credits as more detailed information becomes available on materials specification.

Mat 02 - Hard Landscaping and Boundary Protection

Current

One credit where at least 80% (by area) of external hard landscaping & boundary protection will be specified to have an A or A+ rating under the Green Guide to Specification.

Mat 03 - Responsible Sourcing of Materials

Pre-requisite requirement that all timber be sourced in accordance with UK Government's Timber Procurement Policy.

Current

Up to 3 credits are available for the specification of responsibly sourced (e.g. ISO14001 or certified timber) materials and it is estimated that 1 credit will be achieved.

Mat 04 - Insulation

Current

One credit where all insulation (fabric, services & acoustic) is specified to have a low environmental impact (under the Green Guide to Specification) and good thermal insulation properties.

A further credit where insulation (fabric, services & acoustic) is responsibly sourced from manufacturers having appropriate environmental certification (e.g. ISO 14001 or similar).

Mat 05 - Designing for Robustness

Current

One credit where the building design will incorporate suitable durability measures in areas of high vehicular & pedestrian traffic to prevent damage to vulnerable parts of the building.

5.7 Waste

Wst 01 - Construction Waste Management

Three credits where a SWMP is produced and site waste will be limited to 3.4m³ or 3.2 tonnes per 100m² GIA. It is hoped this will be achieved since the facade will be retained. A further credit where at least 70% by volume (or 80% by weight) of non-hazardous site waste will be diverted from landfill through reuse or recycling.

Wst 03 - Operational Waste

Easy wins

One credit where dedicated space will be provided on site to cater for the segregation / storage of operational recyclable waste and the space will be clearly labelled for use. In addition, if the building is likely to generate significant volumes of recyclable waste a suitable waste compactor / baler should be provided.

5.8 Land Use & Ecology

LE 01 - Site Selection

Current

One credit where at least 75% of the development footprint is on previously developed land.

LE 02 - Ecological Value of Site and Protection of Ecological Features

One credit as the site is deemed of low ecological value or where the construction zone is of low ecological value. All ecological features on/around the site (e.g. the tree on Charlotte St) must be adequately protected during construction.

LE 03 - Mitigating Ecological Impact

Two credits will be achieved as the ecological impact of development will be species neutral.

5.9 Pollution

Pol 01 - Impact of Refrigerants

Two credits where cooling is specified it will need to have Direct Effect Life Cycle CO₂ equivalent emissions (DELCO₂e) of less than 100 kgCO₂e/kW cooling capacity. One credit where a BREEAM compliant leak detection system is installed.

Pol 03 - Surface Water Run Off

Current

One credit where the potential for watercourse pollution is prevented by the specification of petrol interceptors / oil interceptors. *Assumed to be achieved by default in this case.*

Easy wins

Two credits where a site specific flood risk assessment will be carried out and the site is found to be in an area considered to be of low risk of flooding. Environment Agency maps

show the site is in a low risk area.

One credit where an appropriate consultant is appointed to demonstrate that surface water run-off post development is limited to that prior to development.

Pol 04 - Reduction of Night Time Light Pollution

Current

One credit where external lighting (levels, reflectance and controls) has been designed in accordance with the ILE guidance on prevention of night time light pollution.

Pol 05 - Noise Attenuation

Current

One credit where building plant is specified to ensure that external noise levels do not increase by more than 5dB as a result of development

6.0 Further credits achievable under Scenario 2

The following credits are outside the current project scope but are deemed potentially achievable however they are likely to require more significant changes to the design and/or cost than those outlined in Scenario 1;

Man 02 - Responsible Construction Practices

Current

Two credits where there is a commitment to achieve a score of more than 32 points under the Considerate Constructors Scheme.

Man 03 - Construction Site Impacts

One credit where the contractor will be certified under an EMS (such as ISO 14001) and commit to implement Environment Agency best practice pollution prevention practices on site.

Hea 02 - Indoor Air Quality

One credit where post completion VOC testing will be carried out in accordance with best practice standards and any non-compliance rectified.

Ene 01 – Reduction in Carbon Emissions

At present Building Regs compliance assumed for current design although an improvement in performance of approx 5% over TER will achieve 1 credit.

Ene 05 - Energy Efficient Cold Storage

A further credit where refrigeration systems will also demonstrate a saving in indirect greenhouse gas emissions.

Ene 08 - Energy Efficient Equipment

Two credits where energy efficient equipment is specified for the development e.g. kitchen equipment.

Tra 03 – Travel Plan

One credit where a Travel Plan is produced which influences the design of the building/landscaping.

Wat 03 - Leak Detection

One credit where a leak detection system is installed.

Mat 01 - Life Cycle Impacts

Up to 5 credits are available for the specification of materials for key building elements. Based on the current specification and Green Guide ratings from the architect it is estimated that at least 3 credits are likely to be achieved although this could potentially be increased to 4 credits as more detailed information becomes available on materials specification.

LE 04 - Enhancing Site Ecology

One credit where a suitably qualified ecologist will be appointed to produce an ecological report on the site prior to development commencing and the client commits to implement their general recommendations. It may be possible to utilise the area in the lightwell.

LE 05 - Long Term Impact on Biodiversity

Two credits where a suitably qualified ecologist will be appointed prior to works commencing to ensure that all relevant EU/UK legislation is complied with, a landscape management plan is produced and 4 of the additional BREEAM LE 05 requirements met.

Pol 01 - Impact of Refrigerants

One credit where a BREEAM compliant leak detection system is installed.

Pol 02 – NOx Emissions

Three credits could be awarded where a gas boiler is the primary heating and hot water system and this produces less than 40mg NOx/kWh.