

Premier Inn Kidlington

BREEAM Pre-Assessment Report

Prepared for: Hill Street Holdings Knowles Farm Wycke Hill Maldon CM9 6SH

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Description	Revision	Date
Pre-Assessment Authored by A Watkins	1	28 th June 2017

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EXECUTIVE SUMMARY

This BREEAM (Building Research Establishment Environmental Assessment Method) Pre-Assessment report has been commissioned to identify the most suitable combination of BREEAM credits to meet the Very Good level required by Whitbread Premier Inn.

The proposed solution shall be included with the tender requirements to allow the main contractor to allow sufficient resources to achieve the required Very Good rating.

During the second quarter of 2017 the BREEAM Assessor organisation Sustainable Construction Services (SCS) evaluated the most suitable combination of BREEAM credits required to meet the Very Good level.

The design team was liaised with and the available project information was interrogated.

The project team includes:

- Adam Watkins Sustainable Construction Services
- Phil Goodman Reach Project Management
- Lauren Bates Hill Street Holdings

A "Base" scenario and an "Extras" scenario have been established to recognise the flexibility of the assessment as follows:

• "Base" scenario: Includes only key credits for which can be firmly targeted.

"Base" scenario for Very Good 56.97%

• "Extras" scenario: Includes credits which cannot be firmly targeted at this stage, but may be able to be achieved with further design development and/or cost.

"Extras" if required for Very Good 61.38%

The "Base" scenario indicates a Very Good rating is achievable without major re-design.

The "Extras" scenario has been included to provide future contingency to help the design team remain on target for Very Good in the unforeseen event that credits included in the "Base" scenario need to be withdrawn.

An example of an "Extra" credit is Man O4 for undertaking a thermographic survey of the building envelope and remediating any areas of excessive heat loss. Once the detailed design is complete it will be known whether a credit like this will need to be targeted, and it can be incorporated into the main contract if needed.

Based on the findings of this pre assessment, the project is on target to obtain a BREEAM Very Good rating, and thus is proceeding in line with the requirements of Whitbread Premier Inn.



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1. INTRODUCTION

1.1. BACKGROUND

This BREEAM pre-assessment report assesses the likely performance of this development against the BREEAM 2014 'other buildings' criteria as required by the client Whitbread Premier Inn.

Historically there has been a dedicated Whitbread 2008 Premier Inn bespoke methodology for assessing Premier Inn buildings, however the BRE have discontinued this scheme so that any new Premier Inn project must be assessed against the latest BREEAM 2014 methodology.

The predicted BREEAM score depends on a variety of factors including technical specification of sustainable design features, site location, site layout, pre development site properties, findings of specialist reports and early adoption of sustainable practices.

This assessment is based primarily on a strategy similar to that followed by the design team on previous BREEAM Very Good Premier Inn developments, which allows the design team to use their experience and strategies used previously towards meeting the required rating.

The end client Whitbread has provided their 'Turnkey' specification for the project which is preloaded with many BREEAM compliant clauses which helps 'hard-wire' BREEAM Very Good into the project design from an early stage.

The BREEAM registration for this project has been made and the reference number is BREEAM-0068-3482.



1.2. DESCRIPTION OF PROPOSED DEVELOPMENT

This is a 101 bed new build Premier Inn hotel building which has a ground floor restaurant.

The site is located within the new proposed 'Oxford Technology Park', near Kidlington. The site is surrounded by Oxford Motor Park to the East, arable fields to the South, an ambulance station to the West and London Oxford Airport to the North.

In addition to the 101 guest rooms, the building will comprise the following function areas:

Foyer and reception area providing:

- o Lobbied customer entrance
- o General manager's office
- o Office
- o Luggage store
- o Main staircase and passenger lifts
- o Reception check-in area
- Waiting and vending areas
- o Internet desk area

Back of house area providing:

- o Kitchen
- o Walk-in freezer
- o Chillers
- o Dry goods store
- o Beer store
- o Staff room and staff wcs/changing area
- o Wine/spirits store or cage
- o Glass wash
- o Ice machine area
- o Staff shower room
- o Delivery level linen storage provision
- o Housekeepers room
- o Consumables cupboard

Front of house area providing:

- o Bar servery
- o Bar seating area
- o Breakfast buffet area
- o Restaurant seating area
- Fixed furniture and screens

Externally there will be car parking to cater for guests, soft landscaping and some planting of trees and shrubs.

There is an external service yard where deliveries and collections will take place.



2. ABOUT BREEAM

2.1. BACKGROUND TO BREEAM

BREEAM is a voluntary scheme that aims to quantify and reduce the environmental burdens of buildings by rewarding those designs that take positive steps to minimise their environmental impacts. Projects are assessed using a system of credits. The credits are grouped within the following categories:

- Management
- Health and Wellbeing
- Energy
- Transport
- Water
- Materials
- Waste
- Land Use and Site Ecological Value
- Pollution

The assessment process results in a report covering the issues assessed together with a formal certification giving a rating on a scale of PASS, GOOD, VERY GOOD, EXCELLENT and OUTSTANDING.

2.2. BREEAM SCORING

Within each of the 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, as shown below, 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 environmental weightings are as follows:

Issue Category	Issue Weighting
Management	12%
Health and Wellbeing	15%
Energy	15%
Transport	9%
Water	7%
Materials	13.5%
Waste	8.5%
Land Use and Ecology	10%
Pollution	10%



Up to a further 10% (additional) is available over and above the basic BREEAM percentage score for designs that include particularly innovative solutions.

The BREEAM rating bands are as follows:

Rating	Score
PASS	30%
GOOD	45%
VERY GOOD	55%
EXCELLENT	70%
OUTSTANDING	85%

2.3. BREEAM MANUALS ONLINE

The BREEAM 2014 technical manuals can be downloaded via this website:

www.breeam.org

or

http://www.breeam.com/BREEAMUK2014SchemeDocument/#_frontmatter/cover_nd_all.htm%3F TocPath%3D____1



3. OUTLINE PREDICTION

3.1. BREEAM PREDICTED SCORE

It is understood that the project requires a BREEAM Very Good rating, therefore a suitable combination of credits to obtain this rating was established with the design team during the preassessment stage. This is the "Base" scenario which includes only key credits which are envisaged to be achievable.

In addition to this, some extra credits were identified as being potentially achievable with further work and potentially extra cost, and the addition of these credits forms the "Extras" scenario. This includes credits which cannot be firmly targeted at this stage, but may be able to be achieved with further design development.

A "Base" scenario and an "Extras" scenario have been established to recognise the flexibility of the assessment as follows:

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"Base" scenario for Very Good 56.97%

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An example of an "Extra" credit is Man O4 for undertaking a thermographic survey of the building envelope and remediating any areas of excessive heat loss. Once the detailed design is complete it will be known whether a credit like this will need to be targeted, and it can be incorporated into the main contract if needed.

Based on the findings of this pre assessment, the project is on target to obtain a BREEAM Very Good rating, and thus is proceeding in line with the requirements of Whitbread Premier Inn.



3.2. COMMENTS ON PERFORMANCE

MANAGEMENT

The management credits focus mainly on how the main contractor will address the construction phase of the project as well as the measures that clients and project teams address in the early stages of the project.

In order to achieve a Very Good rating, best practice performance will be required in terms of project management and construction site management. Many of the requirements of BREEAM are now adopted as standard by the client and by most main contractors as part of their Environment Management Systems (EMS).

Some of the features contributing to the BREEAM score in this section are:

- A Building User Guide which shall be available and relevant to both staff and guests
- Responsible construction practices undertaken by the main contractor such as energy and water monitoring and the operation of environmental materials policy
- A considerate Constructor's score of 35 with at least 7 in each section
- Well planned commissioning of building services to help systems operate most efficiently

For management credits which will be the responsibility of the main building contractor, it is suggested that a contractual Preliminary Specifications document is used to require the main building contractor to achieve compliance.

At this pre assessment stage, the management credits required for the Very Good rating are seen as achievable by the project team based on previous Premier Inn project performance.

If further credits are required in the future, the project team may consider undertaking a thermographic survey of the building envelope and remediating any areas of excessive heat loss.

HEALTH AND WELLBEING

The credits within this section relate to measures that can be taken to improve the comfort of the building user once the building becomes occupied. The measures allowed for within this preassessment include:

- High quality lighting design and local thermal controls in all occupied areas
- Maximised visual comfort through glare control and high frequency lighting
- Overheating to be prevented through good design
- Adequate levels of water safety will be considered
- Adherence to the high standards of acoustic insulation as required by Whitbread
- Low VOC finishing materials to help improve indoor air quality
- VOC testing of the completed building to verify performance

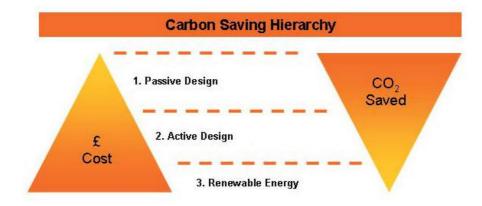
The resultant building should be a healthy place for work for all staff and an attractive comfortable space for guests.

There is also the potential for an additional credit dependent on the layout of the external areas, provision of cycle paths and traffic calming measures.



ENERGY

The general approach to energy that should be adopted on the development should be hierarchical. The first step should be to minimise energy use wherever possible through the building fabric. Following this, the focus will then turn to building services performance. Finally, on-site low and zero carbon technologies will be considered to reduce CO_2 emissions further. This approach will be adopted as it makes sense both in terms of conservation of energy and commercial viability.



It is noted that the developer Whitbread Premier Inn requires this project to achieve a significant reduction in carbon dioxide when compared with the notional value of Part L. Generally this is achieved using a VRF heat pump system to provide heating and cooling to guest rooms and should result in a high energy performance.

Under credit Ene1 an estimate of credits has been made based on previous experience of similar buildings and allows for possible improvement in the future when the building energy modelling outputs are available.

It should be noted that while Premier Inn projects have historically had the Ene O1 performance measured using the energy performance certificate; it is now down using the Part L2A BRUKL report.

Other features agreed for inclusion towards energy credits include:

- Sub-divided energy metering
- Passive design analysis to maximise the amount of energy savings from passive measures
- Low energy external lighting design
- Low and zero carbon feasibility study to back up the specification of the VRF systems
- Energy efficient lifts



TRANSPORT

This section assesses the development in terms of how it encourages the use of sustainable methods of transport, including walking, cycling and public transport.

There are some public transport links to this site, and further links are planned through the wider development of this site, although at present the access to busses and trains is below average. The result of this is that more BREEAM credits will be needed elsewhere in the assessment as compensation.

To further encourage staff and visitors to avoid single occupancy car travel to site, there will be public cycle racks provided near the building, and guests would of course have access to showers within their rooms.

A Travel Plan is expected to be produced at an early stage towards achieving credit TraO5, pending adoption of the travel plan recommendations which the client and main contractor should review together.

WATER

Most of the credits in this section will need to be achieved via the provision of low water use fittings within the en-suite bathrooms and toilet facilities that will be used by building occupants.

In summary, these are the measures proposed towards BREEAM water credits:

- Low flush WCs
- Low water use taps
- Low water flow shower heads
- Pulsed water meters
- Water sub-metering of the kitchens
- Absence of planting requiring irrigation
- Rainwater harvesting is to be considered further as the design progresses

Water metering is a key minimum standard of BREEAM which will be complied with be metering both the incoming supply and the kitchens which would be responsible for a significant level of demand. Building occupiers would then be able to monitor their consumption and identify hot spots which can then be reduced through good management.

Specification of native planting is a simple but very effective way to reduce water consumption which will be adopted for the soft landscaped areas of the site.



MATERIALS

The approach with materials is to minimise the impact of constructing the building on the environment. The project team will develop an environmental materials and procurement strategy that is based on the design team selecting materials with:

- Appropriate durability
- Low maintenance requirements
- Adaptability and flexibility for future changes in operational use
- Ability to be disassembled and re-used at the end of building life
- Purchasing of composite materials will be minimised to enhance the re-use and recycling potential of the materials at their end of life
- Maximising lean construction i.e. minimising the amount of materials used in construction

Materials which meet the following requirements will generally be preferred:

- Certified sustainable sources (e.g. FSC or PEFC certified timber)
- Low embodied energy and low environmental and health impact
- 'A+' rated materials as specified in the BRE 'Green Guide to Specification'
- Reclaimed, pre-fabricated and re-usable/recyclable materials (high recycled content)
- Locally and legally sourced

The Contractor will also be asked to adhere to the following:

- Ensure they have an environmental materials policy, used for sourcing of construction materials to be utilised on site
- Ensure they use sustainable or recycled timber in all cases where timber is used
- Ensure building materials, especially steel and concrete are responsibly sourced under ISO14001 or BES 6001 Very Good

It is recommended the architect undertakes an early stage review of the likely building materials against the BRE Green Guide to Specification prior to planning to maximise the amount of A and A+ rated materials. The design and build contractor will build on this and refine the materials selection while maintaining high Green Guide ratings.

A good practice level of responsible sourcing of materials has been assumed in relation to credit Mat O3 but it is recognised that an extra credit could potentially be achieved by the main contractor, especially if they source the majority of their materials from BES6001 suppliers.

As part of the latest BREEAM 2014 requirements, the project team will also undertake reviews of materials efficiency (waste reduction) at each RIBA stage to maximise any opportunities.



WASTE

There will be three distinct strands to the waste strategy. The first will be to avoid the generation of construction waste to meet a target of 6.5 tonnes or less of construction waste generation.

The second is to divert at least 80% by weight of construction waste from landfill to be reused or recycled elsewhere. A waste management plan will be developed for the site that will promote the strategy of reduce, reuse and then recycle.

It is recommended that a contractual Preliminary Specifications document is produced to require the main building contractor to achieve compliance with the above waste generation and diversion from landfill benchmarks.

The third major waste issue in BREEAM is to provide sufficient facilities to maximise recycling of operational waste. Ensuring that operational waste can be dealt with means ensuring space is allocated for appropriate facilities to manage waste and recycling on site.

The amount of space required will need to take into account the size of the proposed building and that catering is provided, which results in a minimum requirement of 4sqm per 1,000sqm net internal floor area.

It is clear from the outline specification that the bin store will be substantial in size, but the design team should review the BREEAM waste storage requirements in detail to ensure compliance is maintained.

SITE ECOLOGICAL VALUE

One of the biggest challenges with this project is that the site is greenfield, and therefore achievement of BREEAM credits understandably becomes more difficult.

It has been estimated that a total of five ecology credits could to be achieved due to the following:

- Five year landscape and habitat management plan to be implemented on site
- Where present, ecologically valuable features on site to be protected
- Minor negative change in native floral species density following the proposed development
- Provision of general ecological enhancement features (to be confirmed by ecologist in due course usually bird/bat boxes and other such enhancements)
- Main contractor to undertake activities on site in line with the recommendations of the ecologist

The contractor will be required to carefully monitor site activities in order to implement the ecologist's recommendations, and a landscape and habitat management plan will also be required.

The contractor will also be required to nominate a 'Biodiversity Champion' to personally be responsible for monitoring site ecology throughout construction.

POLLUTION

The site has been checked on the Environment Agency Flood Map and is shown to be outside a tidal or river flood zone. A flood risk assessment further confirms maximum credits can be awarded for avoiding development on a site with flood risk.

Night time light pollution will be avoided as much as possible by using cut-off luminaires, daylight and time switch controls to limit the impact of the external lighting. In addition, the M&E designers are investigating how the external signage can be designed to limit light pollution.

There are a variety of credits which will not be achieved in this section including credits for low GWP building services refrigerant, and low NOx emissions relating to space heating production. Although these credits will not be achieved, the space heating and cooling strategy which prevents them being achieved, provides added benefit elsewhere in the BREEAM assessment, for example in the energy section under credits Ene1 and Ene4.

INNOVATION / EXEMPLARY PERFORMANCE CREDITS

There are two ways in which BREEAM Innovation credits can be achieved. The first is to comply with one of the "standard" credits for exemplary performance identified within the BREEAM documentation. The second is to make an application to the BRE to award an additional 'innovation' credit based on submitted evidence of specific features within the design that are considered to be particularly innovative.

The two exemplary performance credits which could be targeted on this project include 40 points under Considerate Constructors Scheme, and collection of 3 years of key operational building data and reporting to the BRE.

3.3. PRE-ASSESSMENT TRACKER

BREEAM Summary Tracker - Design StageProject29213 Kidlington Premier InnSchemeBREEAM 2014 New ConstructionDate28.06.2017ByA Watkins



	Key:	Status	Base	Extras
	Opportunity	Rating	Very Good	Very Good
	Risk	Score %	56.97	61.38
Credit Ref	Credit Name	Available	Base	Extras
Management				
Each Credit is	worth 0.57%			
	Stakeholder Consultation [Project Delivery]	1	1	
Man O1	Stakeholder Consultation [Third Party]	1	1	
Mari Or	Sustainability Champion [Design]	1	1	
	Sustainability Champion [Monitoring Progress]	1	1	
	Elemental Life Cycle Cost	2	0	
Man O2	Component Level LCC Plan	1	0	
	Capital Cost Reporting	1	1	
	Environmental Management	1	1	
Man O3	Sustainability Champion	1	1	
Ivian US	Considerate Construction	2	1	
	Monitoring of Construction Site Impacts	2	2	
	Commissioning & Responsibilities	1	1	
Man O4	Commissioning Building Services	1	1	
Maii 04	Testing & Inspecting Building Fabric	1	0	1
	Handover	1	1	
	Aftercare support	1	1	
ManO5	Seasonal Commissioning	1	1	
	Post Occupancy Evaluation	1	1	

Health & Well-being				
Each Credit is	worth 0.83%			
	Glare Control	1	1	
Hea O1	Daylighting	1	0	
riea Oi	View Out	1	0	
	Internal & External Lighting	1	1	
	Indoor Air Quality Plan	1	1	
	Ventilation Air Quality	1	0	
Hea O2	VOC Specification	1	1	
	VOC Testing	1	1	
	Potential Adaptation for Nat Vent	1	0	
Hea O4	Thermal Modelling	1	1	
	Climate Change Modelling	1	1	
	Thermal Zoning and Control	1	1	

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	Key:	Status	Base	Extras
	Opportunity	Rating	Very Good	Very Good
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lef	Credit Name	Available	Base	Extras

Credit Ref	Credit Name	Available	Base	Extras
Hea O5	Acoustic Performance	4	0	
	Safe Access	1	0	1
Hea O6	Security of Site & Building	1	1	

Energy				
Each Credit is	worth 0.68%			
Ene O1	Reduction of Energy Use and Carbon Emissions	12	6	
Ene O2	Energy Sub Metering	1	1	
Ene O3	External Lighting	1	1	
	Passive Design Analysis	1	1	
Ene O4	Free Cooling	1	0	
	Low & Zero Carbon Feasibility Study	1	1	
Ene O6	Lifts - Energy Consumption	1	1	
Eneloo	Lifts - Energy Efficient Features	2	2	
Ene O8	Energy Efficient Equipment	2	0	

Transport					
Each Credit is worth 1%					
Tra O1	Public Transport Accessibility	3	1		
Tra O2	Proximity to Amenities	1	0		
Tra O3	Cycle Storage	1	0	1	
na Os	Cyclist Facilities	1	0	1	
Tra O4	Maximum Car Parking Capacity	2	0		
Tra O5	Travel Plan	1	1		

Water					
Each Credit is worth 0.78%					
Wat O1	Water Fittings	5	3		
Wat O2	Water Monitoring	1	1		
Wat O3	Solenoid Valves	1	0		
war OS	Leak Detection System	1	1		
Wat O4	Water Efficient Equipment [irrigation]	1	1		

BREEAM Summary Tracker - Design Stage

Project29213 Kidlington Premier InnSchemeBREEAM 2014 New ConstructionDate28.06.2017ByA Watkins



	Key:	Status	Base	Extras
	Opportunity	Rating	Very Good	Very Good
	Risk	Score %	56.97	61.38
Credit Ref	Credit Name	Available	Base	Extras
Materials				
Each Credit is v	worth 0.96%			
Mat O1	Life Cycle Impacts	6	4	
Mat O2	Hard Landscaping and Boundary Protection	1	1	
Mat O3	Sustainable Procurement Plan	1	1	
Iviat OS	Responsible Sourcing of Materials	3	1	
Mat O4	Insulation	1	1	
Mat O5	Designing for Durability and Resilience	1	1	
Mat 06	Material Efficiency	1	1	

Waste				
Each Credit is worth 1.06%				
Wst O1	Construction Resource Efficiency	3	1	
	Diversion of Resources from Landfill	1	1	
Wst O2	Recycled Aggregates	1		
Wst O3	Operational Waste	1	1	
Wst O5	Adaptation to Climate Change	1	1	
Wst O6	Functional Adaptability	1	1	

Land Use & Ecology				
Each Credit is worth 1%				
LE O1	Previously Occupied Land	1		
	Contaminated Land	1		
LE O2	Ecological Value of Site	1		
	Protection of Ecological Features	1	1	
LE O3	Minimising Impact on Existing Site Ecology	2	1	
LE O4	Ecologist's Report & Recommendations	1	1	
	Increase in Ecological Value	1	0	
LE O5	Long Term Impact on Biodiversity	2	2	

BREEAM Summary Tracker - Design Stage
Project 29213 Kidlington Premier Inn
Scheme BREEAM 2014 New Construction
Date 28.06.2017
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	Key:	Status	Base	Extras	
	Opportunity	Rating	Very Good	Very Good	
	Risk	Score %	56.97	61.38	
Credit Ref	Credit Name	Available	Base	Extras	
Pollution					
Each Credit is worth 0.77%					
Pol O1	Impact of Refrigerant	2	0		
	Refrigerant Leak Detection	1	0		
Pol O2	NOx Emissions	3	0		
Pol O3	Flood Risk	2	2		
	Surface Water Run Off	2	1		
	Minimising Watercourse Pollution	1	0		
Pol O4	Reduction of Night Time Light Pollution	1	1		
Pol O5	Noise Pollution	1	1		

Exemplary Credits				
Each Credit is worth 1%				
Man O3	Responsible construction practices CCS 40	1	0	1
Man O5	Aftercare 3yrs data collection	1	1	
Hea O1	Visual comfort	1		
Hea O2	Indoor air quality	2		
Ene O1	Reduction of energy use and carbon emissions	5		
Wat O1	Water consumption	1		
Mat O1	Life cycle impacts	3		
Mat O3	Responsible sourcing of materials	1		
Wst O1	Construction waste management	1		
Wst O2	Recycled aggregates	1		
Wst O5	Adaptation to climate change	1		

"Disclaimer: This credit tracker is meant to be used as document for tracking the BREEAM credits that have been targeted and withheld. It is not a comprehensive list of the BREEAM actions.

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