

RIDGE

PROPERTY & CONSTRUCTION CONSULTANTS

VAHNEA STUDENT RESIDENCES, BOGNOR REGIS BREEAM PRE ASSESSMENT REPORT

1 October 2018

Prepared for

Cover Storey Architects
The Studio
18 St Georges Avenue
Havant
PO9 2RX

Prepared by

Ridge and Partners LLP
Partnership House
Moorside Road
Winchester
Hampshire
SO23 7RX

VERSION CONTROL

Project Name Cover Storey – Vahnea Student Residences

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1. INTRODUCTION

1.1 General

Ridge and Partners LLP have been appointed to provide BREEAM pre assessment services for the new proposed Vahnea Student Residences in Bognor Regis.

The aim of this appointment is to provide guidance to the project design team and demonstrate the project's commitment to the issues of sustainable building design, construction and operation.

This report has been written by a qualified Building Research Establishment Environmental Assessment Method (BREEAM) assessor and advisory professional (AP) to provide guidance and information on the following:

- An overview of the BREEAM process
- The mandatory credits that are required to achieve each BREEAM rating
- Early stage actions to be considered
- The requirements for specialist consultants

The author of this report is Abby Bartlett, Principal Sustainability Consultant (BRE Reg. RIPA – AB41).

1.2 Project description

The proposal is for a part conversion and extension of the existing Wilko store to provide 6 additional storeys over the existing rooftop, to provide for up to 104 student residential units, with access from Bedford Street, associated servicing and ancillary accommodation. An entrance and stair core extension to the existing building will provide access to the new site from Bedford Street. It is intended that the proposed development is assessed under BREEAM New Construction 2014 with a target certification rating of 'Excellent'.

1.3 BREEAM New Construction Classification

Project	:	Vahnea Student Residences
Project type	:	BREEAM UK New Construction (2014)
Registration No	:	BREEAM-0073-2818
Building type	:	Multi-Residential Accommodation
Building subtype	:	Multi-Residential – Halls of residence

1.3.1. Project Team

DISCIPLINE	COMPANY
Architects	Cover Storey Architects
Quantity Surveyors	Ridge and Partners LLP
Town Planning Consultants	Harwood Savin Ltd
Mechanical & Electrical Engineers	Ridge and Partners LLP
Structural Engineers	Campbell Reith
Traffic & Transport	Ridge and Partners LLP
BREEAM Assessor	Ridge and Partners LLP

2. BREEAM PROCESS

2.1 Overview

BREEAM is a performance based assessment method and certification scheme for new buildings. The primary aim of the BREEAM process is to mitigate the life cycle impacts of new buildings on the environment in a robust and cost effective manner. This is achieved through integration and use of the scheme by clients and their project teams at key stages in the design and procurement process. This enables the client, through the BREEAM Assessor and the BRE Global certification process, to measure, evaluate and reflect the performance of their building against best practice in an independent and robust manner. This performance is quantified by a number of individual measures and associated criteria stretching across a range of environmental issues which is ultimately expressed as a single certified BREEAM rating.

The potential BREEAM ratings for a building are as shown below:

Rating	Percentage Score	Equivalent performance
Outstanding	≥85	Less than 1% of UK new non-domestic buildings
Excellent	≥70	Top 10% of UK new non-domestic buildings
Very Good	≥55	Top 25% of UK new non-domestic buildings
Good	≥45	Top 50% of UK new non-domestic buildings
Pass	≥30	Top 75% of UK new non-domestic buildings
Unclassified	<30	Failed to meet minimum BREEAM criteria

Table 1 – BREEAM Rating Benchmarks

In order to achieve a BREEAM rating for a building, the client must appoint an independent person, accredited by the BRE, to act as an assessor. A list of all accredited assessors is available on the Green Book Live (www.greenbooklive.com).

The assessor's role will typically include the following:

- Provision of a Pre assessment Report with input from the design team which will summarise the anticipated approach for achieving the targeted rating
- Register the project with the Building Research Establishment (BRE) who administers the scheme
- Assess evidence provided by the client and design team to validate targeted BREEAM criteria
- Collate a Design Stage Assessment Report for submission to BRE, feeding back to the team any QA issues that arise
- Issue Interim Certificate and report on completion of QA
- Assess evidence provided by the construction team to validate targeted BREEAM criteria
- Visit the completed site and collate photographic and other evidence to show that the building has been built to incorporate those features that were agreed as part of the design stage assessment
- Collate a Post Construction Assessment Report for submission to BRE, feeding back to the team any QA issues that arise
- Issue Final Certificate and report on completion of QA

Once the final certificate has been issued, the details of the building's final BREEAM score will also be listed on GreenBook Live (www.greenbooklive.com) which is publically available.

It should be noted that where appointed as a BREEAM assessor Ridge will endeavour to guide the design team throughout the assessment process regarding the evidence requirements to ensure that the evidence provided is in a format that is acceptable by BRE. Please be aware that Ridge are bound by our licence with BRE to assess each item of evidence against the specified criteria: for a successful assessment it is essential that the design team manage themselves to provide any and all evidence requested in a timely manner to validate the targeted credits.

Design teams should be aware that typically it takes approximately 6 weeks for the BRE to consider the evidence provided in assessment reports as part of their QA process, therefore there is frequently a substantial delay between submitting a report and achieving the certification, particularly if any QA issues are identified. There is an option to undertake fast track QA for an additional fee.

2.2 Assessment Timeline

Figure 1 below provides a comparison of the RIBA outline plan of work with the BREEAM assessment stages.

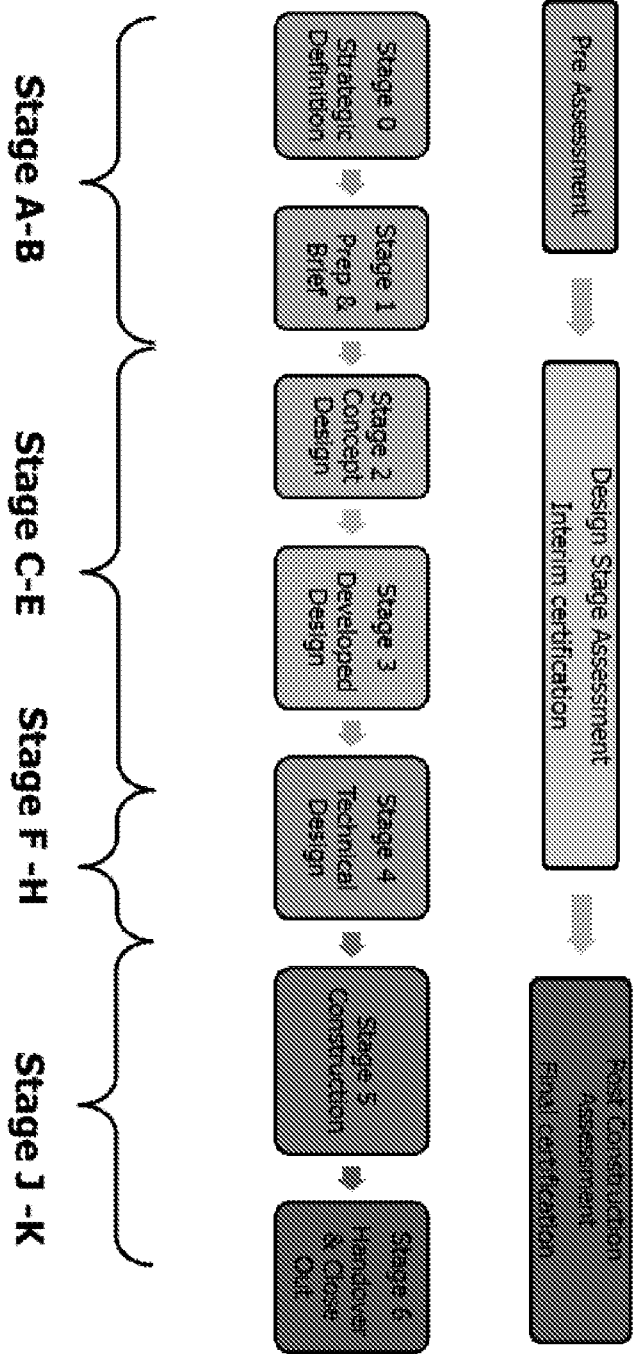


Figure 1 – BREEAM assessment and certification stages and the RIBA Outline plan of works

2.3 Scoring

The BREEAM assessment is made up of a total of 9 separate categories, each containing a variety of different environmental issues. Although some of the issues are mandatory for specific scores, as summarised in the next section, the majority are tradable i.e. the team can choose to target them or not depending on their suitability and achievability for the assessed building.

Each of the nine categories carries an associated weighting which is applied to credits achieved in that category to calculate the total score for the assessed building. The weightings vary depending on the type of building being assessed and whether certain elements are included or excluded from the scheme e.g. if a lift or escalator are not part of the proposals then Ene 06 – Energy Efficient Transportation Systems will be filtered out of the assessment and the weightings updated accordingly, similarly shell and core developments will have certain criteria filtered out as they are beyond the scope of the development.

As a summary the fully fitted scheme weightings are typically as follows:

ENVIRONMENTAL CATEGORY	WEIGHTING
Management	12%
Health & Wellbeing	15%
Energy	15%
Transport	9%
Water	7%
Materials	13.5%
Waste	8.5%
Land Use & Ecology	10%
Pollution	10%
Innovation (additional)	10%

Therefore when design teams are considering tradable credits it is important to remember that the loss of a single credit in the energy or health and wellbeing category would have a much larger impact on the overall score than the loss of a water or waste credit.

2.4 Mandatory Requirements

Whilst most BREEAM credits are tradable and can be targeted in various configurations to achieve the required overall score, there are minimum requirements set to achieve certain BREEAM ratings. For example to achieve a BREEAM 'Excellent' rating the following credits must be achieved, in addition to achieving a score of ≥70% overall. Table 2 below highlights the mandatory requirements to achieve a 'Excellent' rating in green:

BREEAM issue	Pass	Good	Very Good	Excellent	Outstanding
Man 03: Responsible construction practices	None	None	None	One credit (Considerate construction)	Two credits (Considerate construction)
Man 04: Commissioning and handover	None	None	None	Criterion 10 (Building User Guide)	Criterion 10 (Building User Guide)
Man 5: Aftercare	None	None	None	One credit (Seasonal commissioning)	One credit (Seasonal commissioning)
Ene 01: Reduction of energy use and carbon emissions	None	None	None	Five credits	Eight credits
Ene 02: Energy monitoring	None	None	One credit (First sub-metering credit)	One credit (First sub-metering credit)	One credit (First sub-metering credit)
Wat 01: Water consumption	None	One credit	One credit	One credit	Two credits
Wat 02: Water monitoring	None	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only
Mat 03: Responsible sourcing of materials	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only	Criterion 1 only
Wst 01: Construction waste management	None	None	None	None	One credit
Wst 03: Operational waste	None	None	None	One credit	One credit
LE 03: Minimising impact on existing site ecology	None	None	One credit	One credit	One credit

Table 2 – BREEAM New Construction 2014 Minimum Standards

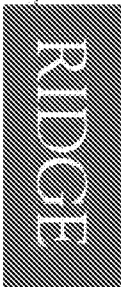
2.5 Evidence

Throughout a BREEAM assessment the appointed BREEAM Assessor will require evidence to validate the achievement of the various targeted criteria. There are a few issues where specific items are required and where this is the case these will be listed in the BREEAM technical manual, for example Ene 01 requires a copy of the Building Regulations Output Document from approved software. However, for the majority of issues the evidence requirements have been left as deliberately flexible to minimise the amount of documentation that must be produced to satisfy the BREEAM requirement only.

As part of the assessment process it is up to the project team to provide documentation that they believe confirms compliance with the specific criteria however generally speaking the following documents could be considered for submission as evidence;

- Meeting minutes and agendas
- Drawings
- Specifications
- Letters / email correspondence
- Project programmes
- Certificates
- Specialist reports – where necessary the author may need to confirm that they meet the BREEAM requirements of suitably qualified, this is outlined in more detail in a later section
- Specialist software outputs
- Confirmation of intent from client / developer if detailed information is not available due to the stage of the project

In all instances it is important that there is a robust audit trail for the documentation provided i.e. it should be clear who it has come from and when, there should also be an obvious indication of the project it is referring to. If relevant the documentation should also be signed (for example if it is an official BRE checklist or a letter of confirmation from a member of the team).



3. EARLY STAGE ACTIONS

It is recommended that the client and design team review all available credits as early as possible in the project, as they can become difficult or indeed impossible to achieve if considered later in the design stages of the development as it is generally easier to incorporate changes into the design before it has developed too far.

The BRE recognise this within the BREEAM New Construction 2014 methodology and as such there are various time bound issues that can be targeted which are summarised in Table 3 below;

RIBA Stage	Credit Reference	Notes
Stage 01	Man 01 Advisory Professional	Advisory Professional to be appointed by Stage1
	Ene 07 Energy Efficient Lab Systems	Client engagement to be sought at this stage to determine occupant requirements and define lab performance criteria where applicable
	Mat 06 Material Efficiency	Material efficiency opportunities identified and measures implemented
	Le 04 Enhancing Site Ecology	Suitably Qualified Ecologist (SQE) appointed to advise on early stage site layout and development density to maximise ecological enhancements
	Le 05 Long Term Impact on Biodiversity	SQE to consider additional measures – if measure 4 is applicable then SQE to seek local biodiversity expertise to help identify species of local biodiversity importance on site and ensure proposals support local priorities.
Stage 02	Project delivery stakeholder consultation	
	Man 01 Project brief and design	Third party stakeholder consultation
		BREEAM target to be formally defined with Sustainability Champion
	Man 02 Life cycle cost and service life planning	An initial Elemental life cycle cost (LCC) report
	Hea 06 Safety and Security	Security Needs Assessment by SQSS
	Ene 04 Low carbon design	Develop a passive design analysis and report

Stage 03		Complete a free cooling feasibility analysis and report
		Complete a Low and Zero Carbon technologies feasibility study and report
	Mat 06 Material Efficiency	Material efficiency opportunities identified and measures implemented
	Wst 05 Adaption to climate change	Conduct a climate change adaptation strategy appraisal for structural and fabric resilience
	Wst 06 Functional adaptability	Conduct a building specific functional adaptation strategy appraisal
	Le 04 Enhancing Site Ecology	SQE to provide an ecology report with appropriate recommendations for enhancing site ecology. Report should be based on survey carried out at appropriate time of year.
	Mat 05 Designing for Durability and Resilience	Although not specifically time bound to achieve the aim of this issue it should be considered around now.
Stage 03	Mat 06 Material Efficiency	Material efficiency opportunities identified and measures implemented
	Hea 05 Acoustic Performance	Not specifically time bound but to achieve requirements of this issue acoustician should be appointed early enough to provide advice regarding site layout and zoning
	Tra 05 Travel Plan	Not stated as a specific time bound element but should be developed as part of feasibility and design stages

Table 3 – Early RIBA stages summary

It is recommended that the above listed RIBA Stages are adhered to as these represent the optimal time to consider the relevant criteria however for some of the issues there is a degree of flexibility providing the intent of the issue can still be achieved. For example CN3.5 confirms that for Hea 06 if the suitably qualified security specialist is consulted later than RIBA Stage 2 then the credit can still be achieved providing they confirm their late appointment has not restricted the scope or implementation of their recommendations. However this is not the case for all of the above issues so it is important to discuss any concerns with meeting target dates with the appointed assessor as soon as possible so if necessary the targets for the project can be updated.

4. REQUIREMENTS FOR SPECIALIST CONSULTANTS

There are various BREEAM credits which require suitably qualified consultants to consider and report on specific elements of the project. This section identifies the specialist consultants that may be appointed and provides a summary of the current BREEAM related requirements with regards to the definition of "suitably qualified".

4.1 Sustainability Champion / BREEAM Advisory Professional

The appointment of a BREEAM Advisory Professional (AP) (previously known as a BREEAM Accredited Professional or Sustainability Champion) is not mandatory for BREEAM assessments, but will facilitate the assessment process. The BREEAM assessment methodology focuses very much on the importance of early involvement of the relevant specialists, as such there are additional credits available for the appointment of a BREEAM AP within BREEAM issues Man 01 and Man 03. It should be noted that although this is often provided as an optional extra service by BREEAM assessors, this is something that other appropriate professionals can offer, such as architects or engineers, if they have the relevant qualification.

Currently only members of the BREEAM AP membership scheme are deemed to be suitably qualified for the purpose of this issue. This qualification indicates that the individual has been trained and qualified by BRE as a specialist in built environment sustainability, environmental design and assessment. This membership is subject to ongoing CPD in key relevant areas.

The appointment of a BREEAM AP can be recognised within the assessment as follows:

Man 01 - related to the design stage BREEAM Assessment. A BREEAM credit is available for the appointment of a BREEAM AP to facilitate the setting and achievement of BREEAM performance targets for the project. To achieve this criteria the BREEAM AP should be appointed during the Preparation and Brief stage (RIBA Stage 1 or equivalent). A further credit is also available under Man 01 if the BREEAM AP is appointed to monitor progress against agreed BREEAM performance targets throughout the design process.

Man 03 - related to the post construction stage BREEAM Assessment. A credit is available where a BREEAM AP is appointed to ensure ongoing compliance with relevant sustainability performance criteria, to confirm this they will need to visit site regularly at key stages to carry out spot checks and have the relevant authority to do so.

4.2 Acoustician

A suitably qualified acoustician can be used to provide evidence for both Hea 05 Acoustic Performance (related to internal acoustics) and Pol 05 Reduction of Noise Pollution (related to the proposed buildings impact on nearby areas with specific reference to proposed external building services installations).

To meet the requirements of suitably qualified the acoustician should meet all of the following criteria:

- Hold a degree, PhD or equivalent qualification in a relevant subject i.e. acoustics or sound testing
- Have at least 3 years work experience that is relevant to the project and this should be within the last 5 years. The experience should clearly demonstrate a practical understanding of factors affecting acoustics in construction and the built environment including acting in an advisory capacity to provide recommendations for suitable acoustic performance levels and mitigation measures
- Hold a recognised acoustic qualification and membership of an appropriate professional body e.g. the Institute of Acoustics

4.3 Energy Specialist

The use of a building energy specialist is applicable to several issues in BREEAM however the requirements do vary from issue to issue therefore for simplicity they are summarised for the various issues below.

Hea 04 Thermal Comfort – a thermal model of the proposed building should be built to allow full dynamic thermal analysis to be undertaken which should meet specific parameters and inform the buildings temperature control strategy. There are no specific requirements regarding qualifications or experience for the individual who undertakes this modelling exercise but the use of specific software will mean that only certain individuals will be able to offer this service.

Ene 01 – Reduction of energy use and carbon emissions – although not specifically stated in the manual, the definition of suitably qualified energy assessor is still provided, therefore the required model should be produced by a licensed energy assessor who has access to the relevant software via an accredited energy assessment scheme provider. For England accredited energy assessors are listed at www.ndepcregister.com for non-domestic properties.

Ene 04 – Low Carbon Design – This issue requires an energy specialist to review the low and zero carbon technologies applicable to the assessed building. For the purpose of this issue an energy specialist is defined as someone who has acquired substantial expertise or a recognised qualification for undertaking assessments, designs and installations of low or zero carbon solutions in the commercial building sector however they must not be professionally connected to a single LZC technology or manufacturer.

4.4 Thermographic Survey & Airtightness Testing Specialist

There is a credit available under Man 04 for the use of a suitably qualified professional to undertake a thermographic survey and air tightness test of the assessed building in line with appropriate standards. To be suitably qualified they should meet the following:

- Air tightness tests should be undertaken by professionals with membership of the Air Tightness Testing and Measurement Association (ATTMA) attained at organisational level and maintaining UKAS accreditation (ISO 17025)
- Thermographic surveys should be undertaken by a professional holding a valid Level 2 certificate in thermography as defined by the UKTA website

4.5 Security Consultant

There is a single credit available for Hea 06 if a suitably qualified security specialist (SQSS) undertakes a Security Needs Assessment of the assessed building / site. To meet the definition of "suitably qualified" this should be undertaken by someone who meets with one of the following:

- Crime Prevention Design Advisor (CPDA)
- Architectural Liaison Officer (ALO)
- Counter Terrorism Security Advisor (CTSA)
- A specialist registered with a BREEAM recognised third party accreditation scheme for security specialists
 - o Minimum of three years relevant experience within the last five years. This experience must clearly demonstrate a practical understanding of factors affecting security in relation to construction and the built environment, relevant to the type and scale of the project being undertaken

- Hold a suitable qualification relevant to security
- Maintain (full) membership to a relevant professional body or accreditation scheme that meets the following:
 - Has a professional code of conduct to which members must adhere
 - Ongoing membership is subject to peer review

4.6 Ecologist

There are three issues under the land use and ecology category where the use of a suitably qualified ecologist (SQE) can assist with the achievement of credits; indeed for two of the issues, Le 04 and Le 05, it is only possible to achieve credits by appointing a SQE.

To meet the definition of SQE the ecologist completing the survey and report for the site must meet the following criteria:

- Hold a degree or equivalent qualification in ecology or a related subject, acceptable subjects (depending on their ecological content) would be Ecology, Biological Sciences, Zoology, Botany, Countryside Management, Environmental Science, Marine and Freshwater Management, Earth Sciences, Agriculture, Forestry, Geography and Landscape Management
 - Be a practising ecologist with at least 3 years relevant experience (within the last 5 years). This experience should demonstrate a practical understanding of factors affecting ecology in relation to construction and the built environment and should include acting in an advisory capacity to provide recommendations for ecological protection, enhancement and mitigation measures.
 - Should be covered by a professional code of conduct and be subject to peer review. Full members of the following organisations would meet this criteria:
 - Chartered Institution of Water and Environmental Management (CIWEM)
 - Chartered Institute of Ecology and Environmental Management (CIEEM)
 - Institute of Environmental Management and Assessment (IEMA)
 - Landscape Institute (LI)
 - The Institution of Environmental Sciences (IES)
- If the ecology report is undertaken by an ecologist who does not meet the above criteria then a Suitably Qualified Ecologist can verify them. In order for this to comply the SQE must confirm as a minimum that they have reviewed the report and have found it to:
- Represent sound industry practice
 - Report and recommend correctly, truthfully and objectively
 - Be appropriate given the local site conditions and scope of works proposed
 - Avoid invalid, biased and exaggerated statements

4.7 Civil Engineer

BREEAM issue Pol 03 criteria 7-15 consider the surface water run-off from the site, to achieve maximum credits here it is necessary for an appropriate consultant to be appointed to undertake the necessary calculations. The BREEAM Manual recognises that the qualifications here will to an extent depend on the complexity of the site, however generally it is necessary for the engineer to be able to demonstrate that they have the following:

- An appropriate qualification
- Relevant experience i.e. designing SUDs and flood prevention measures and completing peak rate of run off calculations
- If complex flooding calculations and prevention measures are require this must be a specialist hydrological engineer

4.8 Contaminated Land Specialist

BREEAM issue Le 01 offers a credit for developing on land that is deemed to be significantly contaminated and therefore requires remediation in order for the development to take place. The details of this must be confirmed by a suitably qualified contaminated land specialist who is required to meet the following criteria:

- Hold a degree or equivalent qualification in chemistry, environmental science / management, earth sciences, civil engineering or a related subject
- Have a minimum of 3 years relevant experience (within the last 5 years) in site investigation, risk assessment and appraisal – such experience must clearly demonstrate a practical knowledge of site investigation methodologies and understanding of remediation techniques and national legislation on the subject, as well as acting in an advisory capacity to provide recommendations for remediation

4.9 Other Consultants

This report has outlined the BREEAM requirements relating to qualifications where they are clearly stated within the BREEAM manual. There are other areas where a specialist could be used to assist with the production of the required evidence but no specific requirements regarding qualifications are stated within the BREEAM manual including:

- Man 01 – Third party consultation
- Man 02 – Cost consultant
- Man 04 – Specialist commissioning manager
- Man 05 – Post Occupancy Evaluation
- Transport category – Transport consultants
- Ene 06 – Lift consultant (sometimes offered by manufacturers)

5. BREEAM PRE ASSESSMENT

Abby Bartlett, licensed BREEAM assessor, met with several members of the design team on 31st August 2017 to discuss the targeted BREEAM scores for the proposed development in detail. Based on these discussions a BRE Pre Assessment Tool was completed. A revised copy to reflect the revised BREEAM 'Excellent' target has been issued, with a copy made available in Appendix A. Following the reasonable assumptions for the project a score of 74.90% is currently anticipated for the new development, which exceeds the requirement of 70% for BREEAM 'Excellent' and provides a sensible safety margin to make allowances for changes during the evolution of the project.

The graph and table below summarise the currently assumed credits, indicating the percentage of credits achieved for each of the nine categories, therefore highlighting where additional credits could be considered. Please refer to the BRE pre assessment tool in Appendix A for the reasoning as to why these are not currently assumed.

Figure 2 - Building Performance by Environment Section (taken from BRE Pre Assessment Tool)

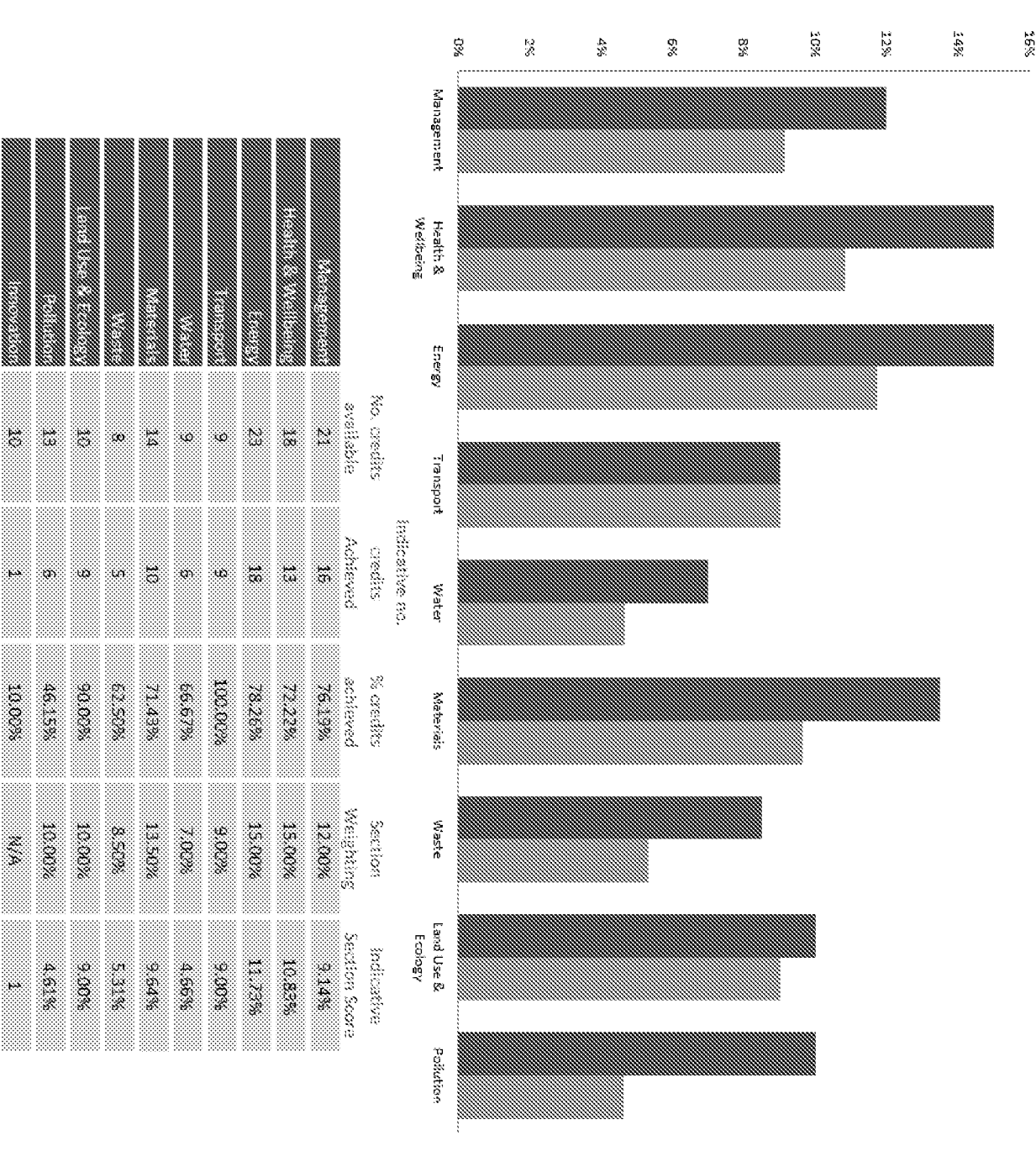


Table 4 - Summary of Assumed Credits & Section Scores (taken from BRE Pre Assessment Tool)

6. CONCLUSION

This report aims to provide preliminary guidance to the design team throughout the early RIBA stages with regards to the BREEAM assessment methodology and process and as a part of this has identified the following:

- An overview of the BREEAM process
- The mandatory credits that are required to achieve an 'Excellent' BREEAM rating
- Early stage actions to be considered
- The requirements for specialist consultants

It should be noted that there are specific consultants and technical services required at different RIBA stages. The appointment of any of these services should be considered as early as practical to enable the project to achieve the required ratings as well as full design team engagement.

This report does not constitute a formal BREEAM assessment however it does indicate a route to achieving BREEAM 'Excellent' should the assumptions summarised in Appendix A be supported with robust documentary evidence from the design team.

APPENDIX A – BREEAM PRE ASSESSMENT

General information

BRE Assessment reference no.	Updated to target Excellent 04.12.2017
Client name	Cover Storey Architects
Building end user/occupier	TBC
Assessor name	Abby Bartlett
Assessor organisation	Ridge & Partners LLP

Building details

Building name	Vahnea Residences
Country	England
Building type (main description)	Multi-Residential Accommodation
Building type (sub-group)	Multi-Residential - Halls of residence
Building floor area (GIA) m ²	TBC
Building floor area (NIFA) m ²	TBC
BREEAM scheme	New Construction
BREEAM version	2014 (SD5076)
BREEAM UK 2014 technical manual issue number	SD5076 Issue 5.0
Project type	New Construction (Fully fitted)
Assessment stage	Pre-Assessment
Location type	Medium urban (>25,000 population)
If applicable, does this industrial building have a heated or cooled operational area?	Option not applicable to building type
Does water heating contribute less than 10% of the buildings total energy consumption?	No
Commercial/industrial refrigeration and storage systems	No
Building user transportation systems (lifts and/or escalators)	Yes
Laboratory function/area and size category	No laboratory
Laboratory containment level	No laboratory
Fume cupboard(s) and/or other containment devices	No
Unregulated water uses present? (e.g. vehicle wash system, irrigation)	Yes
If applicable, will this healthcare building house inpatients?	Option not applicable to building type
If applicable, does this industrial building have an office area?	Option not applicable to building type
If applicable, does this building contain areas requiring SAP assessment?	No
If SAP used, what proportion of the building's total floor area (GIA) does it apply to?	Option not applicable to building type

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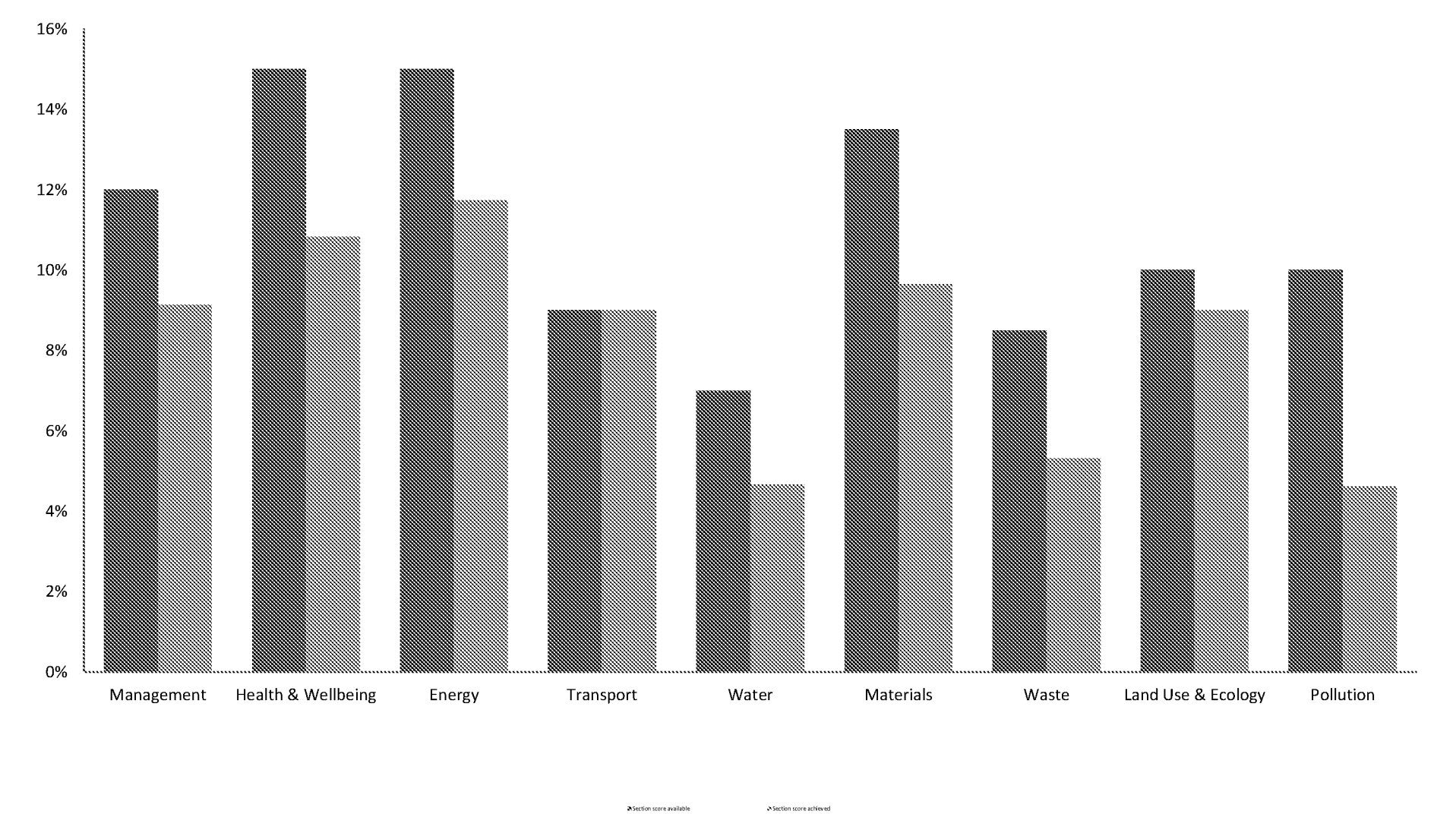
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Overall Building Performance

Building name	Vahnea Residences
Indicative BREEAM rating	Excellent
Indicative Total Score	74.9%
Min. standards level achieved	Outstanding level

Building Performance by Environment Section



Environmental Section	No. credits available	Indicative no. credits Achieved	% credits achieved	Section Weighting	Indicative Section Score
Management	21	16	76.19%	12.00%	9.14%
Health & Wellbeing	18	13	72.22%	15.00%	10.83%
Energy	23	18	78.26%	15.00%	11.73%
Transport	9	9	100.00%	9.00%	9.00%
Water	9	6	66.67%	7.00%	4.66%
Materials	14	10	71.43%	13.50%	9.64%
Waste	8	5	62.50%	8.50%	5.31%
Land Use & Ecology	10	9	90.00%	10.00%	9.00%
Pollution	13	6	46.15%	10.00%	4.61%
Innovation	10	1	10.00%	N/A	1

BREEAM UK New Construction 2014 Pre-Assessment Estimator: Assessment Issue Scoring

BREEAM® UK

Building name	Vahnea Residences
Building score (%)	74.90%
Building rating	Excellent
Minimum standards level achieved	Outstanding level

MANAGEMENT

Man 01 Project brief and design

No. of BREEAM credits available	4	Available contribution to overall score	2.29%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

Will stakeholder consultation (project delivery) take place? Will stakeholder consultation (third party) take place? Will a sustainability champion (design) be assigned? Will a sustainability champion (monitoring progress) be assigned?	Compliant?	Credits available		Credits achieved	
	Yes	1		1	
	No	1		0	
	Yes	1		1	
Yes		1		1	

Total BREEAM credits achieved	3
Total contribution to overall building score	1.71%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Comments/notes:

As part of a BREEAM Excellent strategy the stakeholder consultation credits are assumed although these are RIBA Stage 2 timebound so need to be considered soon, would usually be a project manager action with input from the team - to be considered.

It is unlikely that third party consultation will happen therefore this credit is also not assumed.

The appointment of a Sustainability Champion is assumed as part of a BREEAM Excellent strategy, again RIBA Stage 2 bound.

Man 02 Life cycle cost and service life planning

No. of BREEAM credits available	4	Available contribution to overall score	2.29%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria		Compliant?	Credits available	Credits achieved
Will an elemental life cycle cost (LCC) analysis be carried out? Will a component level LCC plan be developed? Will the predicted capital cost be reported? Expected capital cost of the project (if available)		No	2	0
		No	1	0
		Yes	1	1
		TBC	E/m ²	
Total BREEAM credits achieved		1		
Total contribution to overall building score		0.57%		
Total BREEAM innovation credits achieved		N/A		
Minimum standard(s) level		N/A		

Comments/notes:

The first three credits are not assumed at this stage however they should be considered as may be beneficial if future similar developments are planned. Reporting of expected capital cost of project has been assumed - the QS will need to consider this in more detail as there are very specific items this must include / exclude and the client should note that this has to be reported via the BREEAM tool.

Man 03 Responsible construction practices

No. of BREEAM credits available	6	Available contribution to overall score	3.43%
No. of BREEAM innovation credits available	1	Minimum standards applicable	Yes

Assessment Criteria

Assessment Criteria	Compliant?		Credits available		Credits achieved	
	Yes					
	Yes		1		1	
	Yes		1		1	
	2		2		2	
Is all site timber used in the project 'legally harvested and traded timber'?						
Will/does the principal contractor operate a compliant Environmental Management System?						
Will a construction stage sustainability champion be assigned?						
Will a considerate construction scheme be used by the principal contractor? (One credit where 'compliance' has been achieved. Two credits where 'compliance' is significantly exceeded.)						
Will construction site impacts be metered/monitored?	Yes				1	
Will site utility consumption be metered/monitored?	Yes		1		1	
Will transport of construction materials and waste be metered/monitored?	Yes		1		1	
Will exemplary level criteria be met?	Yes		1		1	

Key Performance Indicators: Construction site energy use

Energy consumption (total) - site processes		Information not available at design stage
Energy consumption (intensity) - site processes		Information not available at design stage
Distance (total) - materials transport to site		Information not available at design stage
Distance (total) - waste transport from site		Information not available at design stage
Energy consumption (total) - materials transport to site		Information not available at design stage
Energy consumption (total) - waste transport from site		Information not available at design stage
Energy consumption (intensity) - materials transport to site		Information not available at design stage
Energy consumption (intensity) - waste transport from site		Information not available at design stage

Key Performance Indicators: Construction site greenhouse gas emissions

Process greenhouse gas emissions (total) - site processes		Information not available at design stage
Greenhouse gas emissions (intensity) - site processes		Information not available at design stage
Greenhouse gas emissions (total) - materials transport to site		Information not available at design stage
Greenhouse gas emissions (total) - waste transport from site		Information not available at design stage
Greenhouse gas emissions (intensity) - materials transport to site		Information not available at design stage
Greenhouse gas emissions (intensity) - waste transport from site		Information not available at design stage

Key Performance Indicators: Construction site use of freshwater resources

Use of freshwater resource (total) - site processes		Information not available at design stage
Use of freshwater resource (intensity) - site processes		Information not available at design stage

Total BREEAM credits achieved	6
Total contribution to overall building score	3.43%
Total BREEAM innovation credits achieved	1
Minimum standard(s) level	Outstanding level

Comments/notes:

Building Performance by Assessment Issue

04/12/2017

These items are all related to the Contractor actions during construction - to meet this requirement at design stage specific information can be included as formal clauses within the contractor's proposals. It is currently assumed that all timber will be legally sourced as this is a pre-requisite for this issue. The use of a construction stage Sustainability Champion is not currently assumed but could be considered. Currently a score of >40 for CCS is assumed as part of an Excellent strategy. QS to write into contract
--

Man 04 Commissioning and handover

No. of BREEAM credits available	4	Available contribution to overall score	2.29%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Assessment Criteria

Assessment Criteria	Compliant?		Credits available		Credits achieved	
	Yes		1		1	
	Yes		1		1	
	No		1		0	
Will a commissioning manager be appointed?	Yes		1		1	
Will the building fabric be commissioned?	No		1		0	
Will a building user guide be developed prior to handover?	Yes		1		1	
Will a training schedule be prepared for building occupiers/managers?	Yes		1		1	

Total BREEAM credits achieved	3
Total contribution to overall building score	1.71%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	Outstanding level

Comments/notes:

For buildings with complex systems (e.g. comfort cooling, BMS, renewables) a specialist commissioning manager will be required to achieve the assumed credits and they will need to be appointed during design stage in order for this to comply (2nd credit).
For the purpose of this pre-assessment it has been assumed that the commissioning criteria will be achieved and a Building User Guide will be compiled together with a training schedule.
The only credit that is not assumed is for commissioning of the building fabric this requires a thermographic survey as well as an airtightness test and inspection to be undertaken (depending on building type or construction). If these are going to be undertaken anyway then the additional criteria could be targeted - can this be confirmed?

Man 05 Aftercare

No. of BREEAM credits available	3	Available contribution to overall score	1.71%
No. of BREEAM innovation credits available	1	Minimum standards applicable	Yes

Assessment Criteria

Assessment Criteria	Compliant?		Credits available		Credits achieved	
	Yes		1		1	
	Yes		1		1	
	Yes		1		1	
Will aftercare support be provided to building occupiers?	Yes		1		1	
Will seasonal commissioning occur over 12months once substantially occupied?	Yes		1		1	
Will a post occupancy evaluation be carried out 1 year after occupation?	Yes		1		1	
Will exemplary level criteria be met?	No		1		0	

Total BREEAM credits achieved	3
Total contribution to overall building score	1.71%

Total BREEM innovation credits achieved	0
Minimum standard(s) level	Outstanding level

Comments/notes:

Seasonal commissioning has been assumed, together with appropriate aftercare support and a Post Occupancy Evaluation. Note this should be carried out 1 year after initial occupation by an independent party (as per Man 01) and the results must be disseminated in order to comply - this is assumed to be a client item. An innovation credit is available if the infrastructure and resources are put in place to collate relevant data about the building quarterly for the first three years of occupation - this has not currently been assumed for the purpose of this pre-assessment but should be considered by the client as this would award an additional highly weighted credit.

HEALTH & WELLBEING

Hea 01 Visual Comfort

No. of BREEAM credits available	4	Available contribution to overall score	3.33%
No. of BREEAM innovation credits available	1	Minimum standards applicable	No

Assessment Criteria

Will the design provide adequate glare control for building users? How many credits will be targeted for the daylighting criteria? Will the design provide adequate view out for building users? Will internal/external lighting levels, zoning and controls be specified in accordance with the relevant CIBSE Guides/British Standards? Will exemplary level criteria be met?	Compliant?			Credits available		Credits achieved	
	No			1		0	
	0			1		0	
	Yes			1		1	
	Yes			1		1	
				No	1	0	

Total BREEAM credits achieved	2
Total contribution to overall building score	1.67%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Comments/notes:

Glare control measures are not assumed for now as the bedrooms are likely to have curtains It is assumed that the view out criteria will be achieved for relevant rooms - this is supported by the indicative layout on the proposed floor plans. No credits are currently assumed for daylighting, these could be considered by the design team but kitchens, living rooms and communal spaces would all need to meet the criteria and only a single credit is available.

Currently assumed all internal and external lighting will meet the technical requirements of this issue and internal lighting will be appropriately zoned and controlled - there are various requirements depending on the use of the space.

Hea 02 Indoor Air Quality

No. of BREEAM credits available	5	Available contribution to overall score	4.17%
No. of BREEAM innovation credits available	2	Minimum standards applicable	No

Assessment Criteria

Will an indoor air quality (IAQ) plan be produced and building designed to minimise air pollution? Will the building be designed to minimise the concentration and recirculation of pollutants in the building?	Compliant?			Credits available		Credits achieved	
	Yes			1		1	
				No	1	0	

Will the relevant products be specified to meet the VOC testing and emission levels required?			Yes	1	1
Will formaldehyde and total VOC levels be measured post construction?			Yes	1	1
Will the building be designed to, or have the potential to provide, natural ventilation?			Yes	1	1

Will exemplary level criteria be met?	0	2	0
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Key Performance Indicators: Indoor air quality

Concentration levels of formaldehyde		INA	Information not available at design stage
Total volatile organic compound (TVOC) concentration		INA	Information not available at design stage

Total BREEAM credits achieved	4
Total contribution to overall building score	3.33%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Comments/notes:

Assumed that a compliant air quality plan will be undertaken and that the architectural specification will list the VOC testing and emission levels to be achieved for the scheme with post completion testing undertaken.
The minimisation of concentration and recirculation of pollutants credit will be difficult to achieve due to close proximity to the adjacent road so is not assumed.
It has also been assumed that the buildings will have potential for natural ventilation even if mechanical systems are specified.

Hea 03 Safe containment in laboratories

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment Criteria

Will an objective risk assessment of proposed laboratory facilities' design be completed? Will the manufacture & installation of fume cupboards and containment devices meet best practice standards? Will containment level 2 & 3 labs meet best practice safety & performance criteria?	Compliant?	Credits available	Credits achieved

Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

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Hea 04 Thermal comfort

No. of BREEAM credits available	3	Available contribution to overall score	2.50%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

Will thermal modelling of the design be carried out? Will the building services system be adapted for a projected climate change scenario? Will the modelling inform the development of a thermal zoning and control strategy?	Compliant?	Credits available	Credits achieved
	Yes	1	1
	No	1	0
	Yes	1	1

Key Performance Indicators: Thermal comfort

Building Performance by Assessment Issue

04/12/2017

Predicted Mean Vote (PMV)		INA
Predicted Percentage Dissatisfied (PPD)		INA

Total BREEAM credits achieved	2
Total contribution to overall building score	1.67%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

It has been assumed that the M&E engineers will model the building and use the model to inform the thermal zoning and controls in line with the BREEAM requirements. Currently the credit available for adaptability for a projected climate change scenario has not been assumed as this requires the project team to demonstrate how the building has been adapted or allowance has been made for future adaptation using passive design solutions to deal with the projected climate change environment - if this can be proven then an additional credit could be achieved.

Hea 05 Acoustic Performance

No. of BREEAM credits available	4	Available contribution to overall score	3.33%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

Will the building meet the appropriate acoustic performance standards and testing requirements for: a. Sound insulation b. Indoor ambient noise level c. Reverberation times?	Credits	Credits available	Credits achieved
	3	4	3

Total BREEAM credits achieved	3
Total contribution to overall building score	2.50%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Assumed that a suitably qualified acoustician will be appointed to consider the scheme and then either bespoke performance requirements or the requirements of the BREEAM Manual will be met in order to achieve at least 3 of the 4 available credits as part of a BREEAM Very Good strategy. Confirmation of the achievability of these credits will only be possible when a suitably qualified acoustician is consulted which it is understood is due to be imminently.

Hea 06 Safety and Security

No. of BREEAM credits available	2	Available contribution to overall score	1.67%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

Where external site areas are present, will safe access be designed for pedestrians and cyclists? Will a suitably qualified security consultant be appointed and security considerations accounted for?	Compliant?	Credits available	Credits achieved
Yes	Yes	1	1
Yes	Yes	1	1

Total BREEAM credits achieved	2
Total contribution to overall building score	1.67%
Total BREEAM innovation credits achieved	N/A

Comments/notes:

For the purpose of this pre-assessment it is assumed that a Security Specialist will complete a Security Needs Assessment at Concept Design (Stage 2) which will involve a visual audit of the site and surroundings etc (this is different to previous BREEAM so criteria will need to be carefully considered to confirm achievability). Their recommendations for the scheme must be included in the design in order for the credit to be achieved.

The safe access criteria for pedestrians and cyclists is not applicable to this building as it will be accessed directly from the public highway therefore this credit is achieved if the security criteria is proven and it therefore assumed in line with the above.

ENERGY

Ene 01 Reduction of energy use and carbon emissions

No. of BREEAM credits available	12	Available contribution to overall score	7.83%
No. of BREEAM innovation credits available	5	Minimum standards applicable	Yes

How do you wish to assess the number of BREEAM credits achieved for this issue?	Define a target number of BREEAM credits achieved
Select the target number of BREEAM credits for the Ene01 issue:	8

Ene 01 Calculator

Country of the UK where the building is located		Confirm building regulation and version to be used:	
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New Construction (Fully fitted)	Building floor area	m2
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Notional building heating and cooling energy demand	MJ/m2yr
Actual building heating and cooling energy demand	MJ/m2yr
Notional building primary energy consumption	kWh/m2yr
Actual building primary energy consumption	kWh/m2yr
Target emission rate (TER)	kgCO2/m2yr
Building emission rate (BER)	kgCO2/m2yr
Building emission rate improvement over TER	
Heating & cooling demand energy performance ratio (EPR _{cd})	
Primary consumption energy performance ratio (EPR _{pc})	
CO ₂ Energy performance ratio (EPR _{co2})	
Overall building energy performance ratio (EPR _{inc})	

Where specified, please confirm the energy production from onsite or near site energy generation technologies	
Equivalent % of the building's 'regulated' energy consumption generated by carbon neutral sources and used to meet energy demand from 'unregulated' building systems or processes?	
If the building is defined as 'carbon negative' what is the total (modelled) renewable/carbon neutral energy generated and exported?	

Total BREEAM credits achieved	8
Total contribution to overall building score	5.22%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	Outstanding level

Comments/notes:

8 credits have been targeted for a BREEAM 'Excellent' strategy - Please note it is mandatory to achieve 5 credits for Excellent however due to the high weighting of these credits it is recommended that as many are targeted as possible as part of an overall strategy. The feasibility of achieving these targeted credits will be confirmed as the M&E design evolves during RIBA Stage 3.

Ene 02 Energy monitoring

No. of BREEAM credits available	1	Available contribution to overall score	0.65%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Assessment criteria

Will a BMS or sub-meters be specified to monitor energy use from major building services systems?	Compliant?	Credits available	Credits achieved
Yes		1	1
Will a BMS or sub-meters be specified to monitor energy use by tenant/building function areas?			

Total BREEAM credits achieved	1
Total contribution to overall building score	0.65%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	Outstanding level

Comments/notes:

Only one credit is available for multi-residential and this is a mandatory requirement for BREEAM Very Good. To achieve this relevant members of the design team will need to estimate annual energy consumption of each fuel associated with various end use categories to ensure that at least 90% of the estimated annual energy consumption is assigned to its end use category . If a BMS is specified the meters will need to be connected to this to achieve the credit.

Ene 03 External lighting

No. of BREEAM credits available	1	Available contribution to overall score	0.65%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment criteria

Will external light fittings and controls be specified in accordance with the BREEAM criteria?	Compliant?	Credits available	Credits achieved
Yes		1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	0.65%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Assumed that external lighting will be installed on the new development and this will meet the requirements of this issue i.e. automatically controlled and appropriate average luminous efficacy.

Ene 04 Low carbon design

No. of BREEAM credits available	3	Available contribution to overall score	1.96%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment criteria

Assessment criteria	Compliant?	Credits available	Credits achieved
	Yes	1	1
	No	1	0
	Yes	1	1

Will passive design measures be used in line with an analysis carried out during concept design stage (RIBA stage 2 or equivalent)?

Will free cooling measures be implemented in the whole building in line with the passive design analysis?

Will a LZC technology be specified in line with a feasibility study carried out by the completion of the Concept Design stage (RIBA Stage 2 or equivalent)?

KPI - Low and/or zero carbon energy generation

Total on-site and/or near-site LZC energy generation	INA	kWh/yr
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Total BREEAM credits achieved	2
Total contribution to overall building score	1.30%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

For the purpose of this pre-assessment it has been assumed that a compliant thermal model will be completed for the site and the project team will carry out an analysis of the proposed design to influence decisions made during RIBA Stage 2 and identify opportunities for the implementation of passive design solutions that reduce demands for energy consuming building services - the design team will need to be able to demonstrate a meaningful reduction.

The free cooling credit is currently not assumed.

A further credit is available for completing a compliant LZC feasibility study and implementing an appropriate technology which leads to a further meaningful reduction in regulated carbon dioxide emissions, this is assumed.

Ene 05 Energy efficient cold storage

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment criteria

Compliant? Credits available Credits achieved

Building Performance by Assessment Issue

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Will the refrigeration system be designed, installed & commissioned in accordance with BREEAM criteria?		
Will the refrigeration system demonstrate a saving in indirect greenhouse gas emissions?		
No	N/A	N/A
No	N/A	N/A

Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Ene 06 Energy efficient transportation systems

No. of BREEAM credits available	3	Available contribution to overall score	1.96%
No. of BREEAM innovation credits available	0	Minimum standards applicable	N/A

Assessment criteria

Assessment criteria	Compliant?		Credits available		Credits achieved	
	Yes		1		1	
Will a transportation system analysis be carried out to determine and specify the optimum number, size and type of lifts that is most energy efficient? Will the relevant energy efficient features criteria be met?	Yes		2		2	

Total BREEAM credits achieved	3
Total contribution to overall building score	1.96%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

A lift is proposed for the development therefore it is assumed that a transportation system analysis will be carried out and relevant energy efficient features incorporated to allow these credits to be achieved. Please note if the lift travels at less than 0.15m/s then this credit will be scoped out.

Ene 07 Energy efficient laboratory systems

No. of BREEAM credits available	N/A	Available contribution to overall score	N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable	N/A

Assessment criteria

Assessment criteria	Compliant?		Credits available		Credits achieved	
	Yes					
Pre-requisite: Criterion 1 of Hea 03 - risk assessment of laboratory facilities Have the occupants' laboratory requirements & performance criteria been confirmed during the preparation of the initial project brief to minimise energy demand?						
Best Practice Energy Practices in Laboratories (table 2.7) Will the laboratory meet criteria item b) Fan power? Will the laboratory criteria item c) Fume cupboard volume flow rates? Will the lab meet item d) Grouping / isolation of high filtration/ventilation activities? Will the laboratory meet criteria item e) Energy recovery - heat? Will the laboratory meet criteria item f) Energy recovery - cooling?						

Will the laboratory meet criteria item g) Grouping of cooling loads?	
Will the laboratory meet criteria item h) Free cooling?	
Will the laboratory meet criteria item i) Load responsiveness?	
Will the laboratory meet criteria item j) Cleanrooms?	
Will the laboratory meet criteria item k) Diversity?	
Will the laboratory meet criteria item l) Room air-change rates?	

Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Ene 08 Energy efficient equipment

No. of BREEAM credits available	2	Available contribution to overall score	1.30%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment criteria

Which of the following will be present and likely to be a/the major contributor to 'unregulated' energy use?	Present		Major impact	
	No			
	No		No	
	No			
	No			
	Yes		No	
	Yes		Yes	
	No			
	No			
	No			
Ref A Small power and plug in equipment?				
Ref B Swimming pool?				
Ref C Communal laundry?				
Ref D Data centre?				
Ref E IT-intensive operation areas?				
Ref F Residential areas?				
Ref G Healthcare?				
Ref H Kitchen and catering facilities?				

Will the significant majority contributor(s) to 'unregulated' energy use above meet the BREEAM criteria?	Compliant	Credits available	Credits achieved
	Yes	2	2

Total BREEAM credits achieved	2
Total contribution to overall building score	1.30%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Some of the listed items are understood to be likely present within the assessed building and also to have major impacts on the unregulated energy use. To achieve this criteria the design team would have to establish which of the listed items would have a major impact and justify this - there are then specific criteria listed within the BREEAM Manual that must be achieved for the relevant items.

If it is considered that white goods such as fridges, freezers, washing machines and dishwashers etc will have highest impact and if these are confirmed to be A+ rated then these credits could be achieved, based on discussions with the team this is currently assumed.

Ene 09 Drying space

No. of BREEAM credits available	1	Available contribution to overall score	0.65%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Is there a risk of ligature for residents? Will internal/external drying space and fixings be provided?	No	1	1
	Yes		

Total BREEAM credits achieved	1
Total contribution to overall building score	0.65%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

This credit is currently assumed as it is considered this would be a useful addition to the scheme - design team to review and confirm.

TRANSPORT

Tra 01 Public Transport Accessibility

No. of BREEAM credits available	3	Available contribution to overall score	3.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Building type category (for purpose of Tra01 issue assessment)	Multi-Residential Accommodation
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Assessment Criteria	Compliant	Credits available	Credits achieved
Indicative public transport accessibility index (AI): Will the building have a dedicated bus service?	8.00	3	3 N/A

AI	Indicative Accessibility Index for pre-assessment
0	Poor or no public transport provision
1	A single BREEAM compliant public transport node available
2	Some BREEAM compliant public transport nodes/services available
4	A selection of BREEAM compliant public transport nodes/services available
8	Good provision of public transport i.e. small urban centre / suburban area
10	Very Good provision of public transport i.e. small/medium urban centre
12	Excellent provision of public transport, i.e. medium urban centre
18	Excellent provision of public transport, i.e. large urban/metropolitan city centre

Total BREEAM credits achieved	3
Total contribution to overall building score	3.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

A desktop review has confirmed that the transport links to the site are very good and include various rail services from Bognor Regis train station which is located 300m away. There are also various bus stops around 300m away which provide many services. Both of these transport nodes will likely result in an AI of over 8 being achieved so this is assumed for the purpose of this pre-assessment.

Tra 02 Proximity to Amenities

No. of BREEAM credits available	2	Available contribution to overall score	2.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will the building be in close proximity of and accessible to applicable amenities?	Yes	2	2

Total BREEAM credits achieved	2
Total contribution to overall building score	2.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

There are various amenities located close by to the development therefore this credit has been assumed. Based on desktop study it is anticipated that there will be at least 7 of the following available within 1000m of the proposed site; appropriate food outlet, access to cash, access to outdoor open space (public or private), access to leisure facility, postal facility, community facility, pharmacy, GP surgery and child care facility or school.
--

Tra 03 Cyclist facilities

No. of BREEAM credits available	1	Available contribution to overall score	1.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Building type category (for purpose of Tra03 issue assessment)	Student residences and key worker accommodation
How many compliant cycle storage spaces will be provided?	60

Assessment Criteria

Cycle storage spaces	Compliant?	Credits available	Credits achieved
	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	1.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

70 cycle storage spaces are proposed, this is an adequate amount to comply with the amount of spaces need for 97 residence (1 space for every 2 residents). Note for multi residential developments there is no credit available for cyclist facilities.
--

Tra 04 Maximum Car Parking Capacity

No. of BREEAM credits available	2	Available contribution to overall score	2.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Building type category (for purpose of Tra04 issue)	Student residences and key worker accommodation
Building's indicative Accessibility Index (sourced from issue Tra01)	8

Assessment Criteria

Compliant?	Credits available	Credits achieved
Yes	2	2

Will BREEAM's maximum parking capacity criteria for the building type/Accessibility Index be met?

Building Performance by Assessment Issue

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Total BREEAM credits achieved	2
Total contribution to overall building score	2.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

No parking is to be provided for this development therefore both of these credits can be assumed.

Tra 05 Travel Plan

No. of BREEAM credits available	1	Available contribution to overall score	1.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

Will a transport plan based on site specific travel survey/assessment be developed?	Compliant?	Credits available	Credits achieved
	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	1.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

It is assumed that a compliant Transport Assessment will be compiled and a Travel Plan developed based on this, if the recommendations from this are incorporated into the design then this credit can be awarded, this is currently assumed.

WATER

Wat 01 Water Consumption

No. of BREEAM credits available	5	Available contribution to overall score	3.89%
No. of BREEAM innovation credits available	1	Minimum standards applicable	Yes

How do you wish to assess the BREEAM credits to be achieved for this issue?

Define a target % improvement over baseline sanitary fittings

What is the target for % reduction in potable water consumption for sanitary use in the building?

25% - two credits

Please select the calculation procedure used:

Standard approach data

Water Consumption from building micro-components	
--	--

Water demand met via greywater/rainwater sources Total net water consumption Improvement on baseline performance	

Key Performance Indicator - use of freshwater resource Total net Water Consumption Default building occupancy	

Alternative approach data Overall microcomponent performance level achieved	

Total BREEAM credits achieved	2
Total contribution to overall building score	1.56%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	Outstanding level

Comments/notes:

2 credits are targeted as part of a Very Good strategy, with one being a mandatory requirement for a BREEAM Very Good score. Currently it has been assumed that these credits will be achieved by specifying low flow sanitary fittings and using flow restrictors where relevant (e.g. wash hand basins and showers). It may be possible to target further credits here but this would generally require consideration of rainwater harvesting / grey water recycling.

Wat 02 Water Monitoring

No. of BREEAM credits available	1	Available contribution to overall score	0.78%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Assessment Criteria

Will there be a water meter on the mains water supply to the building(s)? Will metering/monitoring equipment be specified on the water supply to any relevant plant/building areas? Will all specified water meters have a pulsed output? If the site/building has an existing BMS connection, will all pulsed meters be connected to the BMS?	Compliant?	Credits available	Credits achieved
	Yes	1	1
	Yes		
	Yes		

Total BREEAM credits achieved	1
Total contribution to overall building score	0.78%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	Outstanding level

Comments/notes:

It is mandatory for a water meter to be installed on the main incoming water supply to the building, this should have a pulsed output and be connected to a BMS if one is proposed for the new building. A single credit is then available for ensuring that any building areas that will consume 10% or more of the building's total water demand are sub-metered and the sub-meters will also be connected to the BMS. This has been assumed for the proposed development.
--

Wat 03 Water Leak Detection and Prevention

No. of BREEAM credits available	2	Available contribution to overall score	1.56%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

Will a mains water leak detection system be installed on the building's mains water supply? Will flow control devices be installed in each sanitary area/facility?	Compliant?	Credits available	Credits achieved
	Yes	1	1
	Yes	1	1

Total BREEAM credits achieved	2
Total contribution to overall building score	1.56%
Total BREEAM innovation credits achieved	N/A

Comments/notes:

For the purpose of this pre-assessment it is assumed that flow control devices will be installed to each WC area (such as PIR sensors) and a leak detection system on the incoming water mains has also been assumed. Please note that the requirement for a flow control device is not applicable to individual WCs provided as ensuite facilities or a single bathroom for a collection of private rooms (CN4.1).

Wat 04 Water Efficient Equipment

No. of BREEAM credits available	1	Available contribution to overall score	0.78%
No. of BREEAM innovation credits available	No	Minimum standards applicable	No

Assessment Criteria

Has a meaningful reduction in unregulated water demand been achieved?	Compliant?	Credits available	Credits achieved
	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	0.78%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

It is assumed that the unregulated water use associated with the new building will be considered and measures will be taken to reduce this by a meaningful amount. Typically for this type of building this could be achieved by specifying planting which does not require irrigation or managing the irrigation in a compliant way i.e manual watering only or the use of rainwater for irrigation or the use of soil moisture sensors with drip fed subsurface irrigation systems.

MATERIALS

Mat 01 Life Cycle Impacts

No. of BREEAM credits available	6	Available contribution to overall score	5.79%
No. of BREEAM innovation credits available	3	Minimum standards applicable	No

How do you wish to assess the number of BREEAM credits to be achieved for this issue? Define the number of Mat 01 credits achieved

Assessment Criteria

Predicted total Mat01 credits achieved	5
Green Guide exemplary level compliant?	
Has IMPACT compliant software been used?	

Key Performance Indicator - embodied green house gas emissions by element	Total area of element m ²	Total impact kgCO ₂ eq.	Area of element impact data relevant to m ²
External walls			

	Windows			
	Roof			
	Upper floor construction			
	Internal wall			
	Floor finishes/coverings			

Key Performance Indicator - embodied green house gas emissions for building (assessed elements only)

Total embodied green house gas emissions for building (by assessed elements)	Missing data	kgCO ₂ eq.		kgCO ₂ eq./m ²
Proportion of applicable building elements that data reported covers				

Total BREEAM credits achieved	5
Total contribution to overall building score	4.82%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Comments/notes:

It is currently assumed 5 of the available 6 credits will be achieved as part of an Excellent strategy. Please note that all element types are assessed for multi-residential. This environmental issue specifically considers the environmental impact of materials throughout their life cycle i.e. from extraction through to in use and eventual demolition. Achievement of credits here is associated with the Green Guide to Specification which is an online tool that is free to access (although registration is required) - materials are rated A+ to E; the more materials with higher ratings the more credits will be achieved as calculated by the Mat 01 calculator tool. The architect should review their proposals with relation to the Green Guide and confirm if these credits are likely to be achieved.

Mat 02 Hard Landscaping and Boundary Protection

No. of BREEAM credits available	1	Available contribution to overall score	0.96%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

Will 280% of all external hard landscaping and boundary protection achieve a Green Guide A or A+ rating?	Compliant?	Credits available	Credits achieved
	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	0.96%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

To achieve this credit at least 80% of all hard landscaping and boundary protection must achieve a Green Guide Rating of A or A+. Note: existing boundary protection is automatically assigned an A+ rating if less than 20% subject to minor alterations so only new needs to be formally assessed. Existing natural features such as hedges are awarded A+ rating automatically. Hard landscaping includes parking areas, pathways, roads within car parks but excludes access roads, designated vehicular manoeuvring areas, specialist sports areas (running tracks, netball areas etc).

It is understood that there will be minimal external hard landscaping and likely no boundary protection for this scheme so this credit has been assumed.

Mat 03 Responsible Sourcing

No. of BREEAM credits available	4	Available contribution to overall score	3.86%
No. of BREEAM innovation credits available	1	Minimum standards applicable	Yes

Assessment Criteria

All timber and timber based products are 'legally harvested and trader timber'	Compliant	Credits available	Credits achieved
Is there a documented sustainable procurement plan?	Yes	1	1
Percentage of available responsible sourcing of materials points achieved	Yes	3	1

Please confirm the route used to assess Mat03	Route 1: Lowest RSCS point score
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Total BREEAM credits achieved	2
Total contribution to overall building score	1.93%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	Outstanding level

Comments/notes:
Building Performance by Assessment Issue

04/12/2017

It is mandatory that all timber and timber based products are legally harvested and traded therefore this has been assumed. It is also assumed that a sustainable procurement plan will be compiled for the project (or the Contractor will have one in place) and at least a single RSM credit will be achieved (at least 18% of RSM points achieved).

At design stage this could be written into the contractor requirements for evidence. Please note that if a sustainable procurement plan is produced more than 18% of RSM points will be achieved, as part of a BREEAM Very Good strategy 2 of the 4 available credits are currently assumed, further credits here could be targeted but may be harder to prove for the final post construction assessment as this will put the onus on the Contractor to provide adequate documentary evidence of responsible sourcing for the actual materials used in the build.

Mat 04 Insulation

No. of BREEAM credits available	1	Available contribution to overall score	0.96%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

What is the building's targeted insulating index?	2.50	Credits available	1	Credits achieved	1	Note: An insulatio
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Total BREEAM credits achieved	1
Total contribution to overall building score	0.96%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

This issue assesses all insulation included in the external walls, ground floor, roof and building services. The insulation index is calculated taking into account the area, thickness and thermal conductivity of the specified insulation and then this is multiplied by the Green Guide Rating. Achievement of this issue is currently assumed but it should be considered by the architects and M&E team to confirm achievability.

Mat 05 Designing for durability and resilience

No. of BREEAM credits available	1	Available contribution to overall score	0.96%
No. of BREEAM innovation credits available	0	Minimum standards applicable	N/A

Assessment Criteria

Will suitable durability/protection measures be specified and installed to vulnerable areas of the building?	Compliant?	Credits available	Credits achieved
Will suitable durability/protection measures be specified and installed to exposed parts of the building?	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	0.96%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Due to the type of building being assessed and as part of a BREEAM Very Good Strategy, it is anticipated that this criteria will be targeted by the design team. This will require an early discussion regarding vulnerable areas and those that may be subject to material degradation. To achieve the credit suitable design and specification measures must then be taken to overcome this - the credit is not timebound in nature therefore has currently been targeted as part of a BREEAM Very Good strategy.

Mat 06 Material efficiency

No. of BREEAM credits available	1	Available contribution to overall score	0.96%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

Will material efficiency measures be identified & implemented during all RIBA stages?	Compliant?	Credits available	Credits achieved
	No	1	0

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

This issue however requires considerations to be made at 5 RIBA stages: 1 - Preparation and Brief, 2 - Concept Design, 3 - Developed Design, 4 - Technical Design and 5 - Construction.

The evidence requirements, although not overly prescriptive (CN3.1), require the client to take the lead from the outset of a project with regards to setting target for material and waste efficiency, the design team then need to be able to produce documentary evidence to demonstrate how these considerations have evolved at each RIBA Stage. If there is any RIBA Stage 1 evidence covering this then it would be worth considering targeting this criteria further as the evidence requirements are flexible as long as the specific criteria is proven.

WASTE

Wat 01 Construction Waste Management

No. of BREEAM credits available	4	Available contribution to overall score	4.25%
No. of BREEAM innovation credits available	1	Minimum standards applicable	Yes

How do you wish to assess the number of BREEAM credits to be achieved for this issue?

Define a target number of BREEAM credits

Select the number of BREEAM credits being targeted for Issue Wat 01:	3	BREEAM Wat01 Innovation credits:	
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Assessment Criteria

Construction resource management plan Demolition Taking Place on Site? Compliant Pre-demolition audit Does the excavation waste meet the exemplary level requirements?	Compliant?
☐	☐
☐	☐
☐	☐

Key Performance Indicators - Construction Waste

Measure/units for the data being reported			Please Select Unit
Non-hazardous construction waste (excluding demolition/excavation)			Please Select Unit
Total non-hazardous construction waste generated	INA		Please Select Unit
Non-hazardous non-demolition const. waste diverted from landfill		%	Note: At this stage this will be a target t
Total non-hazardous non-demolition const. waste diverted from landfill	INA		Please Select Unit
Total non-hazardous demolition waste generated		Please Select Unit	Note: At the pre-assessment stage this
Non-hazardous demolition waste diverted from landfill		%	Note: At this stage this will be a target t
Total non-hazardous demolition waste to disposal	INA		Please Select Unit
Material for reuse		Please Select Unit	Note: At the pre-assessment stage this
Material for recycling		Please Select Unit	Note: At this stage this will be a target t
Material for energy recovery		Please Select Unit	Note: At this stage this will be a target t
Hazardous waste to disposal		Please Select Unit	Note: At this stage this will be a target t

Total BREEAM credits achieved	3
Total contribution to overall building score	3.19%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	Outstanding level

Comments/notes:

To achieve credits for this issue it is anticipated that a Resource Management Plan will be developed to cover the non hazardous waste related to onsite works and dedicated off site manufacture or fabrication (including demolition and excavation waste). It is anticipated that at least 2 credits will be targeted for waste resource efficiency (<7.5m3 per 100m2 GIA) but this target does not include demolition or excavation waste. A further credit is assumed for diversion of resources from landfill, 70% of non demo waste and 80% of demo waste must be diverted in order to achieve this credit.

It should be noted that to achieve these credits a pre-demolition audit of any existing buildings, structures and hard surfaces within the site boundary must be undertaken to maximise the recovery of material from demolition for subsequent high grade / value applications and avoid waste going to landfill.

Wst 02 Recycled Aggregates

No. of BREEAM credits available	1	Available contribution to overall score	1.06%
No. of BREEAM innovation credits available	1	Minimum standards applicable	No

Assessment Criteria

What is the target total % of high grade aggregate that will be recycled/secondary aggregate?	Total 0%
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% of high-grade aggregate that is recycled/secondary aggregate - by application

Structural frame	
Bitumen/hydraulically bound base, binder and surface courses	
Building foundations	
Concrete road surfaces	
Pipe bedding	
Granular fill and capping	

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Comments/notes:

This credit can be difficult to achieve so has not been assumed currently but should be considered by the relevant members of the design team.

Wst 03 Operational Waste

No. of BREEAM credits available	1	Available contribution to overall score	1.06%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Assessment Criteria

Will operational recyclable waste volumes be segregated and stored?	Compliant?	Credits available	Credits achieved
Will static waste compactor(s) or baler(s) be specified where appropriate?	Yes	1	1
Will vessel(s) for composting suitable organic waste where appropriate?	Yes		

Will internal and, if applicable, communal storage & home compost facilities be provided?		Yes
Total BREEAM credits achieved	1	
Total contribution to overall building score	1.06%	
Total BREEAM innovation credits achieved	N/A	
Minimum standard(s) level	Outstanding level	

Comments/notes:

To achieve this criteria the design team need to ensure that adequate and dedicated space is provided for residents to deal with both recyclable and general waste, for hall of residences facilities are required both internally and externally. Given the proposed use of the building as student halls of residences it is anticipated that composting facilities will be required to achieve this credit as significant amounts of food waste are likely to be produced - this is assumed as part of an Excellent strategy.	

Wst 04 Speculative Floor and Ceiling Finishes

Assessment issue not applicable

No. of BREEAM credits available	N/A	Available contribution to overall score		N/A
No. of BREEAM innovation credits available	N/A	Minimum standards applicable		N/A

Assessment Criteria

	Compliant?	Credits available	Credits achieved

Total BREEAM credits achieved	N/A
Total contribution to overall building score	N/A
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Wst 05 Adaption to climate change

No. of BREEAM credits available	1	Available contribution to overall score	1.06%
No. of BREEAM innovation credits available	1	Minimum standards applicable	N/A

Assessment Criteria

Will a climate change adaptation strategy appraisal for structural and fabric resilience be conducted by the end of Concept Design (RIBA Stage 2 or equivalent)?	No	1	0
Will exemplary level criteria – Responding to adaptation to climate change be met?	No	1	0

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	0
Minimum standard(s) level	N/A

Comments/notes:

This has not currently been assumed - to achieve the design team would need to conduct a climate change adaptation strategy appraisal for structural and fabric resilience by the end of RIBA Stage 2. This must cover very specific items listed in the BREEAM Manual covering hazard identification and risk assessment. Although not currently assumed the achievability of this should be considered by the team as it is likely that many of the items will be discussed as part of the design development anyway. Primarily a structural and architectural issue.

Wst 06 Functional adaptability

No. of BREEAM credits available	1	Available contribution to overall score	1.06%
No. of BREEAM innovation credits available	0	Minimum standards applicable	N/A

Assessment Criteria

Assessment Criteria	Compliant?	Credits available	Credits achieved
Will a building specific functional adaptation strategy appraisal be conducted by Concept Design (RIBA Stage 2 or equivalent) and will functional adaptation measures be implemented?	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	1.06%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

This issue requires a building specific functional adaptation strategy study to be undertaken by the client and design team. In order to comply all of the required criteria listed in CN3 would need to be demonstrated as being considered and a formal functional adaptation strategy study developed at RIBA Stage 2 with the measures demonstratable by RIBA Stage 4. This has been assumed as part of a BREEAM Very Good strategy but will need to be considered further by the design team (primarily Architectural and M&E).

LAND USE & ECOLOGY

LE 01 Site Selection

No. of BREEAM credits available	2	Available contribution to overall score	2.00%
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No. of BREEAM innovation credits available	0	Minimum standards applicable	No
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Assessment Criteria

Will at least 75% of the proposed development's footprint be located on previously occupied land? Is the site deemed to be significantly contaminated?	Compliant?		Credits available	Credits achieved
	Yes		1	1
	No		1	0

Total BREEAM credits achieved	1
Total contribution to overall building score	1.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Based on early information it is understood the the development's footprint will be on previously occupied land and the first credit can therefore be achieved. It is currently unknown whether there is any remediation required in order for the development to go ahead therefore the second credit is not assumed currently.

LE 02 Ecological Value of Site and Protection of Ecological Features

No. of BREEAM credits available	2	Available contribution to overall score	2.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Ecological value of the land defined using	A Suitably Qualified Ecologist
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Assessment Criteria

Can the land within the construction zone be defined as 'land of low ecological value'? Will all features of ecological value surrounding the construction zone/site boundary be protected?	Compliant?	Credits available	Credits achieved
	Yes	1	1
	Yes	1	1

Total BREEAM credits achieved	2
Total contribution to overall building score	2.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

Based on the early information available it is assumed that the site will be considered as having low ecological value. If any features of ecological value are present they must be protected.

LE 03 Mitigating Ecological Impact

No. of BREEAM credits available	2	Available contribution to overall score	2.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Data sourced for calculating the change in ecological value from	Assessor's classification of broad habitat type(s) using BREEAM LE03/LE04 Calculator
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Assessment Criteria

What is the likely change in ecological value as a result of the sites development?	≥0 species (i.e. no negative change)	Plant species rich
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Total BREEAM credits achieved	2
Total contribution to overall building score	2.00%

Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	Outstanding level

Comments/notes:

Based on early information it is understood that the ecology of the site is likely to be very low and it is therefore assumed that there will be no negative change to the ecology of the site allowing both of these credits to be achieved.

LE 04 Enhancing Site Ecology

No. of BREEAM credits available	2	Available contribution to overall score	2.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

Will a suitably qualified ecologist be appointed to report on enhancing and protecting site ecology? Will the suitably qualified ecologist's general recommendations be implemented? What is the targeted/intended improvement in ecological value as a result of enhancement actions?	Compliant? Yes Yes ≥6 species (large positive change)	Credits available 2	Credits achieved 2
Plant species rich			

Total BREEAM credits achieved	2
Total contribution to overall building score	2.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

As part of a BREEAM Excellent strategy assumed an ecologist will be appointed and a large positive change will be proven.

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LE 05 Long Term Impact on Biodiversity

No. of BREEAM credits available	2	Available contribution to overall score	2.00%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

Will a Suitably Qualified Ecologist be appointed to monitor/minimise impacts of site activities on biodiversity? Will a landscape and habitat management plan be produced covering at least the first five years after project completion in accordance with British Standards? Number of applicable measures to improve biodiversity confirmed by SQE. Number of applicable measures implemented:	Compliant? Yes Yes 2 2	Credits available 2	Credits achieved 2
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Total BREEAM credits achieved	2
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Total contribution to overall building score	2.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

As part of a BREEAM Excellent strategy it is assumed an ecologist will be appointed and they will confirm that many of the additional measures are n/a to this site. Any that are will be complied with allowing both the credits to be achieved.

POLLUTION

Pol 01 Impact of Refrigerants

No. of BREEAM credits available	3	Available contribution to overall score	2.31%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

Refrigerant containing systems installed in the assessed building? Do all systems (with electric compressors) comply with the requirements of BS EN 378:2008 (parts 2 & 3) & where refrigeration systems containing ammonia are installed, the IoR Ammonia Refrigeration Systems Code of Practice? Global Warming Potential of the specified refrigerant(s) 10 or less? What is the target range Direct Effect Life Cycle CO2eq. emissions for the system? Cooling/heating capacity of the system Will a refrigerant leak detection and containment system be specified/installed?	Credits available		Credits achieved	
	Yes			
	No			
			kgCO2eq/kW coolth capacity kW	

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

These credits have not currently been assumed as it is likely that refrigerants will be used as part of this development and it is understood that these are very challenging to achieve, however it is recommended that the requirements of this issue are considered by the appropriate member of the design team to evaluate if they would be realistic to target.

Pol 02 NO_x Emissions

No. of BREEAM credits available	3	Available contribution to overall score	2.31%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

NO _x emission level - space heating NO _x emission level - cooling	200.00	mg/kWh
	200.00	mg/kWh

NOx emission level - water heating		
Does this building meet BREEAM's definition of a highly insulated building?		
Energy consumption: heating and hot water		
		200.00
		mg/kWh
		N/A
		TBC
		kWh/m2 yr

Total BREEAM credits achieved	0
Total contribution to overall building score	0.00%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

No credits are currently assumed as it is understood that ASHP may be considered or CHP which will likely prevent these from being achieved, this will be confirmed as the servicing plan for the building is developed.

Pol 03 Surface Water Run off

No. of BREEAM credits available	5	Available contribution to overall score	3.85%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

What is the actual/likely annual probability of flooding for the assessed site? Will a Flood Risk Assessment be undertaken? Will the site meet the BREEAM criteria for peak rate surface water run off? Will the site meet the criteria for surface water run off volume, attenuation and/or limiting discharge? Will the site be designed to minimise watercourse pollution in accordance with the BREEAM criteria?	Compliant?	Credits available	Credits achieved
	Low	2	2
	Yes		
	Yes	1	1
	Yes	1	1
	No	1	0

Total BREEAM credits achieved	4
Total contribution to overall building score	3.08%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

To achieve the flood risk credits a compliant FRA should be completed by a relevant professional considering all sources of flooding. If there is a risk of flooding then appropriate measures must be specified to increase the resilience and resistance of the building. Based on early information it is understood that the development will be in a low flood risk area and therefore 2 credits are assumed currently.
It is understood that the development will not result in a change in impermeable area therefore CN3.9 is applicable and the peak rate and volume of run off criteria will be achieved by default however drawings should be provided indicating pre and post development areas.
The minimisation of watercourse pollution credit is not assumed as it is understood that this can be difficult to achieve without onsite attenuation such as soakaways or swales.

Pol 04 Reduction of Night Time Light Pollution

No. of BREEAM credits available	1	Available contribution to overall score	0.77%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

Will the external lighting specification be designed to reduce light pollution?	Compliant?	Credits available	Credits achieved
	Yes	1	1

Total BREEAM credits achieved	1
Total contribution to overall building score	0.77%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

It is anticipated that the assessed building will have external lighting but that this will be developed in line with the requirements of this issue (specific lighting levels and auto switch off between 23.00 and 7.00 other than safety or security lighting). Please note that specific examples will be required to confirm how the external lighting complies with the LLP Guidance Notes for the Reduction of Obtrusive Light 2011.

It should be noted that external lighting is covered Hea 01 and Ene 03 also.

Pol 05 Noise Attenuation

No. of BREEAM credits available	1	Available contribution to overall score	0.77%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria

Will there be noise-sensitive areas/buildings within 800m radius of the development?	Compliant	Credits available	Credits achieved
Yes	Yes	1	1
Will a noise impact assessment be carried out and, if applicable, noise attenuation measures specified?	Yes		

Total BREEAM credits achieved	1
Total contribution to overall building score	0.77%
Total BREEAM innovation credits achieved	N/A
Minimum standard(s) level	N/A

Comments/notes:

It is understood that an acoustician is due to be appointed soon, therefore for the purpose of this pre-assessment it is assumed that a noise impact assessment will be commissioned considering the likelihood of noise arising from new fixed installations on the new building and they will make recommendations for attenuation measures that will be followed to allow this credit to be achieved.

INNOVATION

Inn 01 Innovation

No. of BREEAM innovation credits available	10	Available contribution to overall score	10.00%
		Minimum standards applicable	No

Assessment Criteria

Man 03 Responsible construction practices	Compliant?	Credits available	Credits achieved
Yes	Yes	1	1
Man 05 Aftercare	No	1	0
Hea 01 Visual Comfort	No	1	0
Hea 02 Indoor Air Quality	No	2	0
Ene 01 Reduction of energy use and carbon emissions	No	5	0
Wat 01 Water Consumption	No	1	0
Mat01 Life Cycle Impacts	No	3	0
Mat03 Responsible Sourcing of Materials	No	1	0

Wst01 Construction Waste Management Wst02 Recycled Aggregates Wst 05 Adaption to climate change	No	1	0
	No	1	0
	No	1	0

Number of approved innovation credits achieved?	
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Total BREEAM innovation credits achieved	1
Total contribution to overall building score	1.00%
Minimum standards level	N/A

Comments/notes:

