Graduate School of Education
Bespoke BREEAM Assessment






Prepared for:-
University of Bristol

01 July 2010

pehbsqX Z90 980 A
HG-BES-AB06-20

BREEAM

Halcrow Yolles

Prepared on behalf of Halcrow Yolles by

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Position BREEAM Assessor

Signature Natasha Fox

Approved on behalf of Halcrow Yolles by

Name Gerard Thacker

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Date 30 June 2010

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Executive Summary

Halcrow Yolles has been commissioned by the University of Bristol to carry out a Bespoke BREEAM assessment of the Graduate School of Education.

This report details the performance of The Graduate School of Education against the Bespoke BREEAM 2006 final criteria issued by the BREEAM centre. The building currently achieves a score of 75.70%, which translates into a BREEAM rating Excellent. The assessor has determined this rating using an auditable trail of evidence, all of which is referenced throughout this report.

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Bespoke BREEAM Certificate Information

Certificate Request Form	
Assessment Details	
BRE reference number (provided on registration.)*	HG-BES-AB06-20
Assessment type*	Bespoke BREEAM
Assessment stage*	D&P
Date of accompanying report*	01 July 2010
Net floor area assessed*	819m^2
Assessment Details required to appear on the certificate. (Please recreate this box for every certificate required, add extra rows for additional parties/stakeholders as required)	
Building name/Plot number/Building or site address*	Graduate School of Education University of Bristol, Helen Wodehouse Building, 35 Berkeley Square Clifton, Bristol BS8 1JA
Bespoke BREEAM rating*	Excellent
Bespoke BREEAM percentage*	75.70
Assessment scope	Area of building
Assessor organisation*	Halcrow Yolles
Assessor name*	Natasha Fox
Architect / Design Team	Architect – Capita Architecture Building Services Engineer – Aecom Structural Engineer – Hyder Consulting Quantity Surveyor – Faithful & Gould Project Manager – Capita Symonds
Developer	Cowlin Construction Ltd
Client	University of Bristol

Other	
Bespoke BREEAM version*	2006

* Mandatory information to be provided to BRE for a certificate to be issued.

Certificates to be sent to:	
Assessor [X] **Client** [ ] (a photocopy of the original certificate will always be sent to the assessor.)	
Company name: Halcrow Yolles	Number of certificates: 1
Contact person: Natasha Fox	
Address: Burderop Park, Swindon, Wiltshire, SN4 0QD	
Tel: 01793 816586	
Fax: 01793 815540	
Email: Natasha.fox@halcrowyolles.com	

Introduction

Halcrow Yolles has been commissioned to carry out a Bespoke BREEAM (**BRE E**nvironmental **A**ssessment **M**ethod) Design and Procurement assessment of the Graduate School of Education for the University of Bristol.

BREEAM

Bespoke BREEAM is part of the BREEAM family of environmental assessment methods (**BRE**'s **E**nvironmental **A**ssessment **M**ethod). It is a voluntary scheme that aims to quantify and reduce the environmental burdens of buildings by rewarding those designs that take positive steps to minimise their environmental impacts.

There are number of standard schemes under which certain building types can be assessed. These include Offices, Schools Retail and Court buildings. Where a non domestic building can not be assessed under one of these schemes it can be assessed under the Bespoke BREEAM scheme.

With a Bespoke BREEAM assessment BRE will develop criteria specific to the building and the functions within it (and there is an additional fee for this work). Information to develop the criteria is collected via a building questionnaire for the design team to complete or, for technically complex buildings, a kick of meeting is held.

Following the return of the questionnaire/attendance of the kick off meeting, BRE will produce a set of draft assessment criteria which are then issued to the assessor and design team for comment/discussion. Once the design team's comments have been received BRE will produce the final criteria and these will be issued to the appointed assessor. After this the assessor takes over and (as with a standard scheme) once the assessment is complete it will be submitted to BRE for quality checks and certification.

Projects are assessed using a system of credits. The credits are grouped within the following categories:

- Management
- Energy
- Transport
- Health and Well Being
- Water
- Materials and Waste
- Land use
- Site Ecological Value
- Pollution

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

Bespoke BREEAM Scoring

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

Due to the nature of Bespoke BREEAM projects not every credit is applicable to all function areas. To reflect this, credit scores are area weighted according to the floor area within the building that the credits have been achieved for. This recognises the environmental benefits of achieving a credit in an area that represents a large proportion of the building compared to where a credit is achieved in only a small proportion of the building.

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

The environmental weightings are as follows:

Issue Category	Issue Weighting
Management	0.15
Health and Wellbeing	0.15
Energy	-
Transport	-
Energy and Transport	0.25
Water	0.05
Materials and Waste	0.10
Land Use and Ecology	0.15
Pollution	0.15

The BREEAM rating bands are as follows:

RATING	SCORE
PASS	25
GOOD	40
VERY GOOD	55
EXCELLENT	70

Project Team

Position	Company and address / name
Client	University of Bristol Capital Projects Office 1-9 Old Park Hill Bristol BS2 8BB
Project Manager	David Reynolds Capita Symonds Quays Office Park Conference Avenue Portishead Bristol BS20 7LZ
Architect	Tony Jarvis Capita Architecture 2nd Floor Embassy House Queens Avenue Bristol BS8 1SB
Mechanical and Electrical Engineer	Michael Freke/ Jennifer Pryke AECOM, Portwall Place Portwall Lane, Bristol BS1 6NA
Structural Engineer	Graham Kinsman Hyder Consulting (UK) Limited 5th Floor The Pithay All Saints Street Bristol BS1 2NL
Quantity Surveyor	Marc Menear Faithful & Gould 160 Aztec West Amondsbury Bristol BS32 4TU
Acoustician	Stefan Hannah MACH Acoustics Ltd 25 Bishop Rd Bishopston Bristol BS7 8LS

Building Details

General	**Building**	Refurbishment of existing building
	Site	Clifton, at the University of Bristol
	Floor area	819m^2
Building fabric	**Walls**	Mostly existing with some new brickwork
	Roof	Existing with small addition of ventilation terminal, mostly timber
	Floor	Existing slab
Building Services	**Heating**	New gas boilers
	Ventilation	Natural ventilation
	Cooling	None
	Hot water	From the gas fired boiler

Summary of Building Performance

The Graduate School of Education currently achieves a score of **75.70%** against the Bespoke BREEAM criteria. This translates into an overall BREEAM rating of **Excellent.**

Score Calculation

Due to the area weighting of some credits, please refer to appendix A for the scoring spreadsheet which illustrates how the BREEAM score has been calculated.

The BREEAM rating bands show that a score of 75.70% translates into a BREEAM rating of Excellent.

RATING	SCORE
PASS	25
GOOD	40
VERY GOOD	55
EXCELLENT	70

Detailed Assessment Information

The following section summarises each of the bespoke credit requirements from BREEAM Bespoke 2006 technical guidance, and the information that has been provided relating to Graduate School of Education against each credit, to allow the appropriate number of credits to be awarded.

Management

M1 Commissioning

2 of 2 credits achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that an appropriate project team member has been appointed to monitor commissioning on behalf of the client to ensure commissioning will be carried out in line with current Building Regulations and (where applicable), best practice.

One credit is awarded where evidence provided demonstrates that seasonal commissioning will be carried out during the first year of occupation, post construction (or post fit out).

Credit validation

A copy of the University of Bristol Commissioning Specification[1] was provided. This states that *'the Employer will engage the Commissioning Management Works Contractor (CMWC) as an Artist and Tradesman to execute the following works under the terms of the contract'.*

This document requires the appointed individual to carry out commissioning in line with current Building Regulations and BSRIA/CIBSE guidelines where applicable. It was confirmed via email[2, 3] that Simon Turner of Core Group is acting as commissioning witness/monitor on behalf of the Client.

The specification states *'the CMWC shall ensure that his tender includes for the commissioning of all M & E Services detailed within the contract documentation'.* The systems are listed as below (with a note that the systems are not limited to this list):

- General ventilation systems
- Comfort cooling systems
- Domestic hot and cold water systems
- Disposal systems
- Compressed air

- Vacuum pump system
- VRV cooling distribution
- Cold rooms
- Air conditioning unit
- Building Management systems (including all associated automatic controls and interface systems)
- Metering
- Fire alarm systems
- Disabled alarm systems
- Lighting and associated control systems
- Emergency lighting systems
- I.T. systems (voice and data)
- Card access control systems
- CCTV systems
- Intruder alarm systems
- Electrical power systems
- Lightning protection systems
- Small power systems
- Earthing and bonding systems
- Audio Visual
- Platform lift

The specification also states that:

'In addition the following shall be carried out over a 12 month Defects Period:

a. *Testing of all building services under full load conditions, i.e. heating equipment in mid winter, cooling/ventilation equipment in mid summer, and under part load conditions (spring/autumn).*

b. *Where applicable, testing should also be carried out during periods of extreme (high or low) occupancy.*

c. *Interviews with building occupants (where they are affected by the complex services) to identify problems or concerns regarding the effectiveness of the systems.*

d. *Re-commissioning of systems (following any work needed to serve revised loads), and incorporating any revisions in operating procedures into the O&M manuals'*

2 of 2 credits awarded.

Credit references

1. University of Bristol, Specification for Commissioning Works, Graduate School Of Education, Ref CMWC/1 dated November 2008. Attached in email from M Menear (Faithful & Gould) to N Fox (Halcrow Yolles) dated 16/12/08
2. Email from J Pryke (Aecom) to N Fox (Halcrow Yolles) dated 17/06/10. RefpehbsqE20100617-100203U.msg
3. Email from S Turner (Core Group) to N Fox (Halcrow Yolles) dated 17/06/10. Ref pehbsqE20100617-123613U.msg

Further information/action

None

M4 Considerate constructors — 2 of 2 credits achieved

Credit Criteria

One credit is awarded where evidence provided demonstrates that there is a commitment to comply with best practice site management principles.

Two credits are awarded where evidence provided demonstrates that there is a commitment to go significantly beyond best practice site management principles.

Credit validation

The tender documents[1] included a clause that requires the Contractor to achieve certification under the Considerate Constructors Scheme and to achieve a score of at least 32 out of 40 points. A copy of the site inspection report was provided via email which confirms that the score was actually 33.5 with more than 3 in each section.

2 of 2 credits awarded.

Credit references

1. University of Bristol Graduate School of Education, Tender Document, Faithful & Gould, dated 24/07/09 Section A32 page 62. Attached in email from M Menear (Faithful & Gould) to N Fox (Halcrow Yolles) dated 16/07/09
2. Email from L McCarthy (Cowlin) to N Fox (Halcrow Yolles) dated 23/02/10

Further information/action

None

M5 Construction site impacts

4 of 4 credits achieved

Credit criteria

Credits are available where evidence provided demonstrates that 2 or more of items a-g, listed below are achieved.

Credits are available where evidence provided demonstrates that 4 or more of items a-g, listed below are achieved.

Credits are available where evidence provided demonstrates that 6 or more of items a-g, listed below are achieved.

a. monitor, report and set targets for CO_2 or energy arising from site activities;

b. monitor, report and set targets for CO_2 or energy arising from transport to and from site;

c. monitor, report and set targets for water consumption arising from site activities;

d. monitor construction waste on site;

e. sort and recycle construction waste;

f. adopt best practice policies in respect of air (dust) pollution arising from the site;

g. adopt best practice policies in respect of water (ground and surface) pollution occurring on the site.

One additional credit where evidence provided demonstrates that all site timber is responsibly sourced.

Credit validation

The tender documents[1] include a sufficient clause which ensures the Contractor is required to comply with 6 of the items a-g above. Checklist A3 was included in the appendix therefore the Contractor is fully aware of the requirements. The clause also requires the Contractor to responsibly source all site timber in line with the requirements.

4 of 4 credits awarded.

Credit references

1. University of Bristol Graduate School of Education, Tender Document, Faithful & Gould, dated 24/07/09 Section A32 page 62. Attached in email from M Menear (Faithful & Gould) to N Fox (Halcrow Yolles) dated 16/07/09

Further information/action

None

M8 Consultation

2 of 2 credits achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that consultation has been, or is being, undertaken and feedback given to the local community and building users. In addition, advice should also have been sought from any relevant national and local history, archaeological bodies or military history groups regarding the heritage value of the building/site/surroundings.

Two credits are awarded where, in addition to the above, evidence provided demonstrates that changes to the design and/or action has been taken as a result of the above consultation process. This should include the protection of any parts of the building (or site) having historic or heritage value in accordance with independent advice from English Heritage or a relevant local heritage body.

Credit validation

The Project Manager provided a list of stakeholders, a consultation plan, meeting minutes, end stage document and the agenda for the Stage 2 presentation via email[1]. The end stage document outlines comments from the consultation and this was issued to the stakeholders for them to provide further feedback.

The Project Manager confirmed that '*User consultations have been undertaken through out the design to develop the current approved design. One key item that came out of this consultation process was the request to include the Library relocation to the ground floor in the scope of works. The Design Team reviewed this request and, in conjunction with the UoB Library Services, design options were developed for review. Following this review it was decided to incorporate the library in the project*'. Drawings confirming this were provided[2, 3, 4, 5].

The Project Manager further confirmed via email[6] that the relevant bodies were consulted and have confirmed that the existing building and site is none of the following:

- Buildings of local architectural interest

- Buildings within areas of outstanding natural beauty and national parks

- Scheduled ancient monuments buildings in historic parks and gardens

- Buildings or sites with distinguishing local architectural characteristics

- Buildings within areas of archaeological significance

2 of 2 credits awarded.

Credit references

1. Email from T Davis (Capita Symonds) to N Fox (Halcrow Yolles) dated 18/12/08

2. Drawing 061022, Capita Architecture, Revision P00, dated 20/03/08 – Proposed First Floor Plan – Base Option
3. Drawing 061021, Capita Architecture, Revision P00, dated 20/03/08 – Proposed Ground Floor Plan – Base Option
4. Drawing 061121, Capita Architecture, Revision P00, dated 20/03/08 – Proposed Ground Floor Plan – Base Option Plus Library
5. Drawing 061122, Capita Architecture, Revision P00, dated 20/03/08 – Proposed First Floor Plan – Base Option Plus Library
6. Email from N Hellier (Capita Symonds) to N Fox (Halcrow Yolles) dated 16/07/09. Ref pehbsqE20090716-154129U.msg

Further information/action

None

M12 Building user guide

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates the provision of a simple guide that covers information relevant to the tenant/occupants and non-technical building manager on the operation and environmental performance of the building.

Credit validation

The tender documents[1] include a clause that requires the Contractor to produce a non-technical user guide for both the general user and the facilities manager, in line the BREEAM requirements. The requirement within the tender document states:

'The Contractor shall produce a "non technical" Building User's Guide complying with BREEAM standards. The Building User Guide is not the same document as the O&M manual; it can be contained within it, but must be extractable as a single, standalone document. The Building User Guide must contain the following information, aimed at both the non-technical Facilities Management Team (FM) or Building Manager and the general users:

- 1. Building Services Information

General User – Information on heating, cooling and ventilation in the building and how these can be adjusted, e.g. thermostat location and use, implications of covering heating outlets with files, bags etc. and use of lifts and security systems.

FM – as above plus a non technical summary of the operation and maintenance of the building systems (including BMS if installed) and an overview of controls.

- 2. Emergency Information

General User – Include information on the location of fire exits, muster points, alarm systems and fire fighting systems.

FM – As above plus additional details of location and nature of emergency and fire fighting systems, nearest emergency services, location of first aid equipment.

- 3. Energy & Environmental Strategy

This should give occupiers information on energy efficient features and strategies relating to the building, and also provide an overview of the reasons for their use, e.g. economic and environmental savings. Information could include:

General User – Include information on the operation of innovative features such as automatic blinds, lighting systems etc., and provide guidance on the impacts of strategies covering window opening and the use of blinds, lighting and heating controls.

FM – As above plus information on air tightness and solar gain (e.g. the impact of leaving windows/doors open in an air conditioned room or use of blinds in winter with respect to solar gain). Also include energy targets and benchmarks for the building type, information on monitoring such as the metering & sub-metering strategy and how to read, record and present meter readings.

- 4. Water Use

General User – Include details of water saving features and their use and benefits e.g. aerating taps, low flush toilets, leak detection, metering etc.

FM – As above plus details of main components (including controls) and operation. Recommendations for system maintenance and its importance e.g. risk of legionella.

- 5. Transport Facilities

General User – Include details of car-parking and cycling provision, local public transport information, maps and timetables. Information on alternative methods of transport to the school, e.g. walking bus schemes, car sharing schemes, local 'green' transport facilities, cycle routes.

FM – as above plus additional information on conditions of access, maintenance and appropriate use of car parking and cycling facilities e.g. number of spaces provided.

- 6. Materials & Waste Policy

General User – Include information on the location of recyclable materials storage areas and how to use them appropriately.

FM – As above plus information on recycling, including recyclable building fit out components, waste storage and disposal requirements. Include examples of Waste Management Strategies to be inserted by Client/Tenant and any special cleaning/maintenance requirements for particular materials and finishes.

- 7. Re-fit/Re-arrangement Considerations

General User – Include an explanation of the impact of re-positioning of furniture, i.e. may cover grilles/outlets, implications of layout change, e.g. installation of screens.

FM – As above plus a list of environmental recommendations for consideration in any refit. Relevant issues covered in BREEAM should be highlighted, e.g. the use of natural ventilation, use of Green Guide 'A' rated materials, re-use of other materials etc. Highlight the potential impact of increasing occupancy and any provision made in the original design to accommodate future changes.

- 8. Reporting Provision

General User – Include contact details of FM, maintenance team, and/or help desk facility. Also include details of any building user group if relevant.

FM – As above plus contact details of suppliers/installers of equipment and services and their areas of responsibility for reporting any subsequent problems.

- 9. Training

Provide details of the proposed content and suggested suppliers of any training and/or demonstrations that will be needed in the use of the building's services, features and facilities. This could include:

General User – Training in the use of any innovative/energy saving features.

FM – As above and also include training in emergency procedures and setting up, adjusting, and fine tuning, the systems in the building.

- 10. Links & References

Include links to other information including websites, publications and organisations. In particular, the Carbon Trust should be referenced.

General

Where further technical detail may be required there should be references to the appropriate sections in the Operation and Maintenance Manual.'

Credit awarded.

Credit references

1. University of Bristol Graduate School of Education, Tender Document, Faithful & Gould, dated 24/07/09 Section A37 page 86. Attached in email from M Menear (Faithful & Gould) to N Fox (Halcrow Yolles) dated 16/07/09

Further information/action

None

M14 Publication of building information

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that the design team are committed to publicising information about the new development via the internet, newsletters, site visits, presentations etc

Credit validation

The Architect confirmed via email[1] that all of the items under Part A of the requirements have been allocated to a design team member. This included:

a. BREEAM Rating and score

b. Basic Building Cost- £/m^2

c. Services Costs - £/m^2

d. External Works - £/m^2

e. Gross Floor Area - m^2

f. Total area of site – hectares

g. Area of each type of function space - m^2

h. Area of circulation - m2

i. Area of storage - m2

j. % area to be used by community (where relevant)

k. % area of building to be used by community (where relevant)

l. Predicted electricity consumption – kWh/m2

m. Predicted fossil fuel consumption – kWh/m2

n. Predicted renewable energy generation – kWh/m2

o. Predicted water use – m3/person/year

p. % predicted water use to be provided by rainwater or grey water

q. A basic description of the project

r. A basic description of the building

s. The key innovative and low impact design features of the building

t. The steps taken during the construction phase process to reduce environmental impacts, i.e. innovative construction management techniques

u. A list of any social or economically sustainable measures achieved/piloted

The Project Manager confirmed via email[2] that this information will be displayed on the University of Bristol website. The website will be updated with current project information on a monthly basis. Users are required to attend regular meetings during both design and construction. Sample meetings agendas were provided and it was noted which meetings the users were required to attend.

Credit M8 Consultation has also been achieved.

Credit awarded.

Credit references

1. Email from K Stewart (Capita) to N Fox (Halcrow Yolles) dated 02/10/08
2. Email from T Davis (Capita Symonds) to N Fox (Halcrow Yolles) dated 18/12/08

Further information/action

None

Health and Wellbeing

HW1 Daylighting

0 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that at least 80% of floor area is adequately day-lit.

Credit validation

Daylight calculations have not been carried out as it was anticipated the design would not meet the requirements.

Credit withheld.

Credit references

N/A

Further information/action

None

HW2 View out

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that all desks are within a 7m radius of a window.

Credit validation

The Architect provided drawings[1,2,3,4] which confirm that all desks are within 7m of a window. It was confirmed[5] that the view out in all areas from seated level is not of the sky, but of an object or building etc.

Credit awarded.

Credit references

1. Capita Architecture, Drawing AR-061121, Revision P06 dated 20/03/08 – Proposed Ground Floor Plan
2. Capita Architecture, Drawing AR-061122, Revision P05 dated 20/03/08 – Proposed First Floor Plan

3. Capita Architecture, Drawing AR-061123, Revision P06 dated 20/03/08 – Proposed Second Floor Plan
4. Capita Architecture, Drawing AR-061124, Revision P06 dated 20/03/08 – Proposed Third Floor Plan
5. Email from K Stewart (Capita) to N Fox (Halcrow Yolles) dated 24/11/08

Further information/action

None

HW3 Glare control — 1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that an occupant controlled glare control system (e.g. internal or external blinds) is fitted to all areas where computer workstations will be located or close work will be undertaken.

Credit validation

The Architectural Scope of Works[1] confirms that all windows are to be fitted with solar control blinds. In addition to this, all windows in seminar/teaching rooms will have 70% dim out blinds to all windows.

Credit awarded.

Credit references

1. Capita Architecture, Scope of Works for University of Bristol Graduate School of Education, dated 27/08/08 – page 2

Further information/action

None

HW4 High frequency lighting — 1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that high frequency ballasts are installed on all fluorescent and compact fluorescent lamps.

Credit validation

The Building Services Engineer confirmed in a letter[1] that *'all fluorescent and compact fluorescent lamps to occupied areas are specified with high frequency ballasts meeting the requirements of BREEAM credit HW4'.*

This is confirmed in the Mechanical and Electrical Specification[2].

Credit awarded.

Credit references

1. Letter from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 15/07/09 (Halcrow ref pehbsqE20090715-1511L)
2. Revised Scheme Mechanical and Electrical Performance Specification Tender – July 2009 Y73sch – Schedule of Luminaires and Lamps (p 305)

Further information/action

None

HW5 Internal and external lighting levels — 1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that all internal and external lighting, where relevant, is specified in accordance with the appropriate maintained illuminance levels (in lux) recommended by CIBSE.

Credit validation

The Building Services Engineer confirmed in a letter[1] that *'the lighting installation throughout the building shall be designed in compliance with the CIBSE Code for Lighting. For areas where computer screens are regularly used, for example, the offices; the lighting is specified to be designed in accordance with CIBSE Lighting Guide 7, Lighting for Offices. External lighting is not within the scope of this refurbishment therefore no external lighting is specified.'*

The Mechanical and Electrical Specification[2] states:

'Provide a lighting installation throughout the building to meet the design and aesthetics requirements for respective areas in accordance with the illumination levels indicated within the room data sheets and in compliance with CIBSE lighting guides and room data sheets'.

'Provide a standard maintained illuminance as detailed above for each area with a maintenance factor of 0.8 in accordance with CIBSE standards.

'Illuminance levels: Where not stated in the Schedule of Common Design Criteria (Schedule A13), ensure that the maintained illuminance levels meet but do not significantly exceed the CIBSE Code for Lighting…'

The room data sheets appended to the letter show the lighting levels to be compliant.

Credit awarded.

Credit references

1. Letter from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 15/07/09 (Halcrow ref pehbsqE20090715-1511L)
2. Revised Scheme Mechanical and Electrical Performance Specification Tender – July 2009 Section V21 – General Lighting p26-27 and 95-96 and Y73sch – Schedule of Luminaires & Lamps p302-305

Further information/action

None

HW6 Lighting zones

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that lighting, in all occupied areas, is zoned to allow separate control.

Credit validation

Lighting in the kitchen area will be controlled via PIR presence detection and local control. Due to the size and nature of the space there is no need for separate zones. The meeting rooms and offices are also small enough to negate the need for zoning and are controlled via a local switch[3, 4].

The lighting in the library will be controlled manually in zones for stacks, reading and counter areas with window fittings being switched separately[5].

The Building Services Engineer confirmed[1] the following tender requirements:

'Lighting within the video and all seminar/teaching rooms will be fully dimmable with the use of DALI compatible control equipment integral within the luminaires, and suitable control units or dimming switches to provide on/off and variable illuminance levels. Provide a minimum of 4 separate lighting circuits and switches within the teaching/seminar rooms for overall lighting control. Within the library provide a full scene setting DALI panel behind the issue desk to provide full control of all the library lighting in different zones.

The Mechanical and Electrical Specification[2] confirms the statement above.

Credit awarded for the teaching area, video editing, offices, library, kitchen and meeting rooms.

Credit references

1. Letter from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 15/07/09 (Halcrow ref pehbsqE20090715-1511L)
2. Revised Scheme Mechanical and Electrical Performance Specification Tender –July 2009 Section V21 – General Lighting p26-27
3. Letter from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 17/12/08. (Halcrow ref pehbsqE20081217-1558l)
4. Email from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 21/07/09 (Halcrow ref pehbsqE20090721-133938U.msg)
5. Drawing 60045089/E005, AECOM, Rev -, dated December 2008 – Typical Library Lighting Layout (attached with letter[3]).

Further information/action

None

HW8 Potential for natural ventilation

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that external façade windows to all occupied areas are openable.

Credit validation

The Building Services Engineer confirmed in a letter[1] that the majority of the building is to be ventilated by natural means through the external opening windows. An enhanced passive ventilation system is required to assist the natural ventilation and to minimise overheating risk in the seminar/teaching rooms. Calculations show that the passive ventilation will increase the ventilation through the building due to the natural buoyancy stack effect, aided by external wind pressure forces when external conditions are favourable.

It was also confirmed that the seminar rooms have plan depth greater than 7m so calculations were based on CIBSE AM10 utilising the enhanced passive ventilation system to provide adequate cross-flow ventilation to the rooms.

Drawings[2,3,4] have been provided which show the ventilation. Calculations[5] have been provided.

The above is also confirmed in the Mechanical and Electrical Specification[6].

Credit awarded.

Credit references

1. Letter from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 15/07/09 (Halcrow ref pehbsqE20090715-1511L)
2. Drawing 60045089/M101, AECOM, Revision -, dated July 2009 – Revised Scheme First Floor Natural Ventilation Strategy
3. Calculation sheet, AECOM, dated 15/07/09 – Reduced Scope Natural Ventilation Provision – Staircase Stack Vent_rev5
4. Revised Scheme Mechanical and Electrical Performance Specification Tender – July 2009 Section U10 – Ventilation Supply/Extract p19-20

Further information/action

None

HW9 Internal air pollution

0 of 1 credit achieved

Credit criteria

One credit is awarded where air intakes serving occupied areas avoid major sources of external pollution and recirculation of exhaust air.

Credit validation

Credit not sought.

Credit withheld.

Credit references

N/A

Further information/action

None

HW11 Ventilation rates

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that each space within the development achieves recommended minimum fresh air rates.

Credit validation

The calculations supporting the natural ventilation strategy[1] confirm that the ventilation rates in the offices will be 15 litres per second per person and in the teaching space will be 10 litres per second per person.

The space is designed to be naturally ventilated and BREEAM credit HW8 Potential for Natural Ventilation has been achieved by calculation.

Calculations[1] demonstrate that the background ventilation is designed to meet the Building Regulations Part F.

Credit awarded.

Credit references

1. Calculation sheet, AECOM, dated 23/09/08 – Natural Ventilation Provision – Staircase Stack Vent_rev4 Stage 2

Further information/action

None

HW14 Thermal comfort

1 of 1 credit achieved

Credit criteria

One credit is awarded where thermal comfort levels are assessed at design stage, this is used to evaluate appropriate servicing options, and appropriate thermal comfort levels are achieved.

Credit validation

The Building Services Engineer provided a copy of the thermal comfort study [1,2]. The full thermal analysis was undertaken using Integrated Environmental Solutions (IES) software which is CIBSE compliant.

The Building Services Engineer confirmed in a letter[1] that the thermal modelling shows that all rooms within the building satisfy the requirements of not exceeding 28°C by more than 1% of the occupied year (the requirements of CIBSE Guide A).

The weather data file used was Cardiff as this is the nearest data region to Bristol.

It is noted that the original model was undertaken at Stage 1 of the design and since then some changes have occurred to the proposed layout of the building. Subsequent CIBSE AM10 calculations have been carried out on the revised scope plans to ensure the free areas between the teaching rooms/open plan office are adequate to provide sufficient free area for the enhanced natural ventilation strategy[3].

Credit awarded.

Credit references

1. Letter from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 15/07/09 (Halcrow ref pehbsqE20090715-1511L)
2. Thermal Comfort and Overheating Report, AECOM, Graduate School of Education – Base Option plus Library_rev2 dated September 2008
3. Reduced Scope Additional Thermal Comfort and Overheating Calculation, AECOM – Room 103 and Room 105 Natural Ventilation Strategy, dated April 2009

Further information/action

None

HW15 Thermal zoning

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that local control is available for temperature adjustment in each area to reflect differing load requirements.

Credit validation

The Mechanical and Electrical Specification[1] states,

'The heating system shall allow independent occupant thermal control, in all separate rooms and areas within the building. Zoning shall allow separate occupant control to be made of each perimeter area (within 7m of an external wall) and any central zone (greater than 7m from an external wall). This shall be achieved by the use of TRV's'.

There are no long lag systems such as underfloor heating.

Credit awarded.

Credit references

1. Revised Scheme Mechanical and Electrical Performance Specification Tender – July 2009 Section T20 – Primary Heat Distribution p17-18

Further information/action

None

HW16 Microbial contamination

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that the risk of waterborne and airborne legionella contamination has been minimised.

Credit validation

The Building Services Engineer confirmed in a letter[1] that all domestic water services (hot and cold water) shall be designed and installed according to the guidance contained in CIBSE TM13 and HSE's Approved Code of Practice and Guidance L8 – Legionnaires Disease: The Control of Legionella bacteria in water systems. There is no humidification[2].

The above is also confirmed throughout the Mechanical and Electrical Specification[3].

Credit awarded.

Credit references

1. Letter from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 15/07/09 (Halcrow ref pehbsqE20090715-1511L)
2. Email from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 21/07/09 (Halcrow ref pehbsqE20090721-112447U.msg)
3. Revised Scheme Mechanical and Electrical Performance Specification Tender – July 2009 Section S10 Cold Water and S11 Hot Water, p13-16

Further information/action

None

HW17 Acoustic performance

2 of 2 credits achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that the building design can be shown to achieve indoor ambient noise levels in unoccupied spaces in accordance with BS8233:1999.

One credit is awarded where evidence provided demonstrates the reverberation times are in compliance with BS8233 1999 table 8 or DfES Building Bulletin 93 for the following areas only:

- Video editing
- Teaching rooms

Credit validation

An Acoustic Consultant has been appointed and a copy of the Acoustic Report was provided[1] which was based on a noise survey of the site carried out in January 2008. The report states,

'It is clear from Table 3 that the predicted internal noise levels are all below BS8233's 'Reasonable' maximum noise levels. It is therefore seen that the development is in compliance with point A's requirements and that the point should be awarded'.

The noise levels are stated in the report and the report complies with the BREEAM requirements.

A copy of the Acoustic Specification was provided[2] which contained drawings showing the ambient noise levels to be achieved.

The first credit can be awarded.

A second document[3] was provided once the design team was able to confirm reverberation times and this confirms that the video editing and teaching rooms shall meet the reverberation requirements as set out by BB93.

2 of 2 credits awarded.

Credit references

1. MACH Acoustics, University of Bristol Graduate School of Education Berkeley Square, Noise Assessment/BREEAM, Revision 2 dated 14/08/08, Ref GSE-CA-ZZZZ-000-RPT-AR-JA1006 P01 Environmental Noise Assessment.pdf
2. MACH Acoustics, University of Bristol Graduate School of Education Berkeley Square, Acoustic Specifications, Revision 2 dated 12/08/08, Ref GSE-CA-ZZZZ-000-RPT-AR-JA1008 P01 Acoustic Performance Specification.pdf
3. MACH Acoustics, University of Bristol Graduate School of Education, Acoustic BREEAM credit HW17 – B, dated 05/11/08. Attached in email from K Stewart (Capita) to G Thacker (Halcrow Yolles) dated 24/11/08

Further information/action

None

Energy

E1 Reduction of CO_2 emissions

0 of 15 credits achieved

Credit criteria

Up to 15 credits are awarded where the building demonstrates a percentage improvement above the requirement for CO_2 emissions as set out in the Building Regulations.

Credit validation

Credits not sought as the design team felt that no credits could be achieved here due to the existing performance of the building.

Credits withheld.

Credit references

N/A

Further information/action

None

E2 Sub-metering of substantial energy uses

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence is provided to demonstrate the provision of direct sub-metering of substantive energy uses within the building.

Credit validation

The Building Services Engineer confirmed in a letter[1,6] that there shall be separate sub meters for the lighting, small power and space heating. The library will also be sub-metered.

The general lighting and small power distribution board will have separate metering for the lighting. There will be separate low temperature hot water (LTHW) heat meters with a pulsed output to the LTHW heating circuits to each floor.

The Building Services Engineer also provided drawings[2,3] and sections S11, T20 and V20 of the Mechanical and Electrical Specification[4] which confirm the above.

There are no major fans (only small local ventilation systems) and no humidification or cooling[5].

Credit awarded.

Credit references

1. Letter from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 15/07/09. (Halcrow ref pehbsqE20090715-1511L)
2. Drawing 60045089/E302, AECOM, Tender Issue, dated 15/07/09 – Revised Scheme Proposed Electrical Schematic
3. Drawing 60045089/M104, AECOM, Tender Issue, dated 15/07/09 – Revised Scheme Basement and Ground Floor Proposed Heating Layouts
4. Revised Scheme Mechanical and Electrical Performance Specification, AECOM, Tender Issue, dated July 2009, Sections S11, S10, T20 and V20. Attached in letter[1]
5. Email from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 21/07/09. (Halcrow ref pehbsqE20090721-112447U.msg)
6. Email from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 29/03/10. Ref pehbsqE20100329-165142U.msg

Further information/action

None

E3 Sub-metering of areas/tenancy

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates sub-metering of energy use by tenancy/areas is installed within the building.

Credit validation

The Building Services Engineer confirmed in a letter[1] that there shall be separate sub meters for each floor plate within the building. There will be separate LTHW heat meters with a pulsed output to the LTHW circuits to each floor. Each floor shall have a separately metered general lighting and small power distribution board with separate metering on the lighting, located in the main electrical riser.

The library will have a separate LTHW heat meter with pulsed output and shall also have separately metered general lighting and small power. This was confirmed on drawings attached with the letter[4,5].

Credit awarded.

Credit references

1. Letter from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 15/07/09 (Halcrow ref pehbsqE20090715-1511L)
2. Drawing 60045089/E302, AECOM, Rev -, dated July 2009 – Revised Scheme Proposed Electrical Schematic
3. Drawing 60045089/M104, AECOM, Rev -, dated July 2009 – Revised Scheme Basement and Ground Floor Proposed Heating Layouts
4. Drawing 60045089/M105, AECOM, Rev -, dated July 2009 – Revised Scheme First Floor Proposed Heating Layouts

Further information/action

None

E4 External lighting — 1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that energy efficient external luminaires are specified and all light fittings controlled for the presence of daylight.

Credit validation

External lighting is not within the scope of this refurbishment, therefore the credit can be achieved by default.

Credit awarded.

Credit references

1. Letter from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 15/07/09 (Halcrow ref pehbsqE20090715-1511L)

Further information/action

None

E(Eco)4	Provision of energy efficient white goods – fridges / freezers	1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that all fridges, freezers and fridge/freezers have an A+ rating under the EU Energy Efficiency Labelling Scheme.

Credit validation

The Architectural Scope of Works[1] confirms that all white goods will be A+ rated as supplied by the user. The Client subsequently confirmed this via email[2].

Credit awarded.

Credit references

1. Capita Architecture, Scope of Works for University of Bristol Graduate School of Education, dated 27/08/08 – page 2
2. Email from K O'Flaherty (University of Bristol) to N Fox (Halcrow Yolles) dated 21/07/09 (Halcrow ref pehbsqE20090721-140844U.msg)

Further information/action

None

Transport

T1 Provision of public transport

4 of 5 credits achieved

Credit criteria

Up to 5 credits are awarded where the number of credits awarded is based on the proximity of the development to a public transport node with a good service frequency. This is determined using the Bespoke BREEAM public transport table.

Credit validation

The Architect provided a copy of the bus timetable via email[1] which shows the bus frequency to be 10 minutes. The Client provided a Travel Map in a BREEAM meeting[2] and this highlights all of the bus stops within the vicinity and the relevant routes that service these stops.

The Architect sent information on bus stop location via email[3] showing that the bus stops are within 250m via a safe pedestrian route. According to the transport table in the BREEAM guidance, four credits can be awarded.

4 of 5 credits awarded.

Credit references

1. Email from K Stewart (Capita) to N Fox (Halcrow Yolles) dated 18/06/08
2. Bristol City Travel Map, hard copy. Saved as pehbsqE20081007-1459a.pdf
3. Email from K Stewart (Capita) to N Fox (Halcrow Yolles) dated 04/07/08

Further information/action

None

T2 Transport CO2

5 of 5 credits achieved

Credit criteria

Up to 5 credits are awarded as follows;

1 credit where total commuting CO2 emissions are estimated to be <1200 kg/person/year

2 credits where total commuting CO2 emissions are estimated to be <1000 kg/person/year

3 credits where total commuting CO2 emissions are estimated to be <800 kg/person/year

4 credits where total commuting CO2 emissions are estimated to be <600 kg/person/year

5 credits where total commuting CO2 emissions are estimated to be <400 kg/person/year

Credit validation

There are no car parking spaces as part of this refurbishment[1] and the building occupancy is approximately 441. This has been inputted into the T2 Calculator (please see appendix).

5 of 5 credits awarded.

Credit references

1. Email from K Stewart (Capita) to N Fox (Halcrow Yolles) dated 18/06/08

Further information/action

None

T3 Proximity to key amenities — 1 of 1 credit achieved

Credit criteria

1 credit is awarded where the site is within 500m of the following amenities:

a. Post box
b. Grocery shop as follows;

Credit validation

The Architect confirmed via email[1] that there is a post box and a Sainsbury's supermarket within 500m of the site. This was shown in a presentation document attached to the email which included a plan of the site.

The plan confirmed that the post box is 257.5m away and the supermarket is 321.8m away. The plan had a clear scale and the safe pedestrian route to the amenities was marked.

Credit awarded.

Credit references

1. Email from K Stewart (Capita Architecture) to N Fox (Halcrow Yolles) dated 04/07/08

Further information/actions

None

T4 Proximity to other amenities

1 of 1 credits achieved

Credit criteria

1 credit is awarded where the site is within 1000m of at least 5 of the following amenities:

a. Postal facility
b. Grocery shop (only qualifies where more than 500m from the site)
c. Bank/cash point
d. Pharmacy
e. Doctors surgery/medical centre
f. Community centre
g. Leisure centre
h. Open access public place
i. Place of worship
j. Public house

Credit validation

The Architect confirmed via email[1] that the following amenities are within 1000m of the site:

- Natwest cash machine/bank (241.4m)
- Boots pharmacy (338m)
- Health centre (965.6m)
- Bristol University Student Union/Community Centre (820.8m)
- University of Bristol Leisure Centre with swimming pool (788.6)
- Brandon Hill open space (112.7m)
- Saint Mary's on the Quay church (659.8m)
- The Berkeley Public House (144.84m).

This was shown in a presentation document attached to the email which included a plan of the site. The plan had a clear scale and the safe pedestrian route to the amenities was marked.

Credit awarded.

Credit references

1. Email from K Stewart (Capita Architecture) to N Fox (Halcrow Yolles) dated 04/07/08

Further information/action

None

T5 Cyclist facilities

0 of 2 credits achieved

Credit criteria

2 credits are awarded as follows;

1 credit where evidence is provided to demonstrate that there is adequate provision of covered, secure and well lit cycle racks storage provided for staff & visitors.

2 credits where, in addition to the above, information is provided to demonstrate that there is adequate provision of washing and changing facilities available for staff use.

Credit validation

Credits not sought as the existing cycle facilities are not compliant with the requirements. No new cycle facilities have been provided as a result of the refurbishment.

Credits withheld.

Credit references

N/A

Further information/action

None

T6 Pedestrian and cyclist safety

0 of 1 credits achieved

Credit criteria

1 credit is awarded where evidence provided demonstrates that the site layout has been designed to minimise risks to pedestrians and cyclists.

Credit validation

Credit not sought as the external site is not being modified as part of the project.

Credit withheld.

Credit references

N/A

Further information/action

None

T8 Travel Plan

1 of 1 credits achieved

Credit criteria

1 credit is awarded where evidence is provided to demonstrate that a travel plan has been developed and tailored to the specific needs of the users of the assessed development.

Credit validation

The Head of Sustainability at the University of Bristol confirmed via email[1] that the University has an existing Travel Plan[2] in place which covers most of the requirements such *as 'bike facilities, car parking charges, car sharing, priority parking for car sharing, interest free loans for bikes/motorbikes and public transport, bike and walking buddying'*. The Head of Sustainability at the University confirmed via email[3] that this travel plan will be tailored to meet the BREEAM requirements and to be specific to this building and a copy will be made available for the Post Construction Review.

As this project is a refurbishment to an existing building within the University, the commitment to update the Travel Plan is deemed sufficient.

Credit awarded.

Credit references

1. Email from M Wiles (University of Bristol) to N Fox (Halcrow Yolles) dated 15/03/10. Ref pehbsqE20100315-170503U.msg
2. University of Bristol Travel Plan, http://www.bristol.ac.uk/transportplan/, accessed on 15/03/10
3. Email from M Wiles (University of Bristol) to N Fox (Halcrow Yolles) dated 17/03/10. Ref pehbsqE20100317-092554U.msg

Further information/action

None

Water

W1 Water consumption

2 of 3 credits achieved

Credit criteria

Two credits are awarded where evidence provided demonstrates that WCs are designed to minimise the consumption of potable water.

One credit are awarded where evidence provided demonstrates that other sanitary facilities are designed to minimise the consumption of potable water.

Credit validation

The Architectural Specification[1] states that all WCs shall be 6/4litre dual flush cisterns. The Architect confirmed via email[2] that flow restrictors shall be fitted into the taps direct from the manufacturer, rather than inserts being fitted later on. An email from BRE[3] confirms that this is an acceptable alternative to the listed options in the BREEAM guidance (such as aerating taps etc.).

The Architect provided technical details of the Doc M shower installation via email and an extract of the Architectural Specification[4] confirming that the shower flow rate will be limited to 7 litres/minute at 3 bar pressure. This also included details of a WC within the shower area which shall have a flush volume of 4.5 litres, which can be likened to a 6/4litre dual flush.

The Architect provided a copy of the final specification via email[6] which states that operating instructions for the WCs shall be provided.

The Architect confirmed via email[5] that there are no urinals or washing machines.

2 of 3 credits awarded.

Credit references

1. Architectural Specification, Capita Architecture, Section N13, Tender Issue, dated 08/09/09. Attached in email[6]
2. Email from K Stewart (Capita Architecture) to N Fox (Halcrow Yolles), dated 19/06/09. Ref pehbsqE20090619-113906U.msg
3. Email from A Ndukwe (BRE) to N Fox (Halcrow Yolles), dated 09/04/09. Ref pehbsqB20090409-165404U.msg
4. Armitage Shanks Doc M Shower Pack details and specification. Attached in email[2]
5. Email from K Stewart (Capita Architecture) to N Fox (Halcrow Yolles), dated 22/06/09. Ref pehbsqE20090622-114713U.msg

6. Email from K Stewart (Capita Architecture) to N Fox (Halcrow Yolles), dated 09/09/09. Ref pehbsqE20090909-172546U.msg

Further information/action

None

W2 Water meter

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that a water meter with a pulsed output will be installed on the mains supply to each building.

Credit validation

The Mechanical and Electrical Specification[1] confirms that a water meter will be included on the cold water main at the boundary of the site and shall have a pulsed output.

Credit awarded.

Credit references

1. Revised Scheme Mechanical and Electrical Performance Specification Tender, AECOM – dated July 2009 Scope of works, Section S10 Cold Water, p13-14

Further information/action

None

W3 Major leak detection

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that a leak detection system is specified or installed.

Credit validation

The Mechanical and Electrical Specification[1] confirms that the Contractor is required to supply, install, test and commission a leak detection system to meet the requirements of BREEAM credit W3. The performance requirements of the leak detection system are listed in the specification and comply with the BREEAM requirements by stating:

'The contractor shall design, supply, install, test and commission a water consultopn and leak detection monitorint system and meet the requirements of BREEAM credits E2, W2 and W3, secondary water meters shall be installed on the incoming supply. The water meters will be installed on the cold water main at a suitable location at the boundary of the site and on the incoming supply to the building.

The meter installation will incorporate a two-zone control unit such as the Aqualeak unit detailed below, which via pulsed outputs on each meter will provide the following features:

Provide an audible alarm when activates

Activate when a continuous flow of water passes through the water meter at a flow rate above a pre-set minimum for a pre-set period of time

Identify different leakage rates over set time periods

Programmable to suit the occupier's requirements

Output relays to enable BEMS system to monitor consumption and alarm signals'

Credit awarded.

Credit references

1. Revised Scheme Mechanical and Electrical Performance Specification Tender, AECOM – dated July 2009 Scope of works, Section S10 Cold Water, p13-14

Further information/action

None

W4 Sanitary supply shut off

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence is provided to demonstrate that proximity detection shut off is provided to the water supply to all urinals and WC's.

Credit validation

The Building Services Engineer confirmed in a letter[1] that the requirements of this credit are met by specifying a sanitary supply shut off system to the incoming water supply to each toilet area. The system shall comprise of a normally closed solenoid valve on the incoming water supply and a PIR presence detector. The solenoid valve shall only open the water supply while presence is detected in the space. This is confirmed in the Mechanical and Electrical Specification[2].

Credit awarded.

Credit references

1. Letter from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 25/09/08
2. AECOM, Mechanical and Electrical Performance Specification Stage 2/3 Tender – dated September 2008 Scope of works, Section S10 Cold Water, page 11

Further information/action

None

W5 Water recycling

0 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates the specification of systems that collect, store, and where necessary, treat rainwater or greywater for WC and urinal flushing purposes.

Credit validation

Credit not sought as no rainwater harvesting or greywater recycling systems are proposed.

Credit withheld.

Credit references

N/A

Further information/action

None

Materials

MW1	Materials specification – Major building elements	7 of 7 credits achieved

Credit criteria

Up to 7 credits are awarded where evidence provided demonstrates that the major building elements specified have an 'A rating', as defined in the *Green Guide to Housing Specification*.

Credit validation

The Architect provided drawings outlining the floor finishes which confirm that all floor finishes are A rated[1,2,3,4]. The Architect also provided a completed Halcrow Yolles MW1 pro forma which detailed the areas of all elements and their Green Guide ratings via email[5]. As this is a refurbishment project, much of the elements are existing, therefore achieve an A rating. This information has been entered into the MW1 calculator (see appendix) which demonstrates that the full 7 credits can be awarded.

7 of 7 credits awarded.

Credit references

1. Capita Architecture, Drawing AR-430121 Revision P00, dated 27/08/08 - Floor Finishes Ground Floor
2. Capita Architecture, Drawing AR-430122 Revision P01, dated 28/07/08 - Floor Finishes First Floor
3. Capita Architecture, Drawing AR-430123 Revision P00, dated 28/07/08 - Floor Finishes Second Floor
4. Capita Architecture, Drawing AR-430124 Revision P00, dated 28/07/08 - Floor Finishes Third Floor
5. Completed MW1 pro forma. Attached in email from K Stewart (Capita Symonds) to N Fox (Halcrow Yolles), dated 22/06/09. Ref pehbsqE20090622-171358U.msg

Further information/action

None

MW2 Hard landscaping & boundary protection

1 of 1 credit achieved

Credit criteria

One credit is awarded where at least 80% of the combined area of external hard landscaping and boundary protection specifications achieve an A rating, as defined by the Green Guide to Specification.

Credit validation

The Architect confirmed via email[1] that there is no hard landscaping or boundary protection work as part of this internal refurbishment therefore this credit can be awarded by default.

Credit awarded.

Credit references

1. Email from K Stewart (Capita) to N Fox (Halcrow Yolles) dated 29/05/08

Further information/action

None

MW5 Re-use of building façade

1 of 1 credit achieved

Credit criteria

One credit is awarded where at least 50% of the total façade (by area) is reused and at least 80% of the reused façade (by mass) comprises in-situ reused material.

Credit validation

This is a refurbishment project and the façade is being retained.

Credit awarded.

Credit references

1. Halcrow Yolles pre-assessment summary sheet, Revision D, dated 14/07/08 Halcrow ref pehbsqX20080619-1646a.xls

Further information/action

None

MW6 Re-use of building structure

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that a design reuses at least 80% of an existing primary structure and for part refurbishment and part new build, the volume of the reused structure comprises at least 50% of the final structure's volume.

Credit validation

This is a refurbishment project with no structural alterations.

Credit awarded.

Credit references

1. Halcrow Yolles pre-assessment summary sheet, Revision D, dated 14/07/08 Halcrow ref pehbsqX20080619-1646a.xls

Further information/action

None

MW7 Recycled aggregates

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that significant use of crushed aggregate, crushed masonry or alternative aggregates (manufactured from recycled materials) are specified for 'high grade' aggregate uses (such as the building structure, ground slabs, roads, etc.).

Credit validation

There are no new aggregates being used as part of this project as it is a refurbishment[1].

Credit awarded.

Credit references

1. Email from G Kinsman (Hyder Consulting) to N Fox (Halcrow Yolles) dated 09/05/08

Further information/action

None

MW8 Responsible sourcing of materials

1 of 3 credits achieved

Credit criteria

Up to 3 credits are awarded where evidence provided demonstrates that materials used in Key building elements are responsibly sourced.

Credit validation

The Architect provided details of the materials used in key building elements via email[1]. This confirms that the following elements are to comprise of new material and are therefore assessed: roof, external wall, doors and windows. The rest of the elements are present, but do not have any new material. Out of the assessed elements, the roof and the doors are 93% timber.

A copy of the NBS was provided via email[2] which confirms that the Contractor is required to source timber from a responsible source in line with Tier 1 in the BREEAM technical guidance. The relevant information has been entered in the MW8 calculator (please see appendix) and as all timber will be responsibly sourced to Tier 1, the total MW8 points calculated is 6.

1 of 3 credits awarded.

Credit references

1. Email from K Stewart (Capita Architecture) to N Fox (Halcrow Yolles) dated 19/06/09. Ref pehbsqE20090619-182159U.msg
2. Email from K Stewart (Capita Architecture) to N Fox (Halcrow Yolles) dated 17/09/09. Ref pehbsqE20090917-163502U.msg

Further information/action

None

MW10 Designing for robustness

1 of 1 credit achieved

Credit criteria

One credit is awarded where protection is given to vulnerable parts of the building such as areas exposed to high pedestrian traffic, vehicular and trolley movements

Credit validation

The Architect confirmed that appropriate durability features have been specified[1]. There are no external works as part of this project so measures such as bollards or robust external wall constructions are not applicable.

A drawing[2] confirms that kick plates are to be added in areas where they are needed. It was noted that there will be no trolleys in the building. Corner protection will be included and corridor walls are specified to Severe Duty as per BS 5234-2. This is confirmed in the Building Specification[3].

The Architect provided marked up drawings via email[4] of both floors, indicating where the vulnerable areas have been protected. There are no external areas that would require protection.

Credit awarded.

Credit references

1. Email from K Stewart (Capita) to N Fox (Halcrow Yolles) dated 05/10/08
2. Capita Architecture, drawing 325001, revision P00, dated 19/08/08 – Standard Internal Door Elevations
3. UOB - Bristol Creative Learning Spaces, GSE-CA-ZZZZ-000-SPG-AR-JA1001 P00 Building Specification NBS, 29 August 2008 – Section K10 Plasterboard dry linings/ partitions/ ceilings, page 6
4. Email from K Stewart (Capita) to N Fox (Halcrow Yolles) dated 11/09/09. Ref pehbsqE20090911-114441U.msg – MW10 Building for Robustness.zip

Further information/action

None

MW12 Storage of recyclable waste

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that a central, dedicated storage space is provided for materials that can be recycled. This can be either within the building itself, or on site using skips, (provided there is good access for collections and it is within easy reach of the building).

Credit validation

The Architect provided a drawing via email[1] demonstrating the existing recycling storage provision. This area was labelled as a recycling area. The net area for this refurbishment is 851m^2 and the recycling storage area is 2m^2, which is sufficient to meet the requirements. The area is in a suitable location, approximately 28m from the stairs which is considered acceptable.

The recycling storage area is an existing facility which already performs sufficiently for the building.

Credit awarded.

Credit references

1. Drawing 061145, Revision P00, dated 17/06/09 – Site Compound Plan. Attached in email from K Stewart (Capita Architecture) to N Fox (Halcrow Yolles), dated 19/06/09. Ref pehbsqE20090619-190024U.msg

Further information/action

None

Land Use and Ecology

LE1 Re use of land

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that the footprint of the proposed development largely falls within the boundary of land previously developed.

Credit validation

This is an internal refurbishment project therefore this credit is achieved by default.

Credit awarded.

Credit references

N/A

Further information/action

None

LE2 Contaminated land

0 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that the land used for the new development has, prior to development, been defined as contaminated, and where adequate remedial steps have been taken to decontaminate the site prior to construction.

Credit validation

This is an internal refurbishment project and there is no contamination.

Credit withheld.

Credit references

N/A

Further information/action

None

LE3 Ecological value of land and protection of ecological features

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that the construction zone is defined as land of low ecological value and all existing features of ecological value will be fully protected from damage during site preparation and construction works.

Credit validation

The University of Bristol Estates Department has been appointed to report and advise on ecology, as well maintaining overall responsibility for decision making with regards to campus wide ecology. A completed *'Guidance to relate ecology reports to BREEAM'* was provided via email[1] and confirms that Alan Stealey is suitably qualified (as defined by BREEAM) to assess the ecology of the site. An ecological assessment via a site visit was completed prior to any works commencing on site.

The Ecologist confirmed that the area is of low ecological value and there are no features which require any protection[1].

Credit awarded.

Credit references

1. Completed BREEAM Ecology template, dated 07/04/10, attached in email from A Stealey (Bristol University) to N Fox (Halcrow Yolles) dated 07/04/10. Ref pehbsqE20100407-105336U.msg

Further information/action

None

LE4 Mitigating ecological impact

2 of 2 credits achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that the change in ecological value of the site, as a result of development, is less than zero and equal to, or greater than, minus nine species, i.e. a small negative change.

Two credits are awarded where evidence provided demonstrates that there is no negative change in the ecological value of the site as a result of development, i.e. equal to, or greater than, zero species.

Credit validation

The University of Bristol Estates Department has been appointed to report and advise on ecology, as well maintaining overall responsibility for decision making with regards to campus wide ecology. A completed '*Guidance to relate ecology reports to BREEAM*' was provided via email[1] and confirms that Alan Stealey is suitably qualified (as defined by BREEAM) to assess the ecology of the site. An ecological assessment via a site visit was completed prior to any works commencing on site.

As the project is an internal refurbishment there is little scope to improve outside of the building, however the report provided confirms that with the addition of a green roof, there is a species improvement of 11.56 (please refer to appendix for species calculation).

The ecologist has also provided a copy of a report via email[2] highlighting the recommendation for the green roof, with plans and further detail of the design of this feature. The green roof has been approved by the occupiers and the Client confirmed via email[3] that this has been instructed.

2 of 2 credits awarded.

Credit references

1. Completed BREEAM Ecology template, dated 07/04/10. Attached in email from A Stealey (Bristol University) to N Fox (Halcrow Yolles) dated 07/04/10. Ref pehbsqE20100407-105336U.msg
2. '*Recommendation for green roof for 35 Berkeley Square*' , University of Bristol, dated 07/04/10, reference BS070410AS. Attached in email from A Stealey (Bristol University) to N Fox (Halcrow Yolles) dated 08/04/10. Ref pehbsqE20100408-114019U.msg
3. Email from K O'Flaherty (University of Bristol) to N Fox (Halcrow Yolles) dated 14/04/10. Ref pehbsqE20100414-130917U.msg

Further information/action

None

LE5 Enhancing site ecology

3 of 3 credits achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that the design team (or client) has appointed a professional to advise on enhancing and protecting the ecological value of the site; and implemented the recommendations for general enhancement of site ecology.

Two credits are awarded where evidence provided demonstrates a positive increase in the ecological value of the site of up to (but not including) 6 species.

Three credits are awarded where evidence provided demonstrates a positive increase in the ecological value of the site of 6 or greater species.

Credit validation

As described in credit LE4, a suitably qualified ecologist (SQE) has assessed the site and provided a completed *'Guidance to relate ecology reports to BREEAM'* via email1. This report confirms that the SQE was appointed prior to works starting on site and the role includes advising on the ecology and making recommendations. As a result of the ecologist recommendations, a green roof has been specified.

Species calculations were provided in the report and these have been entered into the LE4/LE5 calculator which confirms that there is an increase of 11.56 species.

The ecologist has also provided a copy of a report via email[2] highlighting the recommendation for the green roof, with plans and further detail of the design of this feature. The green roof has been approved by the occupiers and the Client confirmed via email[3] that this has been instructed.

3 of 3 credits awarded.

Credit references

1. Completed BREEAM Ecology template, dated 07/04/10, attached in email from A Stealey (Bristol University) to N Fox (Halcrow Yolles) dated 07/04/10. Ref pehbsqE20100407-105336U.msg
2. *'Recommendation for green roof for 35 Berkeley Square'*, University of Bristol, dated 07/04/10, reference BS070410AS. Attached in email from A Stealey (Bristol University) to N Fox (Halcrow Yolles) dated 08/04/10. Ref pehbsqE20100408-114019U.msg
3. Email from K O'Flaherty (University of Bristol) to N Fox (Halcrow Yolles) dated 14/04/10. Ref pehbsqE20100414-130917U.msg

Further information/action

None

LE6 Long term impact on biodiversity

2 of 2 credits achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that the client has committed to implementing some measures to minimise any negative long term impact on biodiversity.

Two credits are awarded where evidence provided demonstrates that the client has committed to implementing significant measures to minimise any negative long term impact on biodiversity.

Credit validation

The University of Bristol Estates Department has been appointed to report and advise on ecology, as well maintaining overall responsibility for decision making with regards to campus wide ecology. A completed '*Guidance to relate ecology reports to BREEAM*' was provided via email[1] and confirms that relevant UK and EU legislation has been complied with. A compliant 5 year management is due to be completed; the completed guidance document[1] provides details on what will be included in the management plan based on ongoing discussions.

The tender documents[2] require the Contractor to comply with four of the additional requirements in the BREEAM guidance.

Further to the above, a copy of the 5 year management plan was provided via email which is fully compliant and makes reference to site specific Biodiversity Action Plans, IEEM guidance and the Natural Environment and Rural Communities Act 2006.

2 of 2 credits awarded.

Credit references

1. Completed BREEAM Ecology template, dated 07/04/10, attached in email from A Stealey (Bristol University) to N Fox (Halcrow Yolles) dated 07/04/10. Ref pehbsqE20100407-105336U.msg
2. University of Bristol Graduate School of Education, Tender Document, Faithful & Gould, dated 24/07/09 Section A32 page 62. Attached in email from M Menear (Faithful & Gould) to N Fox (Halcrow Yolles) dated 16/07/09
3. Five year Landscape Maintenance regime for 35 Berkeley Square, UoB Grounds and Gardens, dated 27/04/10. Attached in email from A Stealey (UoB) to N Fox (Halcrow Yolles) dated 09/06/10. Ref pehbsqE20100609-150833U.msg

Further information/action

None

Pollution

P1 Refrigerant GWP – Building services

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates the use of refrigerants with a global warming potential (GWP) of less that 5 or where there are no refrigerants specified for use in building services.

Credit validation

There are no refrigerants as part of this refurbishment therefore the credit is awarded by default[1].

Credit awarded.

Credit references

1. Letter from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 15/07/09. (Halcrow ref pehbsqE20090715-1511L)

Further information/action

None

P2 Preventing refrigerant leaks

2 of 2 credits achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that refrigerant leaks can be detected or where there are no refrigerants specified for use in the building or development.

One credit is awarded where evidence provided demonstrates that the provision of automatic refrigerant pump down is made to a heat exchanger (or dedicated storage tanks) with isolation valves or where there are no refrigerants specified for the development.

Credit validation

There are no refrigerants as part of this refurbishment therefore the credits are awarded by default[1].

2 of 2 credits awarded.

Credit references

1. Letter from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 15/07/09. (Halcrow ref pehbsqE20090715-1511L)

Further information/action

None

P4 Insulant GWP

1 of 1 credits achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that the specification of insulating materials avoids the use of substances with a global warming potential (GWP) of 5 or more in either manufacture or composition.

Credit validation

The Architect confirmed via email[1] that British Gypsum Thermaline Plus insulation will be used. The technical data[2] for this confirms that the GWP is less than 5 and the ODP is zero.

The Building Services Engineer confirmed in a letter[2] that all pipework insulation shall have a GWP of less than 5 and ODP of zero.

Credit awarded.

Credit references

1. Email from K Stewart (Capita Architecture) to N Fox (Halcrow Yolles) dated 02/10/08
2. Technical data for British Gypsum Thermaline Plus accessed at http://www.british-gypsum.com/pdf/DS-022-01%20Gyproc%20ThermaLine%20PLUS.pdf hard copy saved as pehbsqE20081002-1131a.pdf
3. Letter from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 15/07/09 (Halcrow ref pehbsqE20090715-1511L)

Further information/action

None

P6 NO_x emissions of heating source

3 of 3 credits achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that the maximum dry NO_x emissions from delivered space heating energy are:

≤100 mg/kWh (at 0% excess O_2).

Two credits are awarded where evidence provided demonstrates that the maximum dry NO_x emissions from delivered space heating energy are:

≤70 mg/kWh (at 0% excess O_2).

Three credits are awarded where evidence provided demonstrates that the maximum dry NO_x emissions from delivered space heating energy are:

≤40 mg/kWh (at 0% excess O_2).

Credit validation

The initial design for this project did not include for the existing boiler system to be replaced. After tender the Client instructed a change to this and the Building Services Engineer provided a copy of the NOx emission information for the specified boiler during a BREEAM meeting[1]. This confirms that the maximum NOx level for the Stokvis Boiler Econoflame R6237 is between 15-35mg/kWh.

The Building Services Engineer confirmed via email[2] that this value is a dry NOx level at 0% excess O_2.

3 of 3 credits awarded.

Credit references

1. Technical information for Stokvis Boiler Econoflame R6237, received in meeting held on 16/03/10. Ref pehbsqE20100316-1100a.tif
2. Email from J Pryke (Aecom) to N Fox (Halcrow Yolles) dated 29/03/10. Ref pehbsqE20100329-165142U.msg

Further information/action

None

P7 Flood risk

2 of 3 credits achieved

Credit criteria

Two credits are awarded where evidence provided demonstrates that the assessed development is located in a zone defined as having a low annual probability of flooding.

OR

One credit is awarded where evidence provided demonstrates that the assessed development is located in a zone defined as having a medium annual probability of flooding and the ground level of the building, car parking and access is above the design flood level for the site's location.

One further credit is awarded in addition to the above where evidence provided demonstrates that Sustainable Urban Drainage techniques are specified to minimise the risk of localised flooding, resulting from a loss of flood storage on sire through development.

Credit validation

The Structural Engineer confirmed via email[1] that the site is in an area of low flood risk and that this information was sourced through the Environment Agency.

There are no SUDs in the design.

2 of 3 credits awarded.

Credit references

1. Email from G Kinsman (Hyder Consulting) to N Fox (Halcrow Yolles) dated 22/05/08

Further information/action

None

P8 Minimising water course pollution

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that on site treatment such as oil separators/interceptors or filtration have been specified for areas at risk from pollution, i.e. vehicle manoeuvring areas, car parks, waste disposal facilities, delivery facilities or plant areas.

Credit validation

The Structural Engineer confirmed via email[1] that there is no new plant on the roof that could cause any pollution to watercourses. External works are not affected as this is an internal refurbishment therefore no interceptors are required and the credit can be awarded by default.

Credit awarded.

Credit references

1. Email from R Anderton (Hyder Consulting) to N Fox (Halcrow Yolles) dated 16/12/08

Further information/action

None

P11 Renewable and low emission energy | 0 of 3 credits achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that a feasibility study considering renewable and low emission energy has been carried out and the results implemented.

Two credits are awarded where evidence provided demonstrates that the first credit has been achieved and 10% of total energy demand for the building/development is supplied from local renewable, or low emission energy, sources.

Three credits are awarded where evidence provided demonstrates that the first credit has been achieved and 15% of total energy demand for the building/development is supplied from local renewable, or low emission energy, sources.

Credit validation

A compliant renewable energy feasibility study has not been undertaken.

Credits withheld.

Credit references

1. Letter from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 25/09/08

Further information/action

None

P12 Reduction of night time light pollution

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that the external lighting design is in compliance with the guidance in the Institution of Lighting Engineers (ILE) Guidance notes for the reduction of obtrusive light, 2005.

Credit validation

There is no external lighting as part of this project, therefore the credit is awarded by default.

Credit awarded.

Credit references

1. Letter from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 15/07/09. (Halcrow ref pehbsqE20090715-1511L)

Further information/action

None

P13 Noise attenuation

1 of 1 credit achieved

Credit criteria

One credit is awarded where evidence provided demonstrates that sources of noise from the development do not give rise to the likelihood of complaints from existing noise sensitive premises and amenity or wildlife areas that are within the locality of the site.

Credit validation

A noise assessment has been carried out, in compliance with BS4142:1997[1]. The Acoustic Report states, *'It can therefore be said that the combined plant noise levels (i.e. noise levels for all elements of plant) should not exceed 47 dB(A) at the nearest critical window such to comply with BS 4142'.*

It also states, '*In order to ensure that the existing day-time background noise levels at the near-by housing are not exceeded, a BS4142 assessment has been carried out and a noise limit has been set for any external plant. This limit is set at 71 dB(A) @ 1m and providing this is followed, noise complaints are highly unlikely. It is therefore seen that the associated BREEAM point be awarded once any proposed plant has been selected and demonstrated to be compliant with the noise limit'.*

The Building Services Engineer confirmed in a letter[2] that during the detailed design phase they will ensure that all building services plant does not exceed the specified figure. The performance specification[3] states

that sound attenuation must be provided to any fans to ensure the noise levels in the room data sheets are met.

Credit awarded.

Credit references

1. MACH Acoustics, University of Bristol Graduate School of Education Berkeley Square, Noise Assessment/BREEAM, Revision 2 dated 14/08/08, Ref GSE-CA-ZZZZ-000-RPT-AR-JA1006 P01 Environmental Noise Assessment.pdf
2. Letter from J Pryke (AECOM) to N Fox (Halcrow Yolles) dated 17/12/08. (Halcrow ref pehbsqE20081217-1558l)
3. Mechanical and Electrical Performance Specification Stage 2/3 Tender – December 2008, Scope of Works – U10 – Ventilation Supply/Extract (p15-16). Attached in above letter.

Further information/action

None

Appendix A – Scoring spreadsheet and Calculator tools

breeam:bespoke

BREEAM 2006 - Assessment Calculators

Assessment & Building Details

Assessor Name

Natasha Fox

Assessment Reference Number

HG-BES-AB06-20

Building Name

Graduate School of Education

breeam:bespoke

University of Bristol
School of Graduate Education
FINAL
12/05/08

Bespoke BREEAM 2006

Ref	Title	Whole Building / Site	Reception / Foyer	Offices	Meeting Rooms	Student Common Area	Video Editing	Video Editing	Library	Kitchens	Teaching Rooms	Max credits available	Comments
		Enter the area (m^2) of each function into the cells below each function name											
		818.95	8.86	317.34	10.86	59.04	0	9.5	273	6.22	134.13		
Management													
M1	Commissioning	2	2	2	2	2	2	2	2	2	2	2	
M4	Considerate Constructors	2	2	2	2	2	2	2	2	2	2	2	
M5	Construction Site Impacts	4	4	4	4	4	4	4	4	4	4	4	
M8	Consultation	2	2	2	2	2	2	2	2	2	2	2	
M12	Building User Guide	1	1	1	1	1	1	1	1	1	1	1	
M14	Publication of Building Information	1	1	1	1	1	1	1	1	1	1	1	
	Credits Available		12	12	12	12	12	12	12	12	12		
	Credits Achieved		12	12	12	12	12	12	12	12	12		
	% Function Score		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		
	% Total Score		1.1%	38.7%	1.3%	7.2%	0.0%	1.2%	33.3%	0.8%	16.4%		
	Section Score	**100%**											

Health and Wellbeing

Ref	Title	Whole Building / Site	Reception / Foyer	Offices	Meeting Rooms	Student Common Area	Video Editing	Video Editing	Library	Kitchens	Teaching Rooms	Max credits available	Comments
HW1	Daylighting	N/A	0	0	0	0	0	N/A	0	0	0	1	
HW2	View Out	N/A	N/A	1	N/A	N/A	1	N/A	1	N/A	1	1	
HW3	Glare Control	N/A	N/A	1	1	1	1	N/A	1	N/A	1	1	
HW4	High Frequency Lighting	1	1	1	1	1	1	1	1	1	1	1	
HW5	Internal & External Lighting Levels	1	1	1	1	1	1	1	1	1	1	1	
HW6	Lighting Zones	N/A	0	1	1	0	0	1	1	1	1	1	
HW8	Potential for Natural Ventilation	1	1	1	1	1	1	1	1	1	1	1	
HW9	Internal Air Pollution	0	0	0	0	0	0	0	0	0	0	1	
HW11	Ventilation Rates	1	1	1	1	1	1	1	1	1	1	1	
HW14	Thermal Comfort	1	1	1	1	1	1	1	1	1	1	1	
HW15	Thermal Zoning	1	1	1	1	1	1	1	1	1	1	1	
HW16	Microbial Contamination	1	1	1	1	1	1	1	1	1	1	1	
HW17	Acoustic Performance - Internal Noise Levels	N/A	N/A	1	1	1	1	1	1	1	1	1	
	Acoustic Performance - Reverberation Times	N/A	N/A	N/A	N/A	N/A	N/A	1	N/A	N/A	1	1	
	Credits Available		10	13	12	12	13	11	13	11	14		
	Credits Achieved		7	11	10	9	10	10	11	9	12		
	% Function Score		70.0%	84.6%	83.3%	75.0%	76.9%	90.9%	84.6%	81.8%	85.7%		

Ref	Title	Whole Building / Site	Reception / Foyer	Offices	Meeting Rooms	Student Common Area	Video Editing	Video Editing	Library	Kitchens	Teaching Rooms	Max credits available	Comments
	% Total Score	0.8%	32.8%	1.1%	5.4%	0.0%	1.1%	28.2%	0.6%	14.0%			
	Section Score	**84%**											
Energy													
E1	Reduction of CO_2 Emissions	0	0	0	0	0	0	0	0	0	0	15	
E2	Sub Metering of Substantial Energy Uses	1	1	1	1	1	1	1	1	1	1	1	
E3	Sub Metering of Areas	1	1	1	1	1	1	1	1	1	1	1	
E4	External Lighting	1	1	1	1	1	1	1	1	1	1	1	
E(Eco)4	Provision of Energy Efficient White Goods - Fridges / Freezers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	N/A	1	
	Credits Available		18	18	18	18	18	18	18	19	18		
	Credits Achieved		3	3	3	3	3	3	3	4	3		
	% Function Score		16.7%	16.7%	16.7%	16.7%	16.7%	16.7%	16.7%	21.1%	16.7%		
	% Total Score		0.2%	6.5%	0.2%	1.2%	0.0%	0.2%	5.6%	0.2%	2.7%		
	Section Score		**17%**										

Transport Credits

Ref	Title	Whole Building / Site	Reception / Foyer	Offices	Meeting Rooms	Student Common Area	Video Editing	Video Editing	Library	Kitchens	Teaching Rooms	Max credits available	Comments
T1	Provision of Public Transport	4	4	4	4	4	4	4	4	4	4	5	
T2	Transport CO_2	5	5	5	5	5	5	5	5	5	5	5	
T3	Proximity to Key Amenities	1	1	1	1	1	1	1	1	1	1	1	
T4	Proximity to Other Amenities	1	1	1	1	1	1	1	1	1	1	1	
T5	Cyclist Facilities	0	0	0	0	0	0	0	0	0	0	2	
T6	Pedestrian & Cyclist Safety	0	0	0	0	0	0	0	0	0	0	1	
T8	Travel Plan	1	1	1	1	1	1	1	1	1	1	1	
	Credits Available		16	16	16	16	16	16	16	16	16		
	Credits Achieved		12	12	12	12	12	12	12	12	12		
	% Function Score		75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%		
	% Total Score		0.8%	29.1%	1.0%	5.4%	0.0%	0.9%	25.0%	0.6%	12.3%		
	Section Score	**75%**											

Ref	Title	Whole Building / Site	Reception / Foyer	Offices	Meeting Rooms	Student Common Area	Video Editing	Video Editing	Library	Kitchens	Teaching Rooms	Max credits available	Comments
			Combined Energy & Transport section scores										
	Credits Available		34	34	34	34	34	34	34	35	34		
	Credits Achieved		15	15	15	15	15	15	15	16	15		
	% Function Score		44.1%	44.1%	44.1%	44.1%	44.1%	44.1%	44.1%	45.7%	44.1%		
	% Total Score		0.5%	17.1%	0.6%	3.2%	0.0%	0.5%	14.7%	0.3%	7.2%		
	Section Score	**44%**											
Water Credits													
W1	Water Consumption	2	2	2	2	2	2	2	2	2	2	3	
W2	Water Meter	1	1	1	1	1	1	1	1	1	1	1	
W3	Major Leak Detection	1	1	1	1	1	1	1	1	1	1	1	
W4	Sanitary Supply Shut Off	1	1	1	1	1	1	1	1	1	1	1	
W5	Water Recycling	0	0	0	0	0	0	0	0	0	0	1	
	Credits Available		7	7	7	7	7	7	7	7	7		
	Credits Achieved		5	5	5	5	5	5	5	5	5		
	% Function Score		71.4%	71.4%	71.4%	71.4%	71.4%	71.4%	71.4%	71.4%	71.4%		
	% Total Score		0.8%	27.7%	0.9%	5.1%	0.0%	0.8%	23.8%	0.5%	11.7%		
	Section Score	**71%**											

Materials & Waste Credits

Ref	Title	Whole Building / Site	Reception / Foyer	Offices	Meeting Rooms	Student Common Area	Video Editing	Video Editing	Library	Kitchens	Teaching Rooms	Max credits available	Comments
MW1	Materials Specification - Major Building Elements	7	7	7	7	7	7	7	7	7	7	7	
MW2	Hard Landscaping & Boundary Protection	1	1	1	1	1	1	1	1	1	1	1	
MW5	Reuse of Building Façade	1	1	1	1	1	1	1	1	1	1	1	
MW6	Reuse of Building Structure	1	1	1	1	1	1	1	1	1	1	1	
MW7	Recycled Aggregates	1	1	1	1	1	1	1	1	1	1	1	
MW8	Responsible Sourcing of Materials	1	1	1	1	1	1	1	1	1	1	3	
MW10	Designing for Robustness	1	1	1	1	1	1	1	1	1	1	1	
MW12	Storage of Recyclable Waste	1	1	1	1	1	1	1	1	1	1	1	
	Credits Available		16	16	16	16	16	16	16	16	16		
	Credits Achieved		14	14	14	14	14	14	14	14	14		
	% Function Score		87.5%	87.5%	87.5%	87.5%	87.5%	87.5%	87.5%	87.5%	87.5%		
	% Total Score		0.9%	33.9%	1.2%	6.3%	0.0%	1.0%	29.2%	0.7%	14.3%		
	Section Score	**88%**											

Land Use and Ecology Credits

Ref	Title	Whole Building / Site	Reception / Foyer	Offices	Meeting Rooms	Student Common Area	Video Editing	Video Editing	Library	Kitchens	Teaching Rooms	Max credits available	Comments
LE1	Reuse of Land	1	1	1	1	1	1	1	1	1	1	1	
LE2	Contaminated Land	0	0	0	0	0	0	0	0	0	0	1	
LE3	Ecological Value of Land & Protection of Ecological Features	1	1	1	1	1	1	1	1	1	1	1	
LE4	Mitigating Ecological Impact	2	2	2	2	2	2	2	2	2	2	2	
LE5	Enhancing Site Ecology	3	3	3	3	3	3	3	3	3	3	3	
LE6	Long Term Impact on Biodiversity	2	2	2	2	2	2	2	2	2	2	2	
	Credits Available		10	10	10	10	10	10	10	10	10		
	Credits Achieved		9	9	9	9	9	9	9	9	9		
	% Function Score		90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%		
	% Total Score		1.0%	34.9%	1.2%	6.5%	0.0%	1.0%	30.0%	0.7%	14.7%		
	Section Score	**90%**											

Pollution Credits

Ref	Title	Whole Building / Site	Reception / Foyer	Offices	Meeting Rooms	Student Common Area	Video Editing	Video Editing	Library	Kitchens	Teaching Rooms	Max credits available	Comments
P1	Refrigerant GWP - Building Services	1	1	1	1	1	1	1	1	1	1	1	
P2	Preventing Refrigerant Leaks	2	2	2	2	2	2	2	2	2	2	2	
P4	Insulant GWP	1	1	1	1	1	1	1	1	1	1	1	
P6	Nox Emissions of Heating Source	3	3	3	3	3	3	3	3	3	3	3	
P7	Flood Risk / Water Run Off	2	2	2	2	2	2	2	2	2	2	3	
P8	Minimising Watercourse Pollution	1	1	1	1	1	1	1	1	1	1	1	
P11	Renewable & Low Emission Energy	0	0	0	0	0	0	0	0	0	0	3	
P12	Reduction of Night Time Light Pollution	1	1	1	1	1	1	1	1	1	1	1	
P13	Noise Attenuation	1	1	1	1	1	1	1	1	1	1	1	

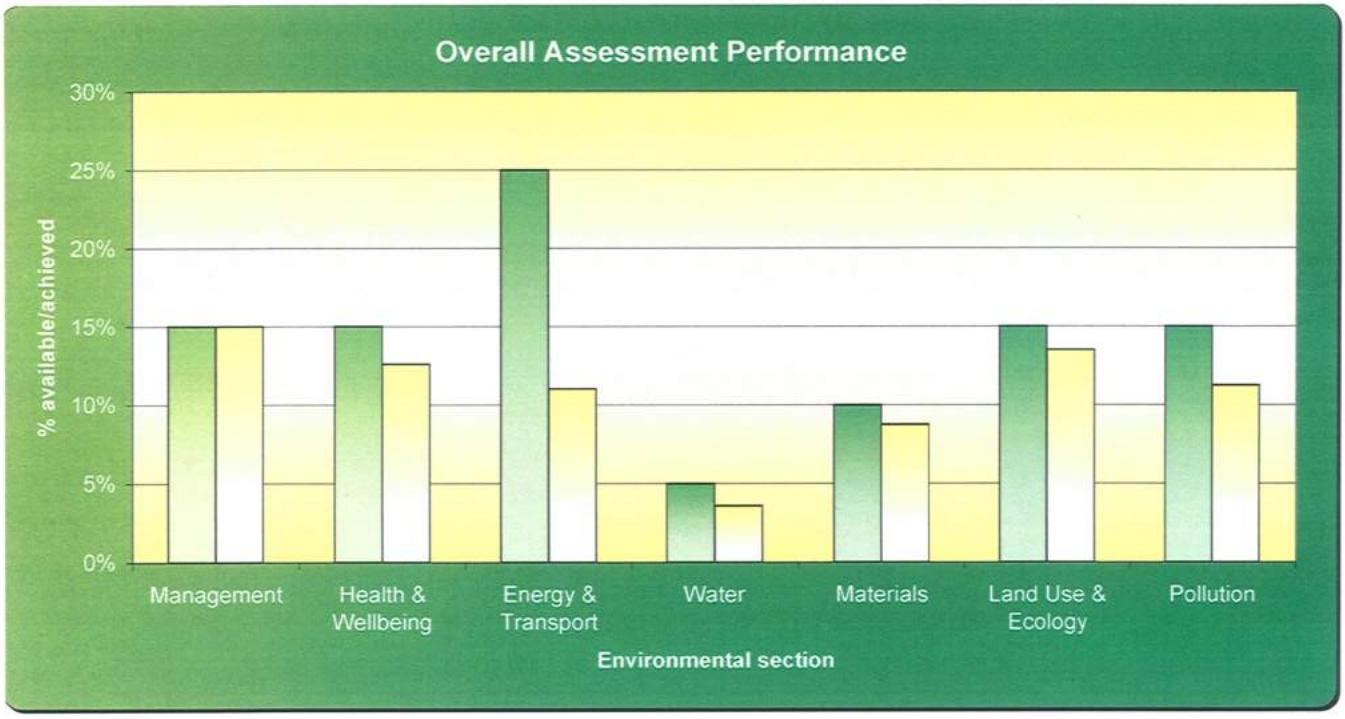
Credits Available	16	16	16	16	16	16	16	16	16	
Credits Achieved	12	12	12	12	12	12	12	12	12	
% Function Score	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	
% Total Score	0.8%	29.1%	1.0%	5.4%	0.0%	0.9%	25.0%	0.6%	12.3%	

Section Score 75%

BREEAM Rating:	Excellent

Overall Credit Allocation	Env Weighting	Percentage section credits achieved	Overall Weighted Percentage
Management	15%	100.00%	**15.00%**
Health & Wellbeing	15%	83.98%	**12.60%**
Energy		16.70%	
Transport		75.00%	
Energy & Transport	25%	44.13%	**11.03%**
Water	5%	71.43%	**3.57%**
Materials	10%	87.50%	**8.75%**
Land Use & Ecology	15%	90.00%	**13.50%**
Pollution	15%	75.00%	**11.25%**
		Totals	**75.70%**

BREEAM Rating	
Unclassified	<25
Pass	≥25 - <40
Good	≥40 - <55
Very Good	≥55 - <70
Excellent	≥70



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M4: Considerate Constructors

Considerate Constructors (or alternative) Scheme

Please select the scheme being used to demonstrate compliance

Note: if data is entered for both schemes, credits will be awarded only for the above selection.

i) Considerate Constructors Scheme

If the Considerate Contructors Scheme is being used, enter the scores achieved or required below (from Checklist A1):

	Score achieved
1 Considerate Section	4
2 Environmentally Aware Section	4.5
3 Site Cleanliness Section	4.5
4 Good Neighbour Section	4.5
5 Respectful Section	4.5
6 Safe Section	4
7 Responsible Section	3.5
8 Accountable Section	4
TOTAL Considerate Constructors Score	**33.5**

Credits Achieved	**2**

ii) Alternative Scheme

If an alternative independently assessed scheme is being used, enter the number of credits achieved (from Checklist A2):

Credits Achieved	

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M4: Construction Site Impacts

Where a firm commitment is made requiring the constructor to set up systems to set targets, monitor and report on the following impacts at site level:

1	CO_2 emissions / energy consumption resulting from energy use on site	Achieved
2	CO_2 emissions / energy consumption resulting from transport to and from site	Not Achieved
3	Construction waste resulting from site activities	Achieved
4	Recycling of construction waste resulting from site activities	Achieved
5	Water consumption resulting from site activities	Achieved

Where established best practice is specified to minimise the risks of:

6	Pollution to air arising from site operations	Achieved
7	Pollution to ground and watercourses / municipal systems.	Achieved

Points Achieved = 6

Sustainably sourced site timber

Where 75% of timber used for temporary site uses is certified by one of the schemes detailed in credit Mat 1-7	Achieved

Credits Achieved	**4**

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T2: Staff Transport - CO_2 emissions calculator: Bespoke Building Type 2

Please select the appropriate stage of assessment from the drop down menu

Bespoke BREEAM Assessment: type 2

Please select the type of area that best describes the proximity of the assessed building from the drop down menu

Metropolitan built up area * Refer to the assessment manual for a detailed description of each location.

Please select the UK region in which the assessed building is located (see map on right)

South West

Is the number of occupants known?

No

Please enter the Staff Ocuppied Area m2 819

Please enter the total number of car parking spaces 0

Predicted transport CO_2 emissions 212.43 [kg/person/yr]

Number of Credits Achieved 5

Note: there is a maximum of five credits available for building type 2

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MW1: Materials Specification - Major Building Elements

Green Guide to Specification

	Description of Elements	Area (m²)	Area that is 'A' rated (m²)	Mid 'A' factor	Potential Ecopoints	Achieved Ecopoints 'A' material
External Walls	Mostly existing, small area of new blockwork	564.21	532.60	0.885	499.33	471.35
Roof	Existing roof plus very small addition of ventilation terminal	929.49	929.49	1.08	1003.85	1,003.85
Upper floor Slab	Existing slab	1205.57	1205.57	1.36	1639.58	1,639.58
Windows	Part existing, part aluminium powder coatec	191.12	115.94	0.71	135.70	82.32
Internal Walls	Part existing, part timber stud partitioning and part timber with glazing partitioning	1181.97	1181.97	0.42	496.43	496.43
				SUM	3774.87	3693.52

Assessed/Target	0.98
Credits using the Green Guide	5

	Description of Elements	Area (m²)	Area that is 'A' rated (m²)	Mid 'A' factor	Potential Ecopoints	Achieved Ecopoints 'A' material
Floor Finishes / Covering	Existing, plus some carpet, rubber, linoleum, BREEAM rated vinyl and non BREEAM rated vinyl	1153.81	1147.51	0.717	827.28	822.76

Assessed/Target	0.99
Credits using the Green Guide	2.00

Total Credit for MW1	7.00

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Bespoke BREEAM 2006

MW8: Responsible Sourcing of Materials

Elements Present	7
Credits	Points Required
1	5.00
2	10.00
3	15.00

ELEMENT		MATERIAL TYPES	Total Volume / Percentage	Percentage or Volume of Materials compliant with each Tier				% of assesed compliant with Tiers 1-4 (min. 80%)	Points scored
				Tier 1 (3 points)	Tier 2 (2 points)	Tier 3 (1.5 points)	Tier 4 (1 point)		
ROOF	Percentage								
Present	Mat 1	Timber	93.00	93.00				100.00	3.00
	Mat 2								
	Mat 3								
	Mat 4								
	Total % of element (relevant materials) assessed		93.00						
FRAME	Percentage								
Present	Mat 1	No new material						0.00	0.00
	Mat 2							no points, < 80% complies	
	Mat 3								
	Mat 4								
	Total % of element (relevant materials) assessed		0						
EXTERNAL WALLS	Percentage								
Present	Mat 1	Brick	50.00					0.00	0.00
	Mat 2	Composites	50.00					no points, < 80% complies	
	Mat 3								
	Mat 4								
	Total % of element (relevant materials) assessed		100.00						
GROUND & UPPER FLOOR	Percentage								

Present	Mat 1	No new material						0.00		
	Mat 2							no points, < 80% complies		0.00
	Mat 3									
	Mat 4									
	Total % of element (relevant materials) assessed		0							
FOUNDATIONS / SUBSTRUCTURE		Percentage								
Present	Mat 1	No new material						0.00		
	Mat 2							no points, < 80% complies		0.00
	Mat 3									
	Mat 4									
	Total % of element (relevant materials) assessed		0							
DOORS		Percentage								
Present	Mat 1	Timber	93.00	93.00				100.00		
	Mat 2									3.00
	Mat 3									
	Mat 4									
	Total % of element (relevant materials) assessed		93.00							
WINDOWS		Percentage								
Present	Mat 1	Glass	81.00					0.00		
	Mat 2	Metal	19.00					no points, < 80% complies		0.00
	Mat 3									
	Mat 4									
	Total % of element (relevant materials) assessed		100.00							

Total Points Achieved	6.00
Credits Achieved	1

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Ecology Calculator 1

Instructions: *This calculator is to be used by the assessor to calculate the change in ecological value for LE4: Mitigating ecological impact. The area (m2) of each plot type is entered into the relevant sections below for both before and after development for the site.*

Plot type	Area BEFORE development (m^2)	*Area AFTER development (m^2)*
Building		
Hard landscaped Area		
Garden Planting (typical)		
Urban Planting -Wildlife Garden Planting		
Parkland - Tall grassland/herb		
Parkland - Fertile grassland		
Parkland - Infertile grassland		
Parkland - Lowland wooded		
Parkland - Upland wooded		
Derelict land < 1 year		
Building & Derelict land < 10 year - Tall grassland/herb		
Building & Derelict land < 10 year - Fertile grassland		
Building & Derelict land < 10 year - Infertile grassland		
Building & Derelict land < 20 year - Tall grassland/herb		
Building & Derelict land < 20 year - Fertile grassland		
Building & Derelict land < 20 year - Infertile grassland		
Building & Derelict land < 30 year - Tall grassland/herb		
Building & Derelict land < 30 year - Fertile grassland		
Building & Derelict land < 30 year - Infertile grassland		
Arable - Crops/Weeds		
Arable - Tall Grassland/herbs		
Arable - Fertile Grassland		
Arable - Infertile grassland		
Arable - Lowland wooded		
Pastural - Crops/weeds		
Pastural - Tall Grassland/herbs		
Pastural - Fertile Grassland		
Pastural - Infertile grassland		
Pastural - Lowland wooded		
Pastural - Upland wooded		
Pastural - Moorland grass / mosaic		
Marginal Upland - Fertile grassland		
Marginal Upland - Infertile grassland		
Marginal Upland - Upland wooded		
Marginal Upland - Moorland grass/mosaic		
Marginal Upland - Heath/bog		
Upland - Wooded		
Upland - Moorland grass/mosaic		
Upland - Heath/bog		
TOTAL SITE AREA	0	0
TOTAL AVERAGE NUMBER OF SPECIES PER M^2	0.00	0.00

breeam:bespoke

BREEAM Bespoke 2006 - Assessment Calculators

Ecology Calculator 2

Instructions: *This calculator is to be used by the assessor to calculate the change in ecological value for LE4: Mitigating ecological impact. The area (m2) of each plot type is entered into the relevant sections below for both before and after development for the site.*

Plot/Habitat type	Area BEFORE development (m^2)	Total No. of Species	Area AFTER development (m^2)	Total No. of Species
Front of property (ornamental beds)	13	3	13	3.0
Flat roof	44	0	44	15.0
TOTAL SITE AREA:	57		57.07	
ECOLOGICAL VALUE (AREA WEIGHTED NO. PLANT SPECIES)	0.69		12.25	