British Postal Museum & Archive (BPMA) - New Centre

BREEAM Bespoke 2008 Review

Issue 4

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ISSUE HISTORY

Issue	Date	Description
1	27/07/2015	BREEAM Review
2	10/08/2015	Minor amendments
3	10/08/2015	Post Design Team review meeting
4	21/09/2015	Minor amendments

MAX FORDHAM LLP TEAM CONTRIBUTORS

Engineer	Role
Neil Cogan	BREEAM Assessor

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1.0 EXECUTIVE SUMMARY

Max Fordham LLP have carried out a review of the BREEAM 2008 Bespoke pre-assessment issued in March 2012 in line with Clause 2.28 of the Section 106 agreement for Calthorpe House. The key purpose of this is to ensure that the design developed for tender still matches the intention set out in the original Sustainability Plan for the project.

The targets set out by Clause 2.28 are outlined below:

- BREEAM Bespoke 2008 'Very Good' rating
- Achieve 52% of the Energy section credits
- Achieve 57% of the Water section credits
- Achieve 53% of the Materials section credits.

The original pre-assessment set a target score of **59.20%,** a '**Very Good**' rating. A further 10.75% was identified as potential credits should other targeted credits prove unattainable as the design developed.

Workshops were held between us and key members of the Design Team in order to establish those credits that are still achievable, those that may be at risk, and those no longer achievable.

Through these discussions, a revised assessment indicates that the Calthorpe House project is on track to achieve a score of **58.21%**, a BREEAM '**Very Good**', with the Energy, Water and Material sections achieving targeted scores of 54.20%, 57.14% and 66.67% respectively. This indicates that the BPMA is still compliant with the targets set within Section 106, Clause 2.28, item a). Please refer to Appendix A – Post Review BREEAM Tracker for a credit-by-credit breakdown.

Since the pre-implementation review was undertaken initial energy modelling of both the new building and refurbishment elements have been carried out with the development performing above expectations. The expected score within the Energy section is now 62.53% and the overall targeted score would be increased to **59.79%**.

The pre-implementation review was performed by a Max Fordham LLP qualified BREEAM Assessor, deemed an appropriately qualified and recognised independent verification body as stipulated within Section 106, Clause 2.2.8, item b).

As part of the 'Environmental Statements for Planning' report (issued February 2012) we have undertaken a review of relevant national, regional and local planning policy and guidance. The design of BPMA will continue to be monitored against the relevant planning policy and guidance documents by the design team for compliance.

BPMA have committed to appoint as an appropriately qualified and independent verification body, i.e. a BREEAM Assessor, to undertaken the post construction review of the development as per Section 106, Clause 2.2.8, item c). This will ensure that the measures incorporated into the Sustainability Plan have been achieved and will be maintainable in the operation of BPMA.

Appropriate supporting evidence is to be issued to the appointed BREEAM Assessor as and when it is produced to enable to Assessor to provide ongoing feedback regarding compliance and ensure that the project remains on course to achieve the targets set within the Sustainability Plan.

In order to focus the constriction on the targets set out in the BREEAM pre-assessment relevant specification clauses have been produced and were incorporated into the Contractor's Prelims, Architectural, Mechanical & Electrical and Acoustic Specifications. While alone these specification clauses would not necessarily achieve credit compliance these would ensure that compliance is considered and that holistic sustainability is a key driver in the continual design development of BPMA.

2.0 BREEAM PROCESS

2.1 Introduction

It was judged during the pre-assessment that the most appropriate BREEAM scheme for BPMA to be assessed under was BREEAM 2008 Bespoke. With the refurbished Calthorpe House forming over 50% of the whole development this allows for the most accurate method of evaluating the building's environmental performance.

A BREEAM 2008 Bespoke pre-assessment was undertaken by Max Fordham LLP in March 2012. Through discussions with the Design Team a targeted score of **59.20%,** a **'Very Good'** rating was set.

An 'Excellent' rating was not pursued as it was considered unlikely BPMA would meet the reduction in CO_2 requirements for 'Excellent'.

2.2 BREEAM Registration

At this time the project is not registered with the BRE and registration for the 2008 assessment scheme has closed. However due to the contractual obligations set in the Planning Obligation Agreement, in this case registration is an option. The project would not receive a BREEAM 2008 Bespoke certificate but confirmation from the BRE that were the project assessed under BREEAM 2008 Bespoke it would have achieved the stated rating.

Within most assessments the BREEAM credit criteria is fixed. However for Bespoke projects a tailored criterion set based upon the function areas present is agreed upon. Relevant credits are chosen a wide range of credits detailed within the BREEAM Bespoke 2008 Scheme Manual. This may require a kick-off meeting between the Design Team, assessor and the BRE depending upon the complexity of the project.

It should be noted that the function areas outlined within section 2.5 may differ from those set by the BRE, therefore the final BREEAM score may differ from that presented within this report if a BREEAM 2008 Bespoke application is made.

2.3 Assessment Process

A BREEAM Assessment requires a two stage process:

- The first assessment takes place during design stages following the appointment of the contractor (Interim Certification)
- The final assessment takes place following Practical Completion (Post Construction Review).

2.4 Target Score

When determining a target score, it is recommended that a contingency of at least 3-5% over and above the target rating should be incorporated as a minimum, to allow for any design developments or changes that may have an adverse effect on the rating with further 'potential' credits identified should an unforeseen number of targeted credits prove unfeasible.

The target rating for this scheme is 'Very Good' therefore a score of 58-60% was targeted as a minimum. This provides a buffer over the minimum 55% required to achieve Very Good.

2.5 Function Areas

Under BREEAM Bespoke the final score is weighted to reflect the stronger influence of larger areas within a development over the design. If a particular function area forms 50% of the total development's gross internal floor area then it will have a bigger influence on the overall score than an area which only forms 5%.

For the purposes of this review, a number of functions areas were assumed to enable an estimate to be provided for the area weighted credits. The functions areas are listed below and are based on our experience with BREEAM Bespoke assessments as the project is not formally being registered with the BRE.

- Reception/entrance
- Exhibition space
- Archive
- Secure vault
- Quarantine
- Office
- Catering
- Search room
- Conservation studio (as laboratory)
- Education space
- Canteen
- Meeting room
- Staff room

It should be noted that not all areas of the building are assessed in the area weighted credits (for instance the office areas will not suffer for the laboratory credits not being achieved).

2.6 Mandatory Credits

To achieve a 'Very Good' rating there are a number of mandatory credits that must be achieved:

BREEAM Issue	BREEAM Rating/Minimum Number of Credits				
	Pass	Good	Very Good	Excellent	Outstanding
Man 1 - Commissioning	1	1	1	1	2
Man 2 - Considerate Constructors	-	-	-	1	2
Man 4 - Building User Guide	-	-	-	1	1
Hea 4 - High Frequency Lighting	1	1	1	1	1
Hea 12 - Microbial Contamination	1	1	1	1	1
Ene 1 - Reduction of CO_2 Emissions	-	-	-	6	10
Ene 2 - Sub-metering of Substantial Energy Uses	-	-	1	1	1
Ene 05 - Low or Zero Carbon Technologies	-	-	-	1	1
Wat 1 - Water Consumption	-	1	1	1	2
Wat 2 - Water Meter	-	1	1	1	1
Wst 3 - Storage of Recyclable Waste	-	-	-	1	1
LE 04 - Mitigating Ecological Impact	-	-	1	1	1

Table 1: BREEAM mandatory credits by rating

2.7 Planning Obligation Agreement

As agreed with Islington Council, it was proposed that Mail Rail was not to be formerly assessed under the BREEAM accreditation scheme. As a heritage asset the penalties associated with the rigid scoring criteria of BREEAM would prove both counterproductive and unrealistic.

It is however an aspiration for the project to be developed as a scheme in the spirit of BREEAM and, where practicable and appropriate, beneficial measures will be incorporated.

Clause 2.28 'Sustainability Plan' of the Planning Obligation Agreement specifies that a pre- and post-construction review should be undertaken to ensure that the sustainability measures outlined within the BREEAM pre-assessment are implemented. The pre- and post-construction review relate to the BREEAM Interim and Post Construction Review assessment stages.

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Both reviews are to be undertaken by an independent verification body and must achieve the following targets:

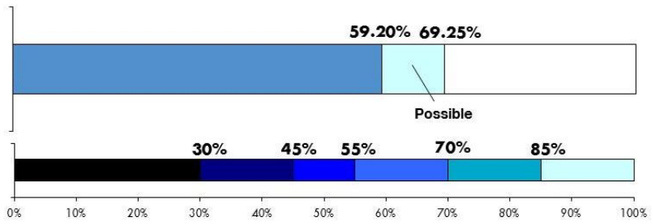
- BREEAM Bespoke 2008 ‘Very Good’ rating
- Achieve 52% of the Energy section credits
- Achieve 57% of the Water section credits
- Achieve 53% of the Materials section credits.

The pre-assessment met the above targets.

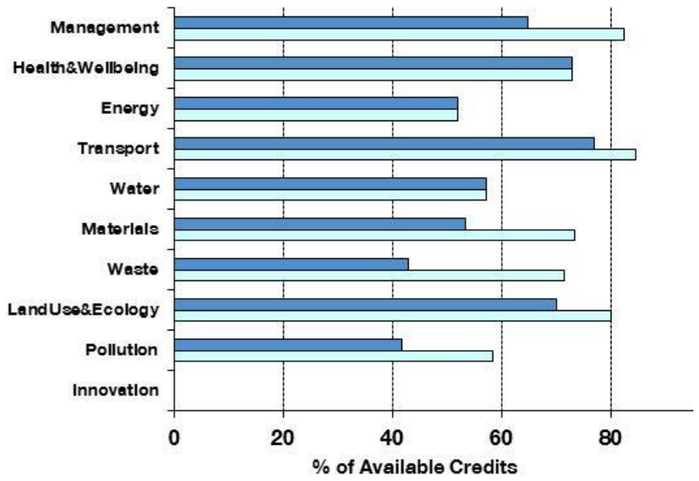
3.0 BREEAM PRE-ASSESSMENT - FEBRUARY 2012

An initial pre-assessment was carried out with the design team on Wednesday 15th February 2012.

At this time, a target score **59.20%** was set based on the design proposals and budget. This equated to a **'Very Good'** Rating. In addition to this, a number of credits were identified as potential credits. Potential credits are those requiring further design development or additional costs but do not have to be actioned by a particular stage of design. If achieved, these credits would increase the likely score by an additional 10.75%, giving a maximum possible scheme score of 69.95% (Very Good Rating).



The score is distributed throughout the 9 BREEAM Categories as follows:



The building was expected to score above average in the Management, Health & Wellbeing, Transport and Water sections and meet both the Section 106 requirements in terms of Energy, Water and Materials, and meet the mandatory credit requirements for achieving 'Very Good'.

It was decided not to pursue an 'Excellent' rating as it was considered unlikely that the building would meet the percentage reduction in CO_2 emissions required to meet the mandatory performance requirement.

The BREEAM pre-assessment was submitted for planning and informed the Planning Obligation Agreement targets.

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4.0 BREEAM REVIEW - JULY 2015

We held a series of meetings with the BPMA design team from Wednesday 8th July to Friday 17th July 2015 to review the BREEAM pre-assessment based upon the progression of the design. Meetings of minutes and email correspondence of the review process are presented within in Appendix 2.

Through these discussions we believe that BPMA is on track to achieve a score of **59.79%**, a BREEAM '**Very Good**' Rating which includes all mandatory credits required for 'Very Good'. All the individual category targets within Clause 2.28 can also be achieved.

4.1 Targeted Credits

In addition to the originally targeted credits we identified the following as achievable based on the current design.

Ene 1 - Reduction of CO2 Emissions
Energy modelling of both the new-build and refurbish elements of BPMA has been undertaken indicating that 7 credits can be achieved through an area weighted CO_2 index of 39, an improvement over the 5 credits targeted in the pre-assessment.

Mat 3 - Reuse of Facade
Through discussions with the Project Manager and the Civil/Structural Engineer we agreed that the reuse of façade credit requirements can be met. The entire façade of Calthorpe House is to be retained in-situ, greater than the 80% requirement set by Mat 3, and forms over 50% of the whole development façade area.

We believe one credit can be achieved through the reuse of the façade of Calthorpe House.

Mat 4 - Reuse of Buildings
Through discussions the Civil/Structural Engineer we agreed that agreed that reuse of building structure requirements can be met. Again the entire structure of Calthorpe House is to be retained without significant strengthening or alteration, greater than the 80% requirement set by Mat 4, and forms over 50% of the whole development structure.

We believe one credit can be achieved through the reuse of the structure of Calthorpe House.

4.2 Potential Additional Credits

While not currently incorporated into the design the following credits can be incorporated with minimal difficulty should they be required. These credits would result in additional design development and/or cost requirements.

Man 6 - Consultation
To achieve one credit consultation with appropriate stakeholders must be undertaken during the preparation of the brief (equivalent to previous RIBA Stage of Works B). A further credit available if it can be demonstrated that the consultation process has influenced, or resulted in modification to, the proposed design or how the building operations/is used.

While consultation was undertaken, including a public exhibition, it is unclear at this time whether the minimum requirements have been met. Therefore this credit has been downgraded from targeted to potential. All consultation documentation should be submitted to the Assessor to review.

Man 10 - Development as a Learning Resource
One credit is available where the building and the site is used utilised as a learning resource for demonstrating environmental awareness. This could take the form of live data on energy generated and subsequent CO_2 emission reduction due to renewable energy sources or a permanent display highlighting the building's design, construction and strategies to reduce its environmental impact.

Identified as a potential credit in the pre-assessment, this can be achieved with minimal difficulty however it also requires that at least one credit is achieved under Man 6 - Consultation and therefore a potential credit.

Hea 8 - Indoor Air Quality
One credit can be achieved through careful consideration of the placement of building ventilation intakes and exhausts.

For air-conditioned and mix mode buildings/spaces intakes and exhausts should be 10 meters apart and intakes over 20 meters from sources of external pollution.

For naturally ventilated buildings/spaces openable windows/ventilators should be over 10 meters from sources of external pollution and fresh air rates designed in accordance with good practice guidance.

For spaces subject to large and unpredictable occupancy patterns (i.e. the exhibition space) CO2 sensors should be specified and linked to the mechanical ventilation system providing demand controlled ventilation or, in naturally ventilated spaces, have the ability to alert the building owner/manager when CO2 levels exceed a recommended set point or linked to opening attenuation.

The locations of the building intakes and exhausts have not been examined in detail at this stage. Should additional credits be required the location of the intakes and exhausts should be examined before their locations become fixed.

Tra 3 - Cyclist Facilities
In order to achieve one credit the allocation of a number of cycle storage spaces, based upon a sliding scale dependent upon both building staff and visitors, must be specified. A second credit can be awarded where an appropriate number of cycle facilities (showers, changing facilities and lockers, and drying space) are specified.

The Architect confirmed that 24-26 cycle storage spaces are to be specified as a planning requirement, 1 credit has been listed as potential.

While a single shower has been specified at this time this is not considered sufficient to achieve the second credit under Tra 3.

To determine whether the number of cycle storage spaces fulfils BREEAM requirements the staff and visitor occupancy numbers should be forwarded to the Assessor as soon as they are available.

Tra 7 - Travel Point Information
One credit can be awarded where there is the capacity to provide building users, both staff and visitors, with up-to-date information on local public transport routes and timetables. This can take the form of a secure information point or in electronic form on an accessible computer within the development.

While not incorporated into the design currently, we believe, through discussion with both the Architect and M3 Consulting, this credit could be incorporated into the design at any time through the design and construction process should it be required.

4.3 Credits No Longer Considered Feasible

The following credits were considered as potential credits, i.e. not targeted, at the pre-assessment stage. However, through discussions with the Design Team, we no longer consider them feasible.

Man 9 - Publication of Building Information
One credit can be awarded where information relating to the building statistics, cost, and design and energy/water consumption are made available for public access.

When reviewing the information that is required to publish to achieve compliance with the credit it the Project Manager confirmed that this would include sensitive information. Therefore this credit has been removed as a potential credit.

Hea 3 - Glare
One credit is available where an occupant-controlled shading system is specified on all windows, glazed door and rooflights within all relevant building areas.

It was noted through discussion with the Architect that anti-glare coating was to be specified on a proportion of rooflights within the development, i.e. not occupant controlled, and this included the office areas. Therefore this credit is no longer achievable.

Mat 2 - Hard Landscaping and Fencing
One credit can be awarded where materials specified for external hard landscaping and boundary protection have a low environmental impact; this is demonstrated via Green Guide Ratings. During the pre-assessment this was identified as a potential credit to be reviewed as the design progresses.

Thus far hard landscaping and boundary protection materials have not been specified with Green Guide Ratings in mind. Therefore we believe this credit shall not be achieved.

Wst 2 - Recycled Aggregates
The Civil/Structural Engineer confirmed that a recycled course aggregate may compromise the structural integrity of the concrete structure and the sourcing requirements of the recycled and secondary aggregates would be unfeasible. Therefore this credit has been removed as a potential credit.

LE 6 - Long Term Impact on Biodiversity
Two credits had been targeted under LE 6. In order to achieve these credits further input would be required from a Suitably Qualified Ecologist (SQE) at the post-construction review stage to ensure compliance:

- Confirmation that all relevant UK and EU legislation relating to the protection and enhancement of ecology has been compiled with (as outlined within The Ecology Consultancy's 'Ecology Scoping Survey', Appendix 3).
- A Landscape Management Plan covering the first five years after project completion (or confirmation from the Ecologist that due to the nature of the site and its surroundings a Landscape Management Plan is not applicable).

However the Design Team decided that this additional appointment shall not be pursued therefore two credits are no longer achievable.

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5.0 SUMMARY

5.1 BREEAM Rating and Planning Obligation Agreement Requirements

Based upon the current design proposals the project is set to achieve a score of **58.21**%, a BREEAM '**Very Good**' Rating. This is a slight drop on the pre-assessment score. However we have identified a number of potential credits that could be targeted should they be required.

The reviews score does not include those credits identified as 'potential' or 'no longer considered feasible' and provides the project with a buffer above the minimum requirements for a 'Very Good' rating.

We believe all the mandatory elements for 'Very Good' are still achievable at this stage.

This revised score is based upon the BREEAM 2008 Bespoke methodology, i.e. weighted by building function area, where certain credits are not deemed applicable to all function areas.

Building Performance by Section			
Category	**Contribution to Overall Score (Environmental Weightings)**	**Category Score**	**Weighted Contribution to Overall Score**
Management	12.00%	58.82%	7.06%
Health & Well-being	15.00%	70.35%	10.55%
Energy	19.00%	63.53%	11.88%
Transport	8.00%	76.92%	6.15%
Water	6.00%	57.14%	3.43%
Materials	12.50%	66.67%	8.33%
Waste	7.50%	42.86%	3.21%
Land Use & Ecology	10.00%	50.00%	5.00%
Pollution	10.00%	41.67%	4.17%
Total BREEAM Score			58.21%

Table 2: BREEAM performance by section

As Table 2 indicates the targeted scores for the Energy, Water and Materials sections indicates that the Planning Obligation Agreement requirements relating to these categories are also achievable at this time.

5.2 Recommendations

BREEAM Assessor
It is recommended that a BREEAM Assessor be appointed within this stage of works to work with the Design Team to ensure that the Section 106 requirements are met, regardless of whether the project is to be registered with the BRE. This will ensure that an independent third party verification of both the Design Stage and Post construction design has been undertaken as per Section 106 requirements.

We recommend that the Design Stage review occur prior to RIBA Stage 5 'Specialist Design'. The Post Construction review should occur at RIBA Stage 7 'In-Use' and is initiated at the end of Stage 6 with a Design Team meeting and assessor site inspection.

The appointed Assessor should issue detailed guidance notes to the Design Team concerning the 'Targeted' and 'Potential' credits to ensure that evidence demonstrating compliance can be gathered in a timely fashion and feedback can be provided to the Design Team before compliance becomes too time or cost inefficient to achieve should alterations to the design be required.

BPMA have confirmed that a BREEAM Assessor shall be appointed to monitor progress throughout the design and construction stages of development.

Design Stage Compliance
BREEAM specific specification clauses have been incorporated into the Contractor's Prelims, Architectural, Mechanical & Electrical and Acoustic Specifications to ensure Design Stage compliance.

The specification clauses would not necessarily achieve credit compliance without supportive evidence (design drawings, letter of commitment, etc.). However, if incorporated, these would ensure that compliance is considered and that holistic sustainability is a key driver in the continual design development of BPMA.

6.0 APPENDIX A – POST REVIEW BREEAM TRACKER

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BREEAM 2008 OTHER BUILDINGS SCORE MATRIX	
21/09/2015	

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CREDIT & DESCRIPTION (Full Credit Compliance Requirements & Schedule of Information Required Set out by section in the BRE Assessment Manual)			Mandatory Requirements	Aavailable Credits	Expected Credits	Possible Additional	At Risk Credits	Notes/Comments
MANAGEMENT SECTION								
Man 1	Commissioning	Where a project team member has been appointed to monitor commissioning on behalf of the Client. Seasonal commissioning will be carried out during the first year of occupation.	1	2	2			MF to add all requirements into specification. Contractor to appoint specialist building services commissioning monitor separate to the M & E sub contractor. Possible further appointment for MFllp to monitor. Update 24/07/2015: Credit confirmed as achievable.
Man 2	Considerate Constructors	Where there is a commitment to comply with best practice site management principles. Demonstrable through formal certification under Considerate Constructors Scheme (CCS) or similar		2	2			Requirement to achieve maximum credits through high CCS to be written into tender and contract documents Update 24/07/2015: Confirmed that a score between 32 and 35.5 (under previous CCS) is to be targeted.
Man 3	Construction Site Impacts	Where there is a commitment to monitor site in an environmentally sounder manner in terms of monitoring, reporting and setting targets for resource use, energy consumption, waste consumption and pollution. Site timber to be sustainably sourced		4	4			All requirements to be written into the tender and contract documents for contractor. Assessor to provide relevant clauses when required. Update 24/07/2015: Confirmed that all requirements, bar the monitoring, reporting and setting of targets relating to CO2 or energy arisings from transport, shall be undertaken. To be written into Contractor prelims.
Man 4	Building Users Guide (BUG)	A simple Building User Guide is provided for building occupants		1	1			It was indicated in the initial meeting that a user guide in some form would be desired. The requirement to produce the guide is expected to be handed over to the contractor, with input by the client and design team with coordination from M3 Consulting. Update 24/07/2015: Credit confirmed as achievable. Assessor to issue Building User Guide contents to M3 Consulting.
Man 6	Consultation	Where consultation is undertaken with local community and building users. Consultation set out in Consultation Plan. 2nd Credit where there is evidence that feedback from consultation has influenced the design.		2		1		1st Credit not seen as a risk, as long as the appropriate stakeholders for the project are consulted in full and given feedback as the design progresses. It is unclear if the results of the consultation will directly influence the design of the building. Update 09/07/2015: All consultation documentation to be issued to NC to ensure appropriate stakeholder consultation has been undertaken. It is unclear at this time whether appropriate consultation has been undertaken. Credit has been removed from Expected to At Risk. Update 20/08/2015: Design Team believe required consultation has been undertaken including a public exhibition. Credit to remain as potential until extent of consultation can be assessed by Assessor.
Man 8	Security	Where consultation has taken place with a Crime Liaison Officer/Secure by Design to design out the opportunity for crime		1				The consultation with the ALO should have taken place by the end of Stage C, hence the it is considered too late. Update 24/07/2015: Despite specialist nature of development ALO consultation is required, credit therefore confirmed as not achievable.

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BREEAM 2008 OTHER BUILDINGS SCORE MATRIX	
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CREDIT & DESCRIPTION (Full Credit Compliance Requirements & Schedule of Information Required Set out by section in the BRE Assessment Manual)				Mandatory Requirements	Aavailable Credits	Expected Credits	Possible Additional	At Risk Credits	Notes/Comments
Man 9	Publication of Building Information		The development is publicised through a case study on website or publically available literature, consultation, design team meetings and site visits for future building users		1				Not achievable if Man 6 is not achieved. Some of the information to be published I.e. cost information is sensitive. Unclear if client will want to go ahead currently. To be revisited later if required. Update 24/07/2015: Due to sensitive nature of development information required to achieve credit cannot be published, credit no longer potential.
Man 10	Development as Learning Resource		Where the building and the landscape are utilised as a learning resource (eg lzcs, building fabric and materials, displays, ponds, planting, etc)		1		1		Not achievable if Man 6 is not achieved. Note this Credit requires an environmental design feature of the building to be demonstrated within the building, e.g. a display meter for PV panels could be provided. To be re-visited later if required. Update 24/07/2015: Dependent upon 1 credit being achieved under Man 06
Man 12	Life Cycle Costing		LCC Analysis has been undertaken at strategic and system level and where results of LCC have been implemented		2				The cost model does not currently comply, and it is now too late in the assessment to update it.
Man 14	Inclusivity		Where the development promotes equality and diversity through good access to the built environment for all, through the application inclusive design principles.		1	1			The building is expected to adhere to all requirements.
SECTION TOTALS:					17	10	2	0	
HEALTH & WELL-BEING									
Hea 1	Daylighting	A	Where 80% of occupied spaces will be adequately daylit with an average daylight factor of 2% and uniformity of 0.4 or a view of sky from desk height (0.7m) is achieved.		1				Only approximately 20% of the occupied area is expected to achieve the required 2% DF. The exisitng office spaces will not comply.
Hea 2	View Out	A	Where all desks are within a 7m radius of a window/direct view outside.		1				Currently not expected to be achieved in the office areas, due to being too deep plan. Update 24/07/2015: Confirmed as not achievable due to plan depth.
Hea 3	Glare	A	Where occupant controlled glare control is provided (e.g. blinds)		1			1	Blinds are expected to be provided in all relevant spaces except the Atrium. See area breakdown sheet. Update 24/07/2015: Rooflights to incorporate anti-glare coating as opposed to blinds, i.e. not occupant controlled. LW to confirm extend of anti-glare coating to determine whether this has been specified in any relevant areas (office areas, search room, education space, meeting room and staff area), if so credit cannot be awarded. Credit identified as At Risk until extend of anti-glare coating confirmed.
Hea 4	High Frequency Lighting		Where high frequency ballast is installed on all fluorescent and compact fluorescent lamps	1	1	1			Mandatory, MFllp standard specification. Update 24/07/2015: LED lighting throughout, credit confirmed as achievable.
Hea 5	Internal and External Lighting Levels		Where the internal and external lighting design is in accordance with appropriate maintained illuminance levels (lux) recommended by CIBSE		1	1			MFllp to compare CIBSE recommendations with SOR, and circulate for comment / information . Update 24/07/2015: Credit expected, Assessor to review M&E specification to ensure compliance.

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BREEAM 2008 OTHER BUILDINGS SCORE MATRIX	
21/09/2015	

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CREDIT & DESCRIPTION (Full Credit Compliance Requirements & Schedule of Information Required Set out by section in the BRE Assessment Manual)				Mandatory Requirements	Aavailable Credits	Expected Credits	Possible Additional	At Risk Credits	Notes/Comments
Hea 6	Lighting Zones & Controls	A	Where lighting in all occupied areas is zoned to allow occupant control. Manual lighting controls should be easily accesible to teachers while teaching.		1	1			MFllp & IT&S to coordinate specification. Requirements are straight forward. Update 24/07/2014: Credit expected as DALK system to be specified throughout. Assessor to review M&E specification to ensure compliance.
Hea 7	Potential for Natural Ventilation	A	Where the natural ventilation strategy allow for sufficient control of the supply of fresh air (5% of gross internal floor area. Where rooms 7m-15m in depth, window area must be on opposite sides) with 2 levels of control.		1				Currently Credit not claimed anywhere. Generally building is understood to be mechanically ventilated Update 24/07/2015: Confirmed as not achievable
Hea 8	Indoor Air Quality		Where air intakes avoid external pollution sources. Openable windows/ventilators are over 10m from external pollution sources. Separate criteria for mixed-mode/air conditioned buildings.		1				Unlikely to be achieved, due to being a tight site. Update 24/07/2015: Potential credit if required. Location of intakes and exhausts will be reviewed should credit be required.
Hea 9	Volatile Organic Compounds (VOCs)		Where emissions of VOCs and other substances from key internal finishes and fittings comply with best practice		1	1			Specification item. Expected to be achieved without any difficulty. Update 24/07/2015: Credit confirmed as achievable. Assessor to liaise with FCBS to ensure all requirements are met.
Hea 10	Thermal Comfort		Thermal assessment/modelling is carried out in accordance with CIBSE AM11, demonstrating there are fewer than 60hours a year where temperatures rise above 28degC.		1	1			Comfort cooled building, IES model will be required to demonstrate Building Regulations Part L2a 2011 compliance. Update 24/07/2015: BREEAM Bespoke 2008 specifically states that the modelling must demonstrate that the building design and services strategy can deliver thermal comfort in accordance with CIBSE Guide A, in particular the internal winter and summer temperature ranges as outlined in Table 1.5 of CIBSE Guide A. CIBSE Guide A, Table 1.7 (note: table identical to Table 2 of TM52) should be used to demonstrate natural ventilated areas achieve appropriate thermal comfort. If occupied areas assessed not listed, the M&E engineer should confirm the most appropriate levels of thermal comfort to be achieved in the building. Thermal modelling is not required for air-conditioned spaces as long as it can be demonstrated that the air-conditioning systems can achieve the thermal comfort criteria in accordance with CIBSE Guide A, Table 1.5. DC to confirm if this and the above can be demonstrated.
Hea 11	Thermal Zoning	A	Where heating/cooling is zoned to allow occupant control of zoned areas within all occupied spaces. The zoning allows for separate control of each perimeter area (within 7m of each external wall) and central zone (over 7m from external walls)		1	1			MFllp to propose zoning and user interfaces. All requirements expected to be complied with. Update 24/07/2015: Credit expected ot be achieved. Public areas centrally controlled but all staff areas to be controlled on a room-by-room basis. No perimeter office areas requiring separate zoning.

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CREDIT & DESCRIPTION (Full Credit Compliance Requirements & Schedule of Information Required Set out by section in the BRE Assessment Manual)				Mandatory Requirements	Aavailable Credits	Expected Credits	Possible Additional	At Risk Credits	Notes/Comments
Hea 12	Microbial Contamination		Building Services are designed and maintained to avoid the risk of legioellosis and where no humidification (or only steam humidification) is specified	1	1	1			Mandatory requirement, limits the options for humidification. Update 24/07/2015: Credit to be achieved. Assessor to review M&E specification to ensure compliance.
Hea 13	Acoustic Performance (Internal noise levels & sound insulation)	A	Where all spaces achieve the performance standards of BS 8233:1999 for indoor noise levels & Sound insulation levels are achieved. Additional credit where reverberation times of BB93 or BS 8233:1999 are achieved and post completion testing is carried out		1	1			Good acoustic standards for learning activities to be sought, MFllp Acoustics to schedule room requirements, architectural specification to reflect requirements. Update 24/07/2015: Credit expected. BREEAM specific acoustic specification clauses have been produced. Only outstanding item is that sound insulation between acoustically sensitive rooms and other occupied spaces complies with Section 7.6.3.1 of BS8233, issue linked to acoustic rating of internal partitions.
	Acoustic Performance (Reverberation time	A	Where reverberation times of BB93 or BS 8233:1999 are achieved and post completion testing is carried out		1	1			Good acoustic standards for learning activities to be sought, MFllp Acoustics to schedule room requirements, architectural specification to reflect requirements. Update 24/07/2015: Credit expected, within acoustic specification clauses.
SECTION TOTALS:					14	9	0	1	
ENERGY									
Ene 1	Reduction of CO_2 Emissions		Improvement in the energy efficiency of the buildings fabric and services. CO_2 index rating (EPC Rating) compared with benchmark index		15	7			The development is not expected to score that many Credits due to the poor energy performance of the existing building. 6 Credits for BREEAM Excellent is not considered possible due to the performance of the existing building. Update 21/09/2015: Modelling of both the new-build and refurbished elements has been undertaken by Max Fordham LLP confirming a CO_2 index of 39, corresponding to 7 credits.
Ene 2	Sub-metering of Substantial Energy Uses		Where accessible sub-metering is provided to monitor major energy uses within the building. Meters to have pulsed output to facilitate remote monitoring via bms	1	1	1			MFllp to pick up in spec. Update 24/07/2015: Credit expected. Included in M&E specification in order to meet Part L requirements.
Ene 3	Sub-metering of High Energy Loads & Tenancy Areas		Sub-metering is provided for tenancy/building function areas		1	1			Sub-metering of high energy load areas expected to be included. Update 24/07/2015: Blue Sky Building has confirmed all sub-meters shall be suitably labelled. Included in M&E specification to meet Part L requirements.
Ene 4	External Lighting		Where energy efficient external luminaires are specified, all light fittings are controlled for the presence of daylight and/or on a time-switch		1	1			MFllp assume this is possible. Metal halide / Fluorescent range required. Update 24/07/215: Credit expected. LED and full DALI system to be specified, therefore external lighting can be controlled via a time schedule and the BMS. Provision of external daylighting sensor to be explored as further means of control.

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CREDIT & DESCRIPTION (Full Credit Compliance Requirements & Schedule of Information Required Set out by section in the BRE Assessment Manual)			Mandatory Requirements	Aavailable Credits	Expected Credits	Possible Additional	At Risk Credits	Notes/Comments
Ene 5	Low Zero Carbon Technologies	Where a feasibility study is carried out to assess renewable energy options for the site and 10-15% of the building energy demand is met by a renewable energy source or contract in place to provide sufficient energy for building from a 100% renewable source (not green tariff)		3	2			MFIllp to undertake feasibility study. Air source heat pump is considered a LZC technology in BREEAM. A 10% reduction on the baseline is expected. Update 24/07/2015: Credits expected. LZC study undertaken recommending combination of PVs and ASHP. To be issued to Assessor to ensure compliance.
Ene 8	Lifts	Analysis of transport demand and patterns for the building has been carried out and the energy consumption for at least 2 lifts has been estimated. The system with the lowest energy consumption is specified +/- additional energy-efficient features		2	2			Some of the main lift companies provide compliant lifts such as Schindler KONE. DR- MFIllp to provide an example transport study for lift requirements. Update 24/07/2015: Credits expected but to be monitored closely. Scope of compliance has been issued as guidance.
Ene 14	BMS	The following demonstrates compliance: 1. A BMS with the ability to monitor and control the following has been installed: a. Boiler plant b. Chiller, air handling units and pumps (where specified) c. Internal environmental conditions 2. The BMS must have the ability to draw to the attention of the user out of range operational values, and monitor internal environmental conditions within the assessed building. 3. The BMS must have the ability to control heating output so that internal temperatures are maintained within an appropriate pre-determined range. This control must not automatically override local heating controls, where such controls are provided.		1	1			Expected to be achieved with BMS specified. Update 24/07/2015: Credit expected. Assessor to review M&E specification to ensure compliance.
Ene 15	Provision of Energy Efficient Equipment	A Where there is energy-efficient domestic white goods, thus reducing the CO2 emissions from appliance use in the building.		1	1			Assume to be procured through Client Update 24/07/2015: Credit confirmed as achievable. Final confirmation to be sought from the Client.
SECTION TOTALS:				25	16	0	0	
TRANSPORT								
Tra 1	Provision of Public Transport	Credits awarded on a sliding scale based on the proximity of the buildings' accessibility to the public transport network		5	5			Currently unclear if shuttle bus qualifies. DR to qualify with BRE. Update 24/07/2015: PTAL Analysis and Tra 01 Calculator confirms 5 credits achieved.
Tra 2	Proximity to Key Amenities	Building located within 500m of grocery/food shop, post box, cash machine		1	1			Amenities are provided onsite.
Tra 3	Cyclists Facilities	Adequate cyclist facilities are provided, including cycle racks, changing facilities, lockers/drying space for clothes.		2		1		There are currently not expected to be enough covered racks or changing facilities etc, available to meet the BREEAM requirements. This is mainly due to space restrictions. Update 24/07/2015: Credit may be possible. It has been confirmed that 24-26 cycle spaces are required as part of planning. Assessor has issued cycle space calculation method, and cycle facilities calculation, to determine whether this fulfils BREEAM requirements.

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CREDIT & DESCRIPTION (Full Credit Compliance Requirements & Schedule of Information Required Set out by section in the BRE Assessment Manual)			Mandatory Requirements	Aavailable Credits	Expected Credits	Possible Additional	At Risk Credits	Notes/Comments
Tra 4	Pedestrian & Cyclist Safety	Where evidence provided demonstrates that the site layout has been designed to minimise risks to pedestrians. Cycle lanes and pedestrian paths must meet minimum width dimensions		1	1			This Credit is achieved by default due to no cycle lanes etc being onsite. Update 24/07/2015: Credit can be achieved by default as internal access can be directly achievied via public highways/footpaths.
Tra 5	Travel Plan	Where a travel plan has been developed specifically for the site		1	1			A Travel Plan is expected to be developed and is also a planning requirement.
Tra 6	Maximum Car Parking Capacity	Where vehicle parking spaces are limited to encourage alternative means of transport and limit transport related emissions		2	2			No car parking is being provided, hence Credit is awarded by default. Update 24/07/2015: Confirmed that no car parking is to be specified, credit achieved.
Tra 7	Travel Information Point	Dedicated space for the provision of local transport and taxi information		1		1		This is yet to be confirmed. To be provided in entrance or atrium. Update 24/07/2015: Confirmed as potential credit. Assessor to issue exact requirements for credit to be assessed should it become required.
SECTION TOTALS:				13	10	2	0	
WATER								
Wat 1	Water Consumption	A calculator is used to determine water consumption based on the sanitaryware specification (<1.5 to > 5.5m3/person/year)	1	3	1			Mandatory credit, to be achieved through sanitary - ware specification. Low flow taps and low flush WC's to be specified. Update 24/07/2015: FCBS has confirmed credit achievable. FCBS to issue Assessor with sanitaryware specification when complete to confirm compliance.
Wat 2	Water Meter	Where a water meter with a pulsed output will be installed on the mains supply to each building/unit	1	1	1			MFllp to spec and connect to BMS Update 24/07/2015: Credit expected. Assessor to review M&E specification to ensure compliance.
Wat 3	Major Leak Detection	Where a leak detection system is installed on the building water supply		1	1			MFllp to spec and connect to BMS Update 24/07/2015: Credit expected. Assessor to review M&E specification to ensure compliance.
Wat 4	Sanitary Supply Shut-off	Where proximity detection shut-off is provided to the water supply to all toilet areas to reduce the risk of minor leaks in toilet areas.		1	1			Update 24/07/2015: Credit expected although currently PIR sensors not linked to sanitary shut-off. Compliance M&E specification text has been issued for review.
Wat 5	Water Recycling	Inclusion of a rainwater harvesting system to collect at least 50% of the total predicted rainwater run off from roof areas or total predicted flushing demand. Or waste water from 80% of fittings is collected and recycled to meet at least 10% of the total WC flushing demand		1				Rainwater harvesting is not currently included in the design or cost plan.
SECTION TOTALS:				7	4	0	0	
MATERIALS								

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Mat1	Materials Specification - Major Elements	Credits are determined by the Green Guide to Specification for the major building/finishing elements (external walls, windows, roof, upper floor slabs, internal walls, floor finishe/covers)		6	4			Expected to perform well in this Issue to re-use of existing building. New build elements expected to rate between A+-C in the Green Guide. Halcrow Yolles to considered recycled content of floor slabs and use of pre-cast hollow core specifications. Update 24/07/2015: 4 credits assumed achievable based upon high level or re-used materials. FCBS to issue Assessor with materials specification when complete to confirm compliance. CH2M confirmed that upper floors are of reinforced, in-site concrete construction ('E' rated). Design team must ensure other new elements achieve A+ - C ratings.
Mat2	Hard Landscaping and Fencing	Where at least 80% of the combined external hard landscaping and boundary protection achieves A or A+ rating, as defined by the Green Guide to Specification		1				Can be difficult to achieve. FCBS to find suitable build ups within the Green Guide and verify whether they are feasible.
Mat3	Reuse of Façade	Where at least 50% of the total final façade (by area) is reused insitu and at least 80% of the reused façade (by mass) comprises in-situ material.		1	1			Calculation required to see if this Credit can be achieved. Assessor to advise. 24/07/2015: Both M3 Consulting and CH2M have confirmed this should be achieved. Credit now targeted.
Mat4	Reuse of Buildings	Where at least 80% of an existing primary structure and, for part refub/part new build, the volume of the reused structure comprises at least 50% of the final structure's volume.		1	1			Calculation required to see if this Credit can be achieved. Assessor to advise. 24/07/2015: Both M3 Consulting and CH2M have confirmed this should be achieved. Credit now targeted.
Mat5	Responsible Sourcing of Materials	Where 80% of the assessed materials in structural frame, ground floor, upper floors (including seperating floors), roof, external walls, internal walls, foundation/sub-structure, staircase are responsibly sourced. All timber must be legally sourced.		3	2			Assumed target 2 credit of 3 Credits, due to re-use of materials. Update 24/07/2015: Blue Sky Building confirm they operate an ISO 14001 EMS, copy of certificate to be issued to Assessor.
Mat6	Insulation	Thermal insulation product have a low embodied impact relative to their thermal properties (determined by Green Guide Ratings) and that have been responsibly sourced		2	1			1 of 2 , second credit difficult to obtain. Update 24/07/2015: Use of Celotex PIR insulation confirmed for external façade which has a Green Guide Rating of A+ and key processes and supply chain ISO 14001 certification avaliable for may of their products. FCBS to issue specification to Assessor when complete. Building services insulation are expected to comply with credit requirements.
Mat7	Designing for Robustness	Where protection is given to vulnerable parts of the building and landscape		1	1			Relatively simple measures, that are expected to be included in the specification.
SECTION TOTALS:				15	10	0	0	
WASTE								

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CREDIT & DESCRIPTION (Full Credit Compliance Requirements & Schedule of Information Required Set out by section in the BRE Assessment Manual)			Mandatory Requirements	Aavailable Credits	Expected Credits	Possible Additional	At Risk Credits	Notes/Comments
Wst1	Construction Site Waste Management	Non-hazardous waste is the same as or better than good/best practice and where waste generated by the development will be reused or recycled		4	2			MFllp experience is difficult to achieve during construction, conservative target 1 or 2 credits only. Requirements to be included in Contractor Prelims if required. Update 24/07/2015: Waste section contained within Construction Management Plan. Will need to be expanded and appear within Contractor Prelims to ensure compliance. Demolition Contractor to issue demolition log to Assessor to ensure compliance with pre-demolition audit requirements.
Wst2	Recycled Aggregates	Where there is significant use of secondary or recycled aggregates in high-grade building aggregate uses. High grade uses include structural frame, floor slabs, base for paved areas, pipe bedding, gravel landscaping, etc.		1				Unlikely to be achieved on cost grounds, and due to the fact that recycled course aggregate may compromise the structural integrity of the concrete. Update 24/07/2015: Credit removed as potential.
Wst3	Recyclable Waste Storage	Where dedicated storage space is provided for recycling. In addition endorsed recycling policies/procedures should be established to secure additional credit		1	1			A bin store is provided, and will have sufficient space for recycling and catering waste as well as general waste. Update 24/07/2015: Exact allocation of waste storage to be confirmed by Construction Manager. Assessor has issued guidance on area required (8m2 for BPMA).
Wst 5	Composting	Composting facilities are provided on site to reduce the volume of compostable organic waste going directly to landfill		1				This Credit is expected to be included in the assessment. Update 24/07/2015: Confirmed as not achievable due to space considerations.
SECTION TOTALS:				7	3	0	0	
LANDUSE & ECOLOGY								
LE1	Re-use of Land	At least 75% of the proposed footprint of the building largely falls within the boundary of land previously developed		1	1			The land has been previously developed within the past 50 years hence Credit should be achieved. Update 24/07/2015: Due to nature of development this will be achieved by default.
LE2	Contaminated Land	Where land for the development has been previously defined as contaminated and where adequate remedial steps have been taken to decontaminate the site prior to construction		1				Ground is not though to be contaminated.
LE3	Ecol. Value of Site and Protection of Ecol. Features	Where the Construction Zone is defined as being of Low Ecological Value and all features of ecological value will be retained.		1	1			This Credit is to be considered for the construction boundary only. It is expected to be deemed of low ecological value. An ecologist will need to conduct a survey and sign this off however. Update 24/07/2015: Pre-development Ecology site survey has been undertaken. To ensure compliance with BREEAM requirements further work would need to be undertaken by the Ecologist.
LE4	Mitigating Ecological Impacts	Where the change in ecological value of the site is minimal or equal to or greater than zero plant species (ie no negative change)	1	2	2			This Credit is being considered for the construction site only. Need to appoint an Ecologist to sign off. Credits expected to be achievable. Update 24/07/2015: Pre-development Ecology site survey has been undertaken. To ensure compliance with BREEAM requirements further work would need to be undertaken by the Ecologist.

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CREDIT & DESCRIPTION (Full Credit Compliance Requirements & Schedule of Information Required Set out by section in the BRE Assessment Manual)			Mandatory Requirements	Aavailable Credits	Expected Credits	Possible Additional	At Risk Credits	Notes/Comments
LE5	Enhancing Site Ecology	Where an Ecologist is appointed to advise on enhancing the site and the recommendations are implemented. Additional credits available where there is a positive increase by up to or more than 6 species		3	1	1		Masterplan ecology strategy for the whole site. Update 24/07/2015: Pre-development Ecology site survey has been undertaken. To ensure compliance with BREEAM requirements further work would need to be undertaken by the Ecologist.
LE6	Long Term Impact on Biodiversity	Where an Ecologist confirms compliance with all UK/EU legilisation relating to protection and enhancement of ecology, a 5year landscape/management plan is produced and the Client and the Contractor carry out a number of actions to minimise the longer term impact of the site.		2				Need to appoint an Ecologist, credits assumed possible. Site wide landscape management plan expected to be implemented. Contractor to adhere to onsite site requirements. Update 20/08/2015: The Design Team has stated that this is not an additional appointment they would like to pursue, credits removed
SECTION TOTALS:				10	5	1	0	
POLLUTION								
Pol 1	Refrigerant Global Warning Potential (GWP) - Building Services	Where refrigerants with a global warming potential of 5 or less are specified for use in building services or the building has less than 5kg of refrigerants or no refrigerants		1				Unlikely to be achieved with building significant cooling requirement Upate 24/07/2015: Credit confirmed as not targeted.
Pol 2	Preventing Refrigerant Leaks	Where a refrigeration leak detection system is installed or the building has less than 5kg of refrigerants or no refridgerants		2				Unlikely to be achieved with cooling plant on roof (no plant enclosure). Update 24/07/2015: Unlikely to be achieved due to location of plant however Daikin VR system may allow refrigerant leak detection. Credit to be reviewed should it be required.
Pol 4	NOx Emissions of Heating Source	Where a heat source with low NOx (<40-100 mg/kWh) emissions is specified		3				Will not be achieved if electric ASHP's are specified. Possibility of 1 Credit is gas absorption heat pumps are considered. Update 24/07/2015: ASHPs specified therefore credit not targeted.
Pol 5	Flood Risk	Where the development is assessed is having a low or medium/high annual probability of flooding and a site specific flood risk assessment has been carried out to the satisfaction of local authorities and statutory bodies. The ground level of the building should be designed 600mm above the design flood level.. Additional credit available for incorporation of SUDs within design.		3	2	1		Assumed low risk as no flood risk assessments is required for planning . FRA may be needed if credit is sought. Possible additional Credit for providing attenuation.
Pol 6	Minimising Watercourse Pollution	Specification of onsite treatment such as SUDS or oil seperators for areas that could be a source of watercourse pollution.		1	1			Roof plant may need oil trap on drain. Design expected to comply. Update 24/07/2015: Specification of SUDS or source control possible if required. Oil/petril separator required in surface water drainage system due to goods vehicle parking/manoeuvring facilities. Up-to-date drainage plan has been produced.
Pol 7	Reduction of Night-time Light Pollution	Where the external lighting design is compliant with ILE guidance for the reduction of night time pollution and is automatically switched off between 2300 and 0700		1	1			MFllp external lighting design expected to comply. Update 24/07/2015: Credit expected to be achieved.

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CREDIT & DESCRIPTION (Full Credit Compliance Requirements & Schedule of Information Required Set out by section in the BRE Assessment Manual)			Mandatory Requirements	Aavailable Credits	Expected Credits	Possible Additional	At Risk Credits	Notes/Comments
Pol 8	Noise Attenuation	Noise sources from development do not exceed ambient noise levels. Noiswe impact assessment to be BS 4142: 1997 compliant		1	1			Planning requirements are expected to be more onerous than BREEAM hence compliance expected. Update 24/07/2015: Credit expected to be achieved, noise impact assessment was undertaken in compliance with BS 4142:1997.
SECTION TOTALS:				12	5	1	0	
INNOVATION								
Man 2	Considerate Constructors	Where CCS score (or similar scheme) is 36 or more		1				Not sought currently
Hea 1	Daylighting	At least 80% of occupied spaces has an average daylight factor of 3% in multi-storey buildings and 4% in single-storey buildings. Uniformity factors of at least 0.4 (mulit-storey) and 1.6% (single storey)		1				Not sought currently
Ene 1	Reduction of CO2 Emissions	Building is designed to be carbon neutral as designed by the NCM		2				Not sought currently
Ene 5	Low or Zero Carbon Technologies	Where a feasibility study is carried out to assess renewable energy options for the site and 20% of the building energy demand is met by a renewable energy source or contract in place to provide sufficient energy for building from a 100% renewable source (not green tariff)		1				Not sought currently
Wat 2	Water Meter	Sub-meters meters with pulsed outputs allow the metering of individual water-consuming plant or areas of the building consuming greater than 10% of the total water demand.		1				Not sought currently
Mat 1	Materials Specification - Major Elements	Where 4 or more building elements are assessed, the building achieves 2 points additional to the total points required to achieve maximum credits. Where less than 4 building elements are assessed, at least 1 point additional to the total points required to achieve maximum credits.		1				Not sought currently
Mat 5	Responsible Sourcing of Materials	In addition to other credit criteria, 95% of applicable materials comprised within the applicable building elements have been responsibly sourced.		1				Not sought currently
Wst 1	Construction Site Management	In addition to other credit criteria, at least 90% by weight of non-hazardous construction waste and 95% of demolition waste by weight generated by the build has been diverted from landfuill for resuse, recycling, etc.		1				Not sought currently
AP	Suitably Qualified BREEAM Assessor (SQA)	BREEAM performance objectives agreed prior to stage b, SQA involved in project and attends key design teams meetings.		2				Not sought currently
SECTION TOTALS:				11	0	0	0	

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7.0 APPENDIX B – DESIGN TEAM BREEAM CONSULTATION

BRITISH POSTAL MUSEUM & ARCHIVE (BPMA) - NEW CENTRE: BREEAM PROGRESS MEETING – NO. 01 (ARCHITECT)

Project	British Postal Museum & Archive (BPMA) - New Centre		
Job Reference	J4383		
Time	Wednesday 8th July 2015, 09:30 to 10:00		
Location	M3 Consulting, Dashwood House, 69 Old Broad Street, London, EC2M 1QS		
Minutes prepared by	Neil Cogan, Max Fordham LLP		
Attendees			
	Lee Warr	Feilden Clegg Bradley Studios	LW
	Neil Cogan	Max Fordham LLP	NC

Distribution	Attendees plus:		
	Marianne Thomas	M3 Consulting	MT
	Richard Cowan	M3 Consulting	RC

Item		Action
1.0	Expected Credits	
	1.1 - Man 06: Consultation LW to issue NC with FCBS consultation undertaken to date. NC to review to ensure appropriate stakeholder consultation has been undertaken.	LW
	1.2 - Hea 03: Glare LW stated that this credit remains expected, however rooflights will incorporate anti-glare coating rather than blinds. NC to confirm whether this is BREEAM compliant. Update 09/07/2015: BREEAM specified that the glare control must be "occupant-controlled" in relevant areas and therefore anti-glare glazing coating would not suffice. Office areas would fall under relevant areas. Could LW to confirm extent of rooflights and anti-glare coating.	LW
	1.3 - Tra 03: Cyclist Facilities LW confirmed that approximately 24-26 cycle storage spaces are required as part of planning requirements. NC to confirm exact cycle storage requirements. Update 09/07/2015: The number of cycle spaces is assessed under the following criteria: The number of compliant cycle storage spaces provided are as follows: a. 10% of building users (staff) up to 500 plus b. 7% for building users in the range of 5001 - 1000 plus c. 5% of building users over 1000 In addition: d. 10% of building visitors The above requirements can be reduced by 50% as we are achieving maximum credits under Tra 01: Provision of Public Transport. Two of the following must also be provided, only for the building users: a. Compliant showers, 1 shower per 10 cycle storage spaces required for staff use b. Compliant changing facilities and lockers for clothes. Where a shower is provided one square meter of changing space adjacent to the shower with a bench seat and hooks for hanging clothes. Number of lockers should equal the number of cycle spaces required for staff use and should be in or adjacent to changing spaces. c. Compliant drying space for wet clothes. Specifically designed and designated space with adequate heating and ventilation. A plant room is not a compliant drying space.	NC
	1.4 - Tra 04: Pedestrian & Cyclist Safety Credit can be awarded by default as internal access can be directly achieved from public highway/footpaths.	
	1.5 - Wat 01: Water Consumption LW confirmed credit still achievable. LW to issue sanitaryware specification to NC when completed to confirm compliance.	LW
	1.6 - Mat 01: Materials Specification - Major Elements and Mat 05: Responsible Sourcing of Materials 4 out of 6 credits for Mat 01 and 2 out of 3 credits for Mat 05 assumed achievable due to the high level of re-used materials. LW to issue NC with materials specification when undertaken	LW

	for NC to check compliance. 1.7 - Mat 06: Insulation LW confirmed that building façade insulation shall be Celotex PIR insulation which achieves an A+ rating. NC confirmed that ISO 14001 certification for key processes and supply chain processes is available for many Celotex products. LW to provide NC with roof package information for NC. 1.8 - Wst 03: Recyclable Waste Storage LW confirmed the allocation of a recyclable waste storage area with exact space allocation to be determined by Construction Manager. NC to issue guidance on size requirements. Update 09/07/2015: For the purposes of BREEAM the net floor area of 2,435.22m^2 is rounded down to 2,000m^2. 2m^2 are required per 1,000m^2 net floor area with an additional 2m^2 per 1,000 m^2 if catering areas are provided meaning 8m^2 of recyclable waste storage is required for BPMA. 1.9 - LE 01: Re-use of Land NC confirmed this credit should be achieved by default due to the location type. NC to produce diagram illustrating this. 1.8 - LE 03: Ecol. Value of Site and Protection of Ecol. Features to LE 06: Long Term Impact on Biodiversity NC to confirm with M3 Consulting whether Ecologist was appointed for the project and whether Ecology report was issued.	LW NC NC NC
2.0	Potential Credits 2.1 - Man 10: Development as a Learning Resource LW confirmed that this credit may be possible to achieve. NC to issue detailed credit requirements for LW to explore possibility. 2.2 - Tra 07: Travel Information Point LW confirmed that is an information point was developed to fulfil the requirements of Man 10 then this could also include information relating to Tra 07. NC to issue detailed credit requirements for LW to explore possibility.	NC NC
3.0	Credits not Targeted 3.1 - Hea 03: View Out It has been confirmed that this credit is not achievable for the development due to the office area plan being too deep 3.2 - Hea 07: Potential for Natural Ventilation It has been confirmed that this credit is not achievable for the development 3.3 - Wst 05: Composting LW confirmed that space limitations mean that this credit will not be achieved.	

BRITISH POSTAL MUSEUM & ARCHIVE (BPMA) - NEW CENTRE, BREEAM PROGRESS MEETING – NO. 02

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Project	British Postal Museum & Archive (BPMA) - New Centre
Job Reference	J4383
Time	Friday 10th July 2015, 12:30 to 14:00
Location	M3 Consulting, Dashwood House, 69 Old Broad Street, London, EC2M 1QS
Minutes prepared by	Neil Cogan, Max Fordham LLP

Attendees	Hugh Taylor	Blue Sky Building	HT
	Richard Cowan	M3 Consulting	RC
	Marianne Thomas	M3 Consulting	MT
	Neil Cogan	Max Fordham LLP	NC

Distribution	Attendees plus:		
	Lee Warr	Feilden Clegg Bradley Studios	LW
	Chris Sheedy	Royal Mail	CS
	Upinder Ubhi	Grontmij	UU
	Robin Bourne	CMEC	RB
	Charles Chamunorwa	CH2M	CC
	Andy Hutton	Max Fordham LLP	AH
	Dan Cash	Max Fordham LLP	DC

Item		Action
1.0	**Credits Previously Expected**	
	1.1 - *Man 01: Commissioning* Credit confirmed as achievable. Design team asked for clarification regarding the appointment of the Commissioning Monitor/Specialist Commissioning Manger, NC to issue guidance. Update 14/07/15: The Commissioning Monitor can be a member of the design team, however the Specialist Commissioning Manager for Complex Systems be a specialist contractor rather than a general sub-contractor.	NC
	1.2 - Man 02: Considerate Constructors HT confirmed that the targeted score of between 32 and 35.5 under the previous Considerate Constructors Scheme is likely to be achieved. To be included in Contractor Prelims	HT
	1.3 - Man 03: Construction Site Impacts HT confirmed that the following items are to be undertaken: • Monitor, report and set targets for CO_2 or energy arising from site activities; • Monitor, report and set targets for water consumption arising from site activities; • Implement best practice policies in respect of air (dust) pollution arising from the site; • Implement best practice policies in respect of water (ground and surface) pollution occurring on the site; • Main contractor has an environmental materials policy, used for sourcing of construction materials to be utilised on site; • Main contractor operates an Environmental Management System. The monitoring, reporting and setting of targets relating to CO_2 or energy arising from transport to and from site shall not be undertaken. Three credits can be awarded based upon the items undertaken. To be included in Contractor Prelims	HT
	1.4 - Man 04: Building User Guide NC to issue compliant Building User Guide contents to RC and MT.	NC
	1.5 - Man 06: Consultation It is unclear at this time whether compliant consultation has been undertaken. Design team to issue consultation undertaken for NC to compile.	Design Team
	1.6 - Hea 09: Volatile Organic Compounds LW to specify compliant materials within Architectural Specification. HT confirmed that materials would be as per Architectural Specification. NC to liaise with LW to ensure BREEAM requirements are met.	NC/LW
	1.7 - Ene 03: Sub-metering of Substantial Energy Uses HT confirmed that all sub-meters shall be suitably labelled.	
	1.8 - Ene 15: Provision of Energy Efficient Equipment RC confirmed this is likely to be achieved, final confirmation to be sought from the Client.	
	1.9 - Mat 05: Responsible Sourcing of Materials HT confirmed that Blue Sky Building operate an ISO 14001 certificate. Copy to be issued to NC.	HT

	1.10 - Mat 06: Insulation LW and AH/DC to specify compliant materials within Architectural and Building Services Specification. HT confirmed that materials would be as per Architectural and Building Services Specification. NC to liaise with LW and AH/DC to ensure BREEAM requirements are met. 1.11 - Wst 01: Construction Site Waste Management MT confirmed that a waste section appears within the Construction Management Plan. MT to issue to NC. Update 14/07/2015: Construction Management Plan has been issued. NC to review to ensure compliance. 1.12 - Land Use & Ecology LE 03 - LE 06 Ecologist was appointed to undertake a bat survey however this does not fulfil the requirements to achieve compliance with LE 03 to LE 06 and it has been confirmed by RC that it is too late to appoint an Ecologist. Update 14/07/2015: Ecologist report confirms that the Ecologist was appointed to undertake Ecological Assessment beyond a bat survey. As the survey was undertaken prior to the commencement of works on-site all targeted Land Use & Ecology credits can still be achieved however further work from the Ecologist would be required to fulfil BREEAM requirements. NC strongly recommends that this option is explored as these items account for a total of 6 credits (6%). NC can issue Design Team with Ecologist BREEAM Scope of Services, Design Team to confirm.	NC MT NC Design Team
2.0	**Credits Previously Identified as Potential** 2.1 - *Reuse of Facade* Design team present agreed that this is likely to be achieved. NC to liaise with CH2M to confirm. 2.2 - Reuse of Buildings Design team present agreed that this is likely to be achieved. NC to liaise with CH2M to confirm.	 NC/CC NC/CC
3.0	**Credits Previously Not Targeted** 3.1 - *Man 08: Security* M3 confirmed that whilst ALO/CPDA consultation was not undertaken security specialists relevant to the development type were consulted. NC to determine whether this is acceptable in terms of BREEAM Update 14/07/2015: A BREEAM FAQ states the following: "Whilst consultation with the departmental security experts is understandable given the nature of these types of buildings, this issue is focused on reducing low level crime and the fear of crime for users and local businesses. Therefore the ALO/CPDA must still be consulted to ensure the public realm within, and around the building addresses security concerns in this respect." Therefore credit not achievable. 3.2 - *Man 09: Publication of Building Information* RC confirmed that much of the information required to be published as part of Man 09 could not be published for this project due to security concerns.	 NC
4.0	**Miscellaneous Items**	

	4.1 - *Transport Consultant* MT to issue Transport Consultant contact information to NC Update 14/07/2015: Upinder Ubhi's contact information has been issued to NC. NC to liaise with UU regarding transport credits	MT
	4.2 - *CH2M Consultant* MT to issue CH2M contact information to NC Update 14/07/2015: Charles Chamunorwa's contact information has been issued to NC. NC to liaise with CC regarding structural/civil credits.	MT NC/RB
	4.3 - Demolition Contractor MT to issue CMEC contact information to NC Update 14/07/2015: MT has also issued NC with Robin Bourne's (Demolition Contractor) contact information. NC to liaise with RB regarding pre-demolition audit, this will determine whether Mat 03 and Mat 04 can be achieved	MT NC/RB

BRITISH POSTAL MUSEUM & ARCHIVE (BPMA) - NEW CENTRE, BREEAM PROGRESS MEETING – NO. 03

Project	British Postal Museum & Archive (BPMA) - New Centre		
Job Reference	J4383		
Time	Friday 17th July 2015, 14:00 to 15:30		
Location	Max Fordham LLP, The Rotunda, 42-43 Gloucester Crescent,		
Minutes prepared by	Neil Cogan, Max Fordham LLP		
Attendees			
	Dan Cash	Max Fordham LLP	DC
	Neil Cogan	Max Fordham LLP	NC
Distribution	Attendees plus:		
	Andy Hutton	Max Fordham LLP	AH
	Richard Cowan	M3 Consulting	RC
	Marianne Thomas	M3 Consulting	MT
	Hugh Taylor	Blue Sky Building	HT
	Lee Warr	Feilden Clegg Bradley Studios	LW
	Chris Sheedy	Royal Mail	CS
	Upinder Ubhi	Grontmij	UU
	Robin Bourne	CMEC	RB
	Charles Chamunorwa	CH2M	CC

Item		Action
1.0	**Expected Credits** 1.1 - *Hea 04: High Frequency Lighting* Credit expected. LED lighting throughout 1.2 - *Hea 05: Internal and External Lighting Levels* Credit expected. 1.3 - *Hea 06: Lighting Zones and Controls* Credit expected. Full DALI system throughout. *1.4 - Hea 10: Thermal Comfort* Credit expected. Overheating analysis has been modelled to demonstrate compliance with TM52 Overheating Criteria. Update 24/07/2015: BREEAM Bespoke 2008 specifically states that the modelling must demonstrate that the building design and services strategy can deliver thermal comfort in accordance with CIBSE Guide A, in particular the internal winter and summer temperature ranges as outlined in Table 1.5 of CIBSE Guide A. CIBSE Guide A, Table 1.7 (note: table identical to Table 2 of TM52) should be used to demonstrate natural ventilated areas achieve appropriate thermal comfort. If occupied areas assessed not listed, the M&E engineer should confirm the most appropriate levels of thermal comfort to be achieved in the building. Thermal modelling is not required for air-conditioned spaces as long as it can be demonstrated that the air-conditioning systems can achieve the thermal comfort criteria in accordance with CIBSE Guide A, Table 1.5. DC to confirm if this and the above can be demonstrated. *1.5 - Hea 11: Thermal Zoning* Credit expected. Public areas centrally controlled but all staff areas shall be controlled on a room-by-room basis. The open plan office spaces have no perimeter areas (areas adjacent to external walls) so zoning to allow separate control of each perimeter area and the central core is not required. 1.6 - *Hea 12: Microbial Contamination* Credit expected. 1.7 - *Hea 13: Acoustic Performance* NC to check existing specifications for inclusion of acoustic specification. NC to liaise with LW to confirm acoustic ratings of partitions. Update 24/07/2015: BREEAM specific acoustic specification clauses have been produced, only outstanding item is confirmation that the sound insulation between acoustically sensitive rooms and other occupied spaces complies with Section 7.6.3.1 of BS 8233, this issue is linked to acoustic rating of partitions. *1.8 - Ene 01: Reduction of CO_2 Emissions* Currently the new build elements has been modelled as per Part L requirements however modelling of both new build and refurbished elements would be required in order to demonstrate BREEAM compliance. Update 24/07/2015: A minimum of 5 credits are required under Ene 01 to meet Section 106 obligations, full modelling and EPC output therefore required. DC to explore feasibility of	DC NC/LW DC

	further modelling *1.9 - Ene 02: Sub-metering of Substantial Energy Uses* Credit expected. Included in order to meet Part L requirements. *1.10 - Ene 03: Sub-metering of High Energy Loads and Tenancy Areas* Credit expected. Included in order to meet Part L requirements. *1.11 - Ene 04: External Lighting* Credit expected. LED and full DALI system specified, therefore external light fittings can be controlled via a schedule. Provision of external daylight sensor to be explored. *1.12 - Ene 05: Low or Zero Carbon Technologies* Credits expected. LZC feasibility study undertaken which recommends combination of PV array and Air Source Heat Pump (ASHP). DC to issue to NC to review feasibility study for compliance. *1.13 - Ene 08: Lifts* Credits expected. Progress of lift design to be monitored to ensure compliance. *1.14 - Ene 14: BMS* Credit expected. BMS to be specified. *1.15 - Wat 02: Water Meter* Credit expected. *1.15 - Wat 03: Major Leak Detection* Credit expected. *1.16 - Wat 04: Sanitary Supply Shut-off* PIRs have been specified in WC areas however are currently not liked to solenoid valves. NC to issue compliance specification text to DC for review. Update 24/07/2015: Compliance text issued within BREEAM Mechanical & Electrical Specification Clauses (see Section 'S10 and S11 Hot & Cold Water', subsection 'BREEAM', page 3) *1.17 - Mat 06: Insulation* Credits expected. *1.18 - Pol 06: Minimising Watercourse Pollution* Credit expected. Specification of SUDS or source control possible. Roof plant may need an oil trap on the drain. Oil/petrol separator required in surface water drainage system due to goods vehicle parking/manoeuvring facilities. Up-to-date drainage plan of the site has been produced. NC to liaise with CH2M regarding credit specifics. *1.19 - Pol 07: Reduction of Night-time Light Pollution* Credit expected. *1.20 - Pol 08: Noise Attenuation* Credit expected. Noise assessment undertaken as part of planning. Update 24/07/2015: Confirmation required that the noise impact assessment was undertaken in compliance with BS 4142:1997.	DC NC NC
2.0	**Potential Credits**	

	2.1 - *Hea 08: Indoor Air Quality* Potential credit should it be required. Location of intakes and exhausts has not yet been examined for BREEAM compliance. Should credit be targeted it is required that the building's intakes and exhausts are 10 meters apart and intakes are over 20 meters from sources of external pollution. For naturally ventilation areas it must be demonstrated that openable windows/ventilators are over 10 meters from a source of external pollution and the building has been designed to provide fresh air rates to dilute pollutants in accordance with good practice (in general office areas this would be the BCO 'Guide to Best Practice in the Specification of Offices'. For areas subject to large and unpredictable or variable occupancy patterns CO_2 or air quality sensors should be specified and either lined to the mechanical ventilation system to provide demand-controlled ventilation or for naturally ventilated spaces have the ability to alert the building owner/manager when CO_2 levels exceed recommended set point or linked to controls with the ability to adjust quantity of fresh air.	
3.0	**Credits not Targeted** *3.1 - Pol 01: Refrigerant Global Warming Potential (GWP) - Building Services* Credit to remain untargeted. *3.2 - Pol 02: Preventing Refrigerant Leaks* Unlikely to be achieved due to location of plant however Daikin VR system may allow refrigerant leak detection. Credit to be reviewed should additional credits be required. *3.3 - Pol 04: NOx Emissions of Heating Source* Credit to remain untargeted due to specification of Air Source Heat Pumps powered by grid electricity.	
4.0	**Miscellaneous Items** *4.1 - Max Fordham LLP Mechanical and Electrical Specification* DC to issue NC with Mechanical and Electrical Specification for NC to review compliance of many of the targeted items.	DC

J4383 - BPMA BREEAM Review

Neil Cogan to: Charles.Chamunorwa
Cc: "Marianne Thomas", "Richard Cowan (R.Cowan@m3c.co.uk)", "Lee Warr (lee.warr@fcbstudios.com)", Dan Cash

24/07/2015 16:34

Hi Charles

Thanks for going through the relevant BREEAM items with me. Just to confirm here's a summary of what we discussed (more for our records than anything).

Mat 01: Materials Specification - Major Elements

Upper floor construction to be screed in-situ reinforced concrete slabs. While this corresponds to an 'E' Green Guide rated material (please see attached) this should not present a problem due to the quantity of reused building structure/facade.

Note to team: Careful consideration should go into the specification of the remaining new major elements (external walls, windows, roof, internal walls, floor finishes/covers) to ensure we meet our required 4 credit target. If further elements are to be specified that do not achieve an A+ to C rating please do raise the issue with me.

Mat 03: Reuse of Facade

It is believe we should achieve this credit. The existing facade area will form more than 50% of the whole development facade area and at least 80% of the reused facade will be reused in-situ. Calculations to be based upon FCBS elevations (note: the latter figure has to be shown in terms of mass).

Mat 04: Reuse of Buildings

It is again believed we should achieve this credit. At least 80% of structure of Calthorpe House will remain the structure of Calthorpe House forms over 50% of the whole development (these are assessed by volume).

Wst 02: Recycled Aggregates

It is confirmed that this shall not be achieved.

Pol 05: Flood Risk and Pol 06: Minimising Watercourse Pollution

Not within the scope of CH2M, NC to liaise further with MF Engineers to ensure compliance.

Note to team: Has a Flood Risk Assessment been undertaken?

If you have any comments/amendments please let me know and I shall amend accordingly.

Kind regards,

Neil Cogan

Sustainability Assessor

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