BRE Environmental & Sustainability Standard

BES SD5052 ISSUE 2

BREEAM Industrial, 2008
Final Assessment Report

British Film Institute - National Archive Master, Film Store

Prepared for: -
Gilbert Ash
1st March 2012

SDSE-IND-JM48-1

Prepared on behalf of SDS Energy by

Name John McCullough

Position Senior BREEAM Consultant

Signature 

Approved on behalf of SDS Energy by

Name Stephen Dunn

Position Senior BREEAM Consultant

Date 01/03/12

Signature 

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Executive Summary

SDS Energy has been commissioned by Gilbert Ash to carry out a BREEAM assessment of BFI National Archive Master, Film Store. This report details the post construction stage performance of the aforementioned building development as measured against the BRE Environmental and Sustainability Standard, BREEAM Industrial 2008 (BES5052 Issue 2).

The building has achieved a BREEAM score of 76.09%, which translates in to a final post construction BREEAM rating of Excellent. The BREEAM assessor has determined this rating using an auditable trail of evidence, all of which is referenced throughout this assessment report.

This project has demonstrated a high standard of performance against the BREEAM Industrial criteria as the score reflects. The Health and Well-being section deserves special mention as this development has scored full marks in this section. All the main sections under assessment have scored greater than 45% of the credits available. This is impressive given the rural location of the site and the limited transport links and amenities.

Contents

BREEAM Certificate Information

Certificate Request Form									
BREEAM rating									
PASS	☐	GOOD	☐	V.GOOD	☐	EXCELLENT	☒	OUTSTANDING*	☐
Percentage score	76.09%			**BREAM Scheme & Version**		Industrial 2008			
BRE ref. no.	SDSE-IND-JM48-1								
Stage of assessment	Final, Post Construction Stage								
Report Date	01-03-12			**Assessed Net floor area:**		2900m^2			
Project type: (BREEAM Retail, Offices, Industrial and Bespoke assessments only)									
Shell Only ☐	If shell only, do you require 'Maximum Potential Fitted Out BREEAM score' to appear on the certificate?					**Yes** ☐		**No** ☐	
Fully Fitted ☐	If yes, what is the 'Maximum Potential Fitted Out BREEAM score' (taken from assessment tool)?								
Building and Team Details									
Building name / Plot number and building address	[redacted]								
Licensed assessor	John McCullough								
Assessor organisation	SDS Energy								
Client	British Film Institute								
Developer	Gilbert Ash Ltd								
Architect	Edward Cullinan Architects								

Main Contractor	Gilbert Ash Ltd
Other	

*** BREEAM Outstanding Rating** *(mandatory if applying for BREEAM Outstanding rating)*

I/we SDS Energy agree to provide/enclose the relevant building/project information and give BRE Global permission to produce a case study on the design and development of BFI National Archive Master, Film Store.

It is a condition of awarding an Outstanding BREEAM rating that a case study of the assessed building is produced. The design team/client must therefore agree to provide relevant information about the project to BRE Global for production and dissemination of such a case study. Where permission is not granted or information not provided, the assessed building will be awarded an Excellent rating.

Interim design stage certification
On submission of the interim design stage report the client or their representative agree to provide the relevant information and give permission to BRE Global to produce and disseminate a case study for the assessed building at the final stage of BREEAM certification. The relevant information is not required for or at the interim stage of certification.

Post construction certification
On submission of the final post construction stage report the client or their representative agree to provide the relevant building information and give permission to BRE Global to produce and disseminate a case study of the assessed building.

BREEAM Approved Innovations

Have BREEAM *Approved Innovation* credits been awarded in the assessment of the above named building?	**Yes** ☐	**No** ☒

If yes, please state the BRE Global *Approval Number* for each *Approved Innovation* below:

Introduction

SDS Energy has been commissioned to carry out a BREEAM (**BRE E**nvironmental **A**ssessment **M**ethod) Industrial, 2008 assessment of BFI National Archieve Master, Film Store for Gilbert Ash.

The BREEAM Standard

BREEAM (Building Research Establishment's Environmental Assessment Method) is the worlds leading and most widely used environmental assessment method for buildings. It sets the standard for best practice in sustainable design and has become the de facto measure used to describe a building's environmental performance.

The aims and objectives of BREEAM are:

Aims of BREEAM

- To mitigate the impacts of buildings on the environment
- To enable buildings to be recognised according to their environmental benefits
- To provide a credible, environmental label for buildings
- To stimulate demand for sustainable buildings

Objectives of BREEAM

- To provide market recognition to low environmental impact buildings
- To ensure best environmental practice is incorporated in buildings
- To set criteria and standards surpassing those required by regulations and challenge the
- market to provide innovative solutions that minimise the environmental impact of buildings
- To raise the awareness of owners, occupants, designers and operators of the benefits of
- buildings with a reduced impact on the environment
- To allow organisations to demonstrate progress towards corporate environmental objectives

Building projects are assessed at the design and post-construction stages using a system of environmental issues grouped within the following categories:

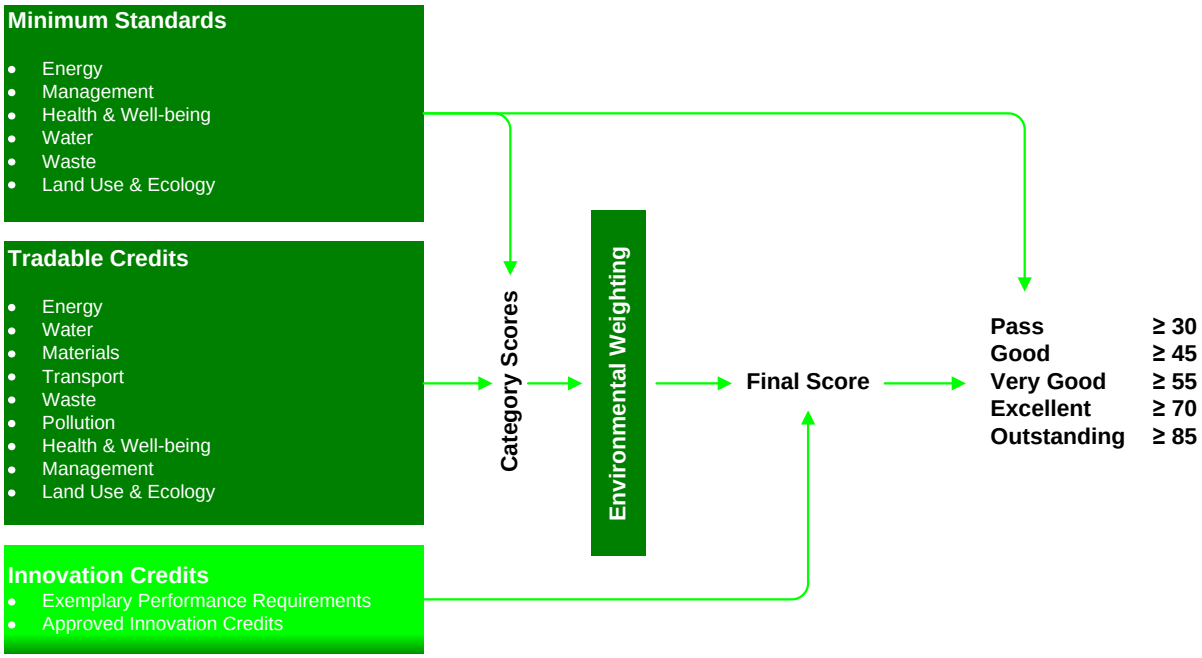
- Management
- Health and Wellbeing
- Energy
- Transport
- Water
- Materials
- Waste
- Land Use & Ecology
- Pollution
- Innovation

The assessment of the building results in a final report and BRE Global BREEAM certificate detailing the performance of the assessed building against the environmental issues covered by Standard. The building's performance is expressed as a BREEAM rating of PASS, GOOD, VERY GOOD, EXCELLENT or OUTSTANDING.

BREEAM is developed, operated and maintained by BRE Global Ltd and the operation and direction of the method is overseen by an independent Sustainability Board, representing a wide cross-section of construction industry stakeholders. Further information about BREEAM, including copies of the BREEAM standards, can be found at www.breeam.org

BREEAM Scoring & Rating

The diagram and text below describes how BREEAM scores and rates an assessed building:



The BREEAM categories contain a number of environmental issues, which reflect the options available when designing, procuring and constructing a building.

BREEAM issues and credits

Tradable credits
Each environmental issue has a set number of 'credits' available and these credits are awarded where the building demonstrates that it complies with the requirements of that issue.

Minimum standards

A number of issues within a category have set minimum standards, i.e. a minimum number of credits that must be achieved in order for a particular BREEAM rating level to be met.

Innovation credits
Innovation credits provide additional recognition for a building that innovates in the field of sustainable performance, above and beyond the level that is currently recognised and rewarded by standard BREEAM issues. Innovation credits are awarded for either complying with pre-defined BREEAM issue exemplary level requirements, through the appointment of a BREEAM Accredited Professional or Suitably Qualified Assessor or via application to BRE Global to have a particular building feature, system or process approved as 'innovative'.

Environmental weightings, final score and BREEAM Rating
Once each BREEAM issues has been assessed the category percentage scores are determined (based on the number of credits achieved over those available within a category), and an environmental weighting applied (as shown below).

The weighted category scores are then totalled to give an overall score, and any additional score for innovation is added to give the final BREEAM score which is used to determine the BREEAM rating.

The environmental weightings are as follows:

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

There is also an additional (up to 10%) score for Innovation, available to projects that demonstrate they have gone above and beyond the best practice levels of BREEAM.

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.

Project Team and Building Details

Project Team Details

Name / Position	Company / Address
Client	British Film Institute, 21 Stephen Street, London, W1T 1LN
Client Architect	ECA, 1 Baldwin Terrace, London, N1 7RU
Client M&E Consultant	CPW, Amington House, 95 Amington Road, Yardley, Birmingham, B25 8EP
Client Civil Engineering Consultant	Curtains Consulting, 40 Compton Street, London EC1V 0AP
Mike Gray, Project Manager	Gilbert Ash, 47 Boucher Road, Belfast, BT12 6HR
John McGerty, Contractor	Gilbert Ash, 47 Boucher Road, Belfast, BT12 6HR
Joan McCoy, Design Development	WhiteInk Architects, 21 Talbot Street, Belfast, BT1 2LD
Damien McKenna, Contracts Manager	Gilbert Ash, 47 Boucher Road, Belfast, BT12 6HR

Building Details

General	**Building**	The building is designed to store the BFI Master film acetate and nitrate collections in sub-zero temperatures with dry air for their long term preservation. The building design incorporates the extensive plant room requirements together with workshop facilities for the BFI to manage their collections through inspection processes and offices.
	Site	The new film store is to be located on the existing rural site in [redacted]
	Floor area	2900m^2
Building fabric	**Walls**	There are three types of external walls; the first type is a stainless steel single sheet cladding and metal support, breather membrane, insulation, liner tray, light steel frame, structural steel frame, plasterboard on battens and paint The second type is an insulated polymeric render system, cement fibre board, light steel frame and a structural steel frame. The third type is a load bearing pre-cast concrete panel, vapour barrier, rigid insulation with load bearing per-cast concrete finish.
	Roof	There are two types of materials for the roof construction, firstly a pre-cast concrete slab, insulation laid to falls, vapour barrier, EPDM single ply roofing membrane and extensive sedum roof. The second type is a structural steel frame, galvanised steel purlins and deck, vapour control layer, insulation, EPDM single ply roofing membrane.
	Floor	A suspended concrete floor incorporating a vapour membrane and insulation.

Building Services	**Heating**	The primary heat source for the ancillary support area shall be provided by recovering waste heat from the air cooled chiller plant. The LPG boiler plant shall be used to back-up the heat source. Heat will only be generated by the recovery system for the Ancillary accommodation area.
	Ventilation	A standard pre fabricate packaged ventilation plantroom arrangement which will serve the storage vaults on a modular basis. The ventilation strategy with regards to the meeting rooms and office areas is mechanical with fan coil units to maintain the given temperature range.
	Cooling	The cooling system will operate via a centralised chilled water system powered by externally mounted air cooled chillers, serving a roof mounted cooling network extending to the dehumidification plantroom, roof mounted recirculation AHU's and feeding an injection circuit within the ancillary area. Within the ancillary area the local CHW injection circuits from the central chiller plant network will serve fan coils within the general office, meeting room, lounge are and close control unit within the processing workshops.
	Hot water	The domestic water facilities within the ancillary support area will be minimal, consisting of a kitchen, shower and toilet facilities. The kitchen area will be served by an instantaneous water heater for beverage making, hot water to sinks will be provided by point of use water heaters. The shower room will have an electric show and toilet facilities and cleaners sinks will have localised hot water generation provided via point of use water heaters.
Other	**Other**	The primary heat source to meet the heating demand of the ancillary support areas shall be provided from the heat recovered from the air cooled chillers with LPG boilers retained to provide backup in the event of failure conditions only.

Summary of Building's Assessment Performance

BFI National Archive Master, Film Store achieves an interim/final (delete as appropriate) score of **76.09%** against the BREEAM Industrial, 2008 Environmental and Sustainability Standard. This translates into an interim/final (delete as appropriate) BREEAM rating of **Excellent.**

Minimum BREEAM Standards					
Rating Level	**Pass**	**Good**	**Very Good**	**Excellent**	**Outstanding**
Minimum Standards Achieved	**YES**	**YES**	**YES**	**YES**	**NO**

Building Performance by Section					
	Environmental weighting	**Credits available**	**Credits achieved**	**% Achieved**	**Weighted Score**
Management	12.00%	10.00	8.00	80.00%	9.60%
Health & Wellbeing	15.00%	7.00	7.00	100.00%	15.00%
Energy	19.00%	22.00	14.00	63.64%	12.09%
Transport	8.00%	11.00	6.00	54.55%	4.36%
Water	6.00%	6.00	5.00	83.33%	5.00%
Materials	12.50%	11.00	5.00	45.45%	5.68%
Waste	7.50%	7.00	5.00	71.43%	5.36%
Land Use & Ecology	10.00%	10.00	7.00	70.00%	7.00%
Pollution	10.00%	10.00	8.00	80.00%	8.00%
Innovation	10.00%	10.00	4.00	40.00%	4.00%
				Total BREEAM Score	**76.09%**

Detailed Assessment of Building Performance

The following section summarises each of the issue requirements for this BREEAM assessment by environmental section, and the information that has been provided as evidence of the buildings performance against those requirements. On the basis of the documentary evidence provided, the relevant number of BREEAM credits have either been awarded or withheld.

Each issue assessed includes the BREEAM assessor's validation statement. This statement summarises their assessment of the buildings performance against the BREEAM issue requirements, validating the number of BREEAM credits awarded.

Management

Management
Man 1 - Commissioning

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**1**	**1**	**1**	**1**	**2**

Number of credits achieved:	**2**

Aim

To recognise and encourage an appropriate level of building services commissioning that is carried out in a co-ordinated and comprehensive manner, thus ensuring optimum performance under actual occupancy conditions.

Criteria

Two credits available as follows:

Credits	
1	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 best practice.
2	Where, in addition to the above, evidence provided demonstrates that seasonal commissioning will be carried out during the first year of occupation, post construction (or post fit out).

Schedule of Evidence

First Credit achieved? (For full explanation, please refer to Validation Statement)	**Yes**
Second Credit achieved*?* (For full explanation, please refer to Validation Statement)	**Yes**

1. Letter from Mark of JBE Building Services Limited to J. McCullough of SDS Energy, RE: MAN1, BFI Master Film Store-[redacted]no date
2. GA BFI Master Film Store –[redacted]Construction Programme, dated 18/10/10
3. Email to assessor from D McKenna, Subject Programme and Report, dated 07/12/11
4. GA letter by M O' Brien to M Cameron Absolute Technical Solutions, dated 13/4/11
5. Letter from M Cameron to M Nutt of GA, Ref Validation and Commissioning Management Support – BFI Archive, dated 20/04/10
6. Specification Section Three, Commissioning Mechanical Services, Couch Perry & Wilkes, dated 2010
7. Project commissioning plan for new BFI Film Archive Facility at[redacted]Rev 0, not dated
8. Acetate AHUs 1/4/6/7/10/12 Commissioning test Plan, Document Number M003B, Rev 0, not dated
9. Chilled Water Commissioning test Plan, Document Number M002, Rev 0, not dated
10. Dehumidifer AHUs 2 A-D Commissioning test Plan, Document Number M003A, Rev 0, not dated
11. Low temperature Hot Water Commissioning test Plan, Document Number M001, Rev 0, not dated
12. Nitrate AHUs 2/3/5/8/9/11 Commissioning test Plan, Document Number M003C, Rev 0, not dated
13. Email from M Cameron to assessor Re Commissioning Approach BREEAM, dated 09/02/12
14. Integrated building services and Environmental commissioning plan, document Number M6 Rev 0, not dated
15. JBE building services, BFI Gaydon M&E Sign off sheet, dated 13/12/11 & 14/12/11

Validation Statement

First credit

Item 7 provides a comprehensive plan for commissioning the building by Absolute Technical Solutions (ATS) the commissioning engineers. Item 7 states that the ATS scope of works includes Pre-commissioning, Commissioning and re-commissioning. This complies with the first credit requirement.

Item 8 shows a typical commissioning plan for a particular system in this case it's the air handling unit for the Acetate cell storage. The plan describes the standards that the system is to be commissioning to which include CIBSE Code M- Management, A-Air Distribution, BSRIA, HVAC DW series standards, British standards and building regulations. Item 8 – 12 also contain these standards. This complies with the second credit requirement.

Item 3 & 2 shows the programmes that have been produced by the Specialist Commissioning Engineer and the Main Contractor. Item 2 shows the commissioning taking place at the end of the construction period. Item 3 is the programme for the seasonal commissioning by Absolute Technical Solutions. This programme shows that there are visits every 3 months, to cover soft landing checks over all four seasons. This complies with the third credit requirement.

Item 7, section 5, lists out the system that our the responsibility of ATS these include Heating system, Cooling, Ventilation, Domestic Hot water, Cold water, Building Management system and all electrical systems including lighting and power. Item 7 provides a comprehensive plan for commissioning the building by Absolute Technical Solutions (ATS) the commissioning engineers/commissioning managers. Item 7 states that the ATS scope of works includes Pre-commissioning, Commissioning and re-commissioning. Items 4 & 5 confirm the appointment of ATS and the responsibilities. This complies with the fourth credit requirement.

Items 8 to 12 list the various test plans which each list the installation verification is to be completed by ATS. Item 13 provides a summary of these items i.e. Chilled water, item 9 page 15, Dehumidification AHUs item 12, page 14. Item 13 also states the commissioning managers ATS get confirmation from the control contractor that the systems are ready to operate, item 9, page 23 and item 10 page 14. This complies with 5a of the assessment criteria.

Item 13 states that Space temperatures/Humidity were independently checked using TESTO data loggers and compared with the BMS readings. Refer to Environmental Performance Checks Item 14, page 13. Item 13 states Non critical areas were verified by calibrated VAISALA. Off coil temperatures are monitored by the BMS. This complies with 5b of the assessment criteria.

Item 14, page 13, states that a 7 day satiability test will be carried out in advance of loading the building with the storage of films. This complies with 5c of the assessment criteria.

Item 13 shows various examples of the graphical outputs which are shown on the front end controls of the BMS. This complies with 5d of the assessment criteria.

Item 15 shows the training register for each system for the BFI staff. This complies with 5e of the assessment criteria.

First credit awarded.

Second credit.

The first credit has been achieved see above.

Item 3 is the programme for the seasonal commissioning by Absolute Technical Solutions. This programme show that there are visits every 3 months, to cover soft landing checks over all four seasons.

Item 5 is the letter of appointment to Mail Cameron of Absolute Technical solutions. The responsibilities are laid out item 5, the letter of appointment, which makes reference to the Consultants specification item 7.

Second credit awarded.

Management
Man 2 – Considerate Constructors

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**1**	**2**

Number of credits achieved:	**2**

Aim

To recognise and encourage construction sites which are managed in an environmentally and socially considerate and accountable manner.

Criteria

Two credits available as follows:

Credits	
1	Where evidence provided demonstrates that there is a commitment to comply with best practice site management principles.
2	Where evidence provided demonstrates that there is a commitment to go beyond best practice site management principles.

Schedule of Evidence

Number of Credits achieved? (For full explanation, please refer to Validation Statement)	**2 of 2**

1. Monitor's Site Report 2 from Patrick Dawson of CCS to J. McCullough of SDS Energy, dated 23 Aug 2011
2. Monitor's Site Report 1 from Patrick Dawson of CCS to J. McCullough of SDS Energy, dated 16 Feb 2011
3. Considerate Constructors Certificate, BFI National Archive Store, dated 15/12/11

Validation Statement

Items 1 & 2 demonstrates that the project has had two site inspections under the Considerate Constructors Scheme which scored 34.5 and 36 respectively. Item 3 is the certificate issued showing that Performance Beyond Compliance was achieved.

Therefore 2 credits maybe awarded

Management
Man 3 – Construction Site Impacts

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**4**

Aim

To recognise and encourage construction sites managed in an environmentally sound manner in terms of resource use, energy consumption and pollution.

Criteria

Four credits available as follows:

Credits	
1	Where evidence provided demonstrates that 2 or more of items a-g (listed below) are achieved.
2	Where evidence provided demonstrates that 4 or more of items a-g (listed below) are achieved.
3	Where evidence provided demonstrates that 6 or more of items a-g 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. Implement best practice policies in respect of air (dust) pollution arising from the site e. Implement best practice policies in respect of water (ground and surface) pollution occurring on the site f. Main contractor has an environmental materials policy, used for sourcing of construction materials to be utilised on site g. Main contractor operates an Environmental Management System.
1	Where evidence provided demonstrates that at least 80% of site timber is responsibly sourced and 100% is legally sourced.

Schedule of Evidence

Number of Credits achieved? *(For full explanation, please refer to Validation Statement)*	**4**
Fourth (Timber) Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. Letter from D. McKenna to J. McCullough, RE: BREEAM Man 3 Construction Site Impacts, dated 18h November 2011
2. Letter from D. McKenna to J. McCullough, RE: BREEAM Man3 Construction Site Impacts, 16th Nov 2011
3. BREEAM Evidence folder issued 24th October 2011, containing Energy, Water and Transport graphs & tables, dated 24/10/11
4. SDS Site report for BFI, dated 5th September 2011
5. GA Environmental Procedures Policy, Signed E 'O Neill, dated 15/02/10
6. GA Site instruction 18, Author M Bradley, dated June 2011
7. GA ISO 14001 Environmental Management System, BM Trada Certificate Number 798, dated 29/10/10

Validation Statement

Item 3 contains records of the data recorded for Site deliveries, Site energy consumption and Co_2 emissions and Site water Consumption. Item 6 also has targets set for both water consumption and Energy consumption. Item 4 as shows the site photos taken that show the graphs displayed on site. This complies with item a, b & c on checklist A3.

Item 1 is a letter from the contractor which confirms that the works have been carried out in accordance with the Pollution Prevention Guidelines (PPG). The PPG documents have been enclosed with the letter. Item 1 also confirms that the site Manager Ciaran Leahy was the person responsible for this protocol. This complies with item e on checklist A3.

Item 6 is Gilbert Ash's Site instruction for dust and Air Emissions. The site instruction lists damping down of dry or dusty materials, minimising drop heights, wetting cutting or grinding operations and covering with dust sheets. This complies with item d on checklist A3.

Item 5 is Gilbert Ash's Environmental procurement policy which is communicated to all employees and is available on their website. The policy covers how materials are purchased, manufactured, delivered, used and manufactured with minimal impact on the environment. This complies with item f on checklist A3.

Item 7 is the contractors companies ISO 14001 certificate for building and Civil Engineering services. This complies with item g on checklist A3.

Item 2 confirms that no timber was used in the site set up, fencing, formwork or scaffolding. This is due to the site being surrounded by existing fence and the scaffold and toes boards being made of steel. All the concrete was precast off site so no formwork was required. Item 2 also confirms that any non certified timber was legally sourced and not on the CITES list.

As six actions have been carried out 3 credits with an additional credit for timber can be awarded.

Management
Man 4 – Building User Guide

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**1**	**1**

Number of credits achieved:	**0**

Aim

To recognise and encourage the provision of guidance for the non technical building user so they can understand and operate the building efficiently.

Criteria

Credits	
1	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.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**No**

1. BFI BUILDING USER MANUAL, by Gilbert Ash, not dated
2. Email from D McKenna of GA to assessor, Subject BREEAM – Building User Manual, dated 30/11/11

Validation Statement

Item 1 is the building user that the contractor has produced for the client at the end of the project. Item 2 confirms that the building user guide will be issued to the client to satisfy the BREEAM requirements.

The Building user guide covers all the building control systems which include Ventilation, Chilled water, heating, BMS, access control, Fire alarm, CCTV, PA System, Intruder alarm, Lighting, drainage system, re fit/arrangements, building waste, Transport, training, Operation & Maintenance and Links & references.

Unfortunately Water Services were not covered which does not fit with the contents.

Credit withheld.

Management		Minimum BREEAM Standards

	Rating Level	P	G	VG	E	O
Man 8 - Security	**Min. credits to achieve rating**	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**0**

Aim

To recognise and encourage the implementation of effective design measures that will reduce the opportunity for and fear of crime on the new development.

Criteria

Credits	
1	Where evidence provided demonstrates that an *Architectural Liaison Officer* (ALO) or *Crime Prevention Design Advisor* (CPDA) from the local police force has been consulted at the design stage and their recommendations incorporated into the design of the building and its parking facilities (if relevant).

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**No**

1. Email from D. Leggett to S. Dunn, RE: BFI MFS – BREEAM Evidence Man 8, Dated 29th November 2010
2. Design Drawing, Signage Location Plan, BFI_X_30_121, Revision A, Dated 16th June 2010
3. Project programme, not dated

Validation Statement

This credit was not awarded at design stage, the validation has been stated below.

Item 1 confirms that the design team have sought the advice of the local CPDA at the design stage of the project. Item 3 would indicate that this took place after stage C and therefore this is non compliant.

Item 2 confirms that the recommendations from the minutes have been implemented into the design of the building. The measures include robust envelope with infra red beam, resistance rating glazing, CCTV monitoring, Bollard protecting doors, security fencing and single point access to site. The final

design incorporates recommendations from the CPDA and conforms to the principles and guidance of *Secured by Design.*

Due to the time when the secured by design process was started this is non compliant credit withheld.

Health and Wellbeing

Health & Wellbeing
Hea 1 Daylighting

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	2

Aim

To give building users sufficient access to daylight.

Criteria

Credits	
1	Where evidence provided demonstrates that at least 80% of the total *occupied* floor area is adequately daylit.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**
Second Credit achieved *(For full explanation, please refer to Validation Statement)*	**Yes**

1. SDS Site report for BFI, dated 05th September 2011
2. Gilbert Ash AS BUILT DRAWING, RE: ELEVATIONS 03 & 04, BFI_L_062, REVISION E, dated 05th February 2010
3. Gilbert Ash AS BUILT DRAWING, RE: SECTIONS 01 & 02, BFI_L_051, REVISION F, dated 05th February 2010
4. Gilbert Ash AS BUILT DRAWING, RE: ELEVATIONS 01 & 02, BFI_L_061, REVISION E, dated 05th February 2010
5. Gilbert Ash AS BUILT DRAWING, RE: GROUND FLOOR PLAN, BFI_L_000, REVISION I, dated 27th November 2009

Validation Statement

Item 1 the assessor site report confirms that the window sizes and room layouts are as per the design stage day lighting compliant rooms.

Item 2 confirms that no changes have been made to the original design.

2 credits awarded.

Health & Wellbeing
Hea 4 – High Frequency Lighting

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**1**	**1**	**1**	**1**	**1**

Number of credits achieved:	**1**

Aim

To reduce the risk of health problems related to the flicker of fluorescent lighting.

Criteria

Credits	
1	Where evidence provided demonstrates that high frequency ballasts are installed on all fluorescent and compact fluorescent lamps.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. Design drawing, RE:GENERAL & EMERGENCY LIGHTING INSTALLATION, C1197/E01, dated October 2011
2. SDS Site report for BFI, dated 5th September 2011

Validation Statement

Items 1 & 2 confirm the location and type of high frequency lighting to be installed. A legend on item 1 lists the specification of each fitting types all of which are high frequency.

Therefore one credit can be awarded.

Health & Wellbeing
Hea 5 – Internal and external lighting levels

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**1**

Aim

To ensure lighting has been designed in line with best practice for visual performance and comfort.

Criteria

Credits	
1	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.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. Design drawing, RE:GENERAL & EMERGENCY LIGHTING INSTALLATION, C1197/E01, dated October 2011
2. Specification, Section Four, Mechanical and Electrical Design Standards, Page 1
3. The Society of Light and Lighting , Declaration of Conformity to Lighting Guide &, completed by Dynamic design, dated 20/12/11

Validation Statement

Item 1 lists all the M&E consultants design lighting levels and contractors design lighting levels for each space. These lighting levels were in accordance with CIBSE lighting levels for both internal and external areas at design stage, refer to item 2, as listed in item 1.

Item 3 is a letter required from the contractors designer stating that the design is in compliance with Lighting guide 7.

One credit awarded.

Health & Wellbeing
Hea 9 – Volatile Organic compounds

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	1

Aim

To recognise and encourage a healthy internal environment through the specification of internal finishes and fittings with low emissions of volatile organic compounds (VOCs).

Criteria

Credits	
1	Where evidence provided demonstrates that the emissions of VOCs and other substances from key internal finishes and fittings comply with best practice levels.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. Email from D. Leggett to S. Dunn, RE:BFI MFS- BREEAM Evidence Hea9
2. Dulux Trade, VOC 2010 FAQ's
3. Warrington Certificate, Number: 1121-CPD-BC0007
4. Fax to D McKenna of GA from Chris of CECO, Regarding BFI, dated 12-1
5. Email from C Robinson of GA to D McKenna of GA, Subject BFI data sheets, dated 13/01/12

Validation Statement

Item 1 confirms that the following design products meet the relevant standards for VOC emissions, plywood, rubber flooring, suspended ceiling, flooring adhesives and decorative paints.

Item 2 confirms that the decorative paint chosen go beyond the current standard and is already VOC 2010 compliant. Item 3 confirms that the suspended ceiling membrane is compliant with the current European standards. Item 1 confirms that the rubber flooring conforms to EN14041 as well as the Blue Angel certification together confirming that the flooring is compliant.

Item 4 states that the Uzin KE66 floor adhesive was awarded the “blue angel” for low emission floor covering adhesives in compliance with RAL-UZ 113. The Manufacturer technical data sheet states that the product is very low emissions.

Item 5 is correspondence from the contractors buyer to the Contractor manager, the buy have attached the data sheet for the plywood used on site. Item 6 is the data sheet that states the plywood si classified as En 13986, which is low VOC and therefore compliant.

Therefore one credit is awarded.

Health & Wellbeing
Hea 12 – Microbial contamination

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**1**	**1**	**1**	**1**	**1**

Number of credits achieved:	**1**

Aim

To ensure the building services are designed to reduce the risk of legionellosis in operation.

Criteria

Credits	
1	Where evidence provided demonstrates that the risk of waterborne and airborne legionella contamination has been minimised.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. Letter from T. Caulfield of JBE Building Services Limited, RE: HEA 12 Microbial Contamination, dated 25th November 2011

Validation Statement

Item 1 confirms that all the systems have been installed in accordance with HSE Approved code of practice and guidance L8, the control of legionella bacteria in water systems.

Therefore 1 credit is awarded

Health & Wellbeing
Hea 14 – Office space

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	-	-	-	-	-

Number of credits achieved:	2

Aim

To recognise steps taken to provide a good working environment in smaller office areas within the development.

Criteria

Up to two credits are available as follows:

Credits	
2	Where evidence provided demonstrates that office space within the development that is less than 500m^2 achieves best practice in terms of occupant comfort and control.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**
Second Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. SDS site report for BFI, dated 5th September 2011
2. Gilbert Ash AS BUILT DRAWING, RE: ELEVATIONS 03 & 04, BFI_L_062, REVISION E, dated05th February 2010
3. Gilbert Ash AS BUILT DRAWING, RE: SECTIONS 01 & 02, BFI_L_051, REVISION F, dated 05th February 2010
4. Gilbert Ash AS BUILT DRAWING, RE: ELEVATIONS 01 & 02, BFI_L_061, REVISION E, dated 05th February 2010
5. JBE drawing AS INSTALLED drawing, "Cell supply Ventilation", C1198/M01, Rev -, dated 05/10/11
6. JBE drawing AS INSTALLED drawing, "Cell extract Ventilation", C1198/M02, Rev -, dated 05/10/11
7. JBE drawing AS INSTALLED drawing, "AC Ventilation Staff areas", C1198/M03, Rev -, dated 06/10/11
8. Letter from JBE to assessor, Re BREEAM Hea14 Indoor Air Quality, BFI Master Film Store [redacted] dated 25/11/11
9. Design drawing, RE:GENERAL & EMERGENCY LIGHTING INSTALLATION, C1197/E01,

dated October 2011
10. Letter from D McKenna of GA to assessor, Re BREEAM Hea10 Thermal Comfort, Master Film Store, dated 11/12/11

Validation Statement

At design stage six out of the eight measures are to be met for at least 80% of the office space floor area. The following measures were targeted:

a. View Out

Item 1 states that the building layout and window opening have not changed from the original design drawings. This is shown in the "As built" information items 2 - 7, which show the layout and elevations. Items 2 -7 show the relevant building areas are within 7 meters of a wall with a window that has a greater area than 20% of the total wall area and that there is an adequate view out at eye level as the window is 900mm high with a cill 1.15m above the finished floor level. This part of the issue is compliant.

b. Glare Control

Item 1 demonstrates the manually controlled vertical blinds in occupied areas. Items 2 & 4 confirm that all the ancillary areas and workshop will contain low glare louvers or diffusers. This part of the issue is compliant.

c. Lighting Zones and Controls

Item 9 demonstrates that the offices, meeting rooms, corridors and workshops are all controlled separately. Item 9 demonstrates that office areas do not require any subdivision of lighting zones as the office consists of four work stations within an area of 17.5 m^2. This part of the issue is compliant.

e. Indoor Air Quality

Items 5 – 7 demonstrate that all louvers have a minimum 10 metres separation distance to minimise recirculation. Items 5 – 7 demonstrate that the air intakes are over 20 metres from any public highway and any other source of external pollution. Item 9 confirms the Fresh Air Rate for each occupied space, each office is 12 l/s per person. Item 7 demonstrates that the offices are fully air conditioned. This part of the issue is compliant.

f. Thermal Comfort

Item 10 confirms that No changes have occurred since the design stage Thermal Comfort assessment was carried out therefore the design stage evidence is an accurate reflection of the actual installation and thermal comfort conditions that will be achieved. This part of the issue is compliant.

g. Thermal Zoning

Item 1 shows evidence of the type of controls for the offices and ancillary spaces to allow the users full control of the thermal comfort. Item 7 demonstrates that there is no perimeter area greater than 7

metres as the rooms are very shallow from the external wall which is illustrated in Item 2. This part of the issue is compliant.

Energy

Energy
Ene 1 – Reduction of CO_2 emissions

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**6**	**10**

Number of credits achieved:	8

Aim

To recognise and encourage buildings that are designed to minimise the CO_2 emissions associated with their operational energy consumption.

Criteria

Up to 15 credits are available:

Credits	
15	Where evidence provided demonstrates an improvement in the energy efficiency of the building's fabric and services and therefore achieves lower building operational related CO_2 emissions.

Schedule of Evidence

8 of 15 Credits achieved *(For full explanation please refer to Validation Statement)*
1. Energy Performance Certificate BFI, By J. McCullough of SDS, dated 23/02/12

Validation Statement

Item 1 confirms that the an assessment of the Building Regulations 2006 Part L Carbon Compliance was carried out using the approved IES Virtual Environment software version 6.1.1.

Item 1 also confirms that the software was utilised to provide an EPC. The target CO_2 index is 8 BREEAM credits and an EPC 'B-31'. A copy of the EPC is submitted, conducted by J McCullough of SDS Energy, complete with assessor number, states that the Energy Performance Asset Rating is 31, therefore 8 credits are awarded.

Energy
Ene 2 – Sub-metering of substantial energy uses

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**1**	**1**	**1**

Number of credits achieved:	1

Aim

To recognise and encourage the installation of energy sub-metering that facilitates the monitoring of in-use energy consumption.

Criteria

Credits	
1	Where evidence provided demonstrates the provision of direct sub-metering of energy uses within the building.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. SDS site report for BFI, dated 5th September 2011
2. As installed drawing, GAS INSTALLATION SCHEMATIC, C1198/M15, dated October 2011
3. As installed drawing, MAIN L.V WIRING SCHEMATIC, C1197, dated August 2010
4. As installed drawing, LTHW SCHEMATIC, C1198/M12, dated October 2011

Validation Statement

Item 1 shows various photographs that show the metering and labelling of different meters. Item 2 shows the LPG gas meter linked to the BMS. Item 3 shows all the Electrical sub metering linked to the BMS for the main wiring schematic as installed. Item 3 shows that the dehumidification, lighting, power, AHUs (fans), Chillers (cooling) and Domestic Hot water POU heaters.

Item 4 shows the heat meters linked to the BMS for the heat recovery from the chillers, LPG boilers and heat to the offices ancillary spaces.

One credit awarded.

Energy
Ene 3 – Sub-metering of high energy load and tenancy areas

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**1**

Aim

To recognise and encourage the installation of energy sub-metering that facilitates the monitoring of in-use energy consumption by tenant or end user.

Criteria

Credits	
1	Where evidence provided demonstrates sub-metering of energy consumption by tenancy/building function area is installed within the building.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. SDS site report for BFI, dated 5th September 2011
2. As installed drawing, MAIN L.V WIRING SCHEMATIC, C1197, dated August 2010
3. As installed drawing, LTHW SCHEMATIC, C1198/M12, dated October 2011

Validation Statement

Item 1 shows various photographs on the sub-metering and labelling in the main switch room on site during the site inspection.

Items 2 & 3 demonstrate that the ancillary space is sub metered for power, lighting and space heating.

One credit awarded.

Energy
Ene 4 – External lighting

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**0**

Aim

To recognise and encourage the specification of energy-efficient light fittings for external areas of the development.

Criteria

Credits	
1	Where energy-efficient external lighting is specified and all light fittings are controlled for the presence of daylight.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**No**

1. Design drawing, General/Emergency Lighting Installation, C1197/E01, dated October 2011
2. Manufacturers Technical data sheet 'ARICA'
3. Manufacturers Technical data sheet 'ROBUS'
4. Manufacturers Technical data sheer 'PIAZZA II'
5. Manufacturers Technical data sheer 'ANSELL'
6. Manufacturers Technical data sheet 'RAYLUX 100 FUSION'
7. Manufacturers Technical data sheet 'RAYLUX 200'

Validation Statement

Item 1 demonstrates the contractor has selected the lighting fitting based on the performance specification of the M&E consultant. The lighting fittings that are listed in item 1 have the technical date sheets items as items 2- 7 above.

Unfortunately the technical data sheets do not provide any information as to the efficacy or rendering index of the installed lighting fittings and lamps.

Item 1 confirms the location of external lighting, photocells and time clock.

Credit withheld.

Energy
Ene 5 – Low or zero carbon technologies

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**1**	**1**

Number of credits achieved:	**4**

Aim

To reduce carbon emissions and atmospheric pollution by encouraging local energy generation from renewable sources to supply a significant proportion of the energy demand.

Criteria

Up to a maximum of three credits can be awarded as follows:

Credits	
1	Where evidence provided demonstrates that a feasibility study considering local (*on-site* and/or *near site*) low or zero carbon (LZC) technologies has been carried out and the results implemented.
2	Where evidence provided demonstrates that the first credit has been achieved and there is a 10% reduction in the building's CO_2 emissions as a result of the installation of a feasible local LZC technology.
3	Where evidence provided demonstrates that the first credit has been achieved and there is a 15% reduction in the building's CO_2 emissions as a result of the installation of a feasible local LZC technology.

Alternatively a maximum of one credit is awarded as follows:

Credits	
1	Where evidence provided demonstrates that a contract with an energy supplier is in place to provide sufficient electricity used within the assessed building/development to meet the above criteria from a 100% renewable energy source. (Note: a standard Green Tariff will not comply)

Schedule of Evidence

4 of 4 Credits achieved *(For full explanation please refer to Validation Statement)*

1. Appraisal of Renewable and Low Carbon Technology Energy Options Report, CPW, REV C, dated 27th July 2010
2. Building Regulations Part L Compliance Report, CPW, REV 3, dated 13th September 2010
3. Alternative Dehumidification Appraisal Report, CPW, REV 1, dated 18th August, 2010
4. Email from B. Olatoregun to S. Ball, RE: ENDQ9424 (2), Industrial 2008: POL 4: BFI BREEAM Credits Enquiry – On behalf of Keith Terry (Qualified Industrial Assessor), dated 27th September 2010
5. BRUKL Output Document, 09152_BFI_Master_Fil, Base Model, dated 5th January 2011
6. BRUKL Output Document, 09152_BFI_Master_Fil, Waste heat, dated 5th January 2011
7. Certificate, John McCullough, CIBSE, Low Carbon Building Design to comply with Building Regulations and the EPBD in the UK, date of expiry 31 August 2011
8. Certificate, John McCullough, CIBSE, Low Carbon Energy Assessor Level 3 and Level 4 for the production of EPCs, date of expiry 31 August 2011
9. SDS site report for BFI, dated 5th November 2011-11-29
10. JBE Drawing as installed, chilled water schematics drawing number: C1198/M13, REV - ,dated 5th November 2011

Validation Statement

Item 11 shows various photographs of the chillers, AHUs, LPG boilers and heat recovery units showing the installation is the same as the design drawings. The as installed chilled water schematic shows this referenced as item 10. The original design stage validation has been kept below for clarity.

Item 1 confirms that a feasibility study was carried out by Dr S. J. Ball of CPW at the RIBA Stage C to establish the most appropriate LCZ energy source. The feasibility study specified biomass as the recommended technology.

Item 2 confirms that modifications occurred throughout the design stage and after assessing the CO_2 reduction from the utilisation of heat recovery from the chillers, a dehumidification appraisal (Item 3) occurred stating that a minimum of 10% reduction of CO_2 is achievable.

Item 3, the Alternative Dehumidification Appraisal confirms a full feasibility study was carried for the heat recovery from the chillers. Appendix 2 of Item 3 illustrates the proposed installation of the dehumidification process along with the installation of two LPG boilers, which will be utilised as a backup in the event of failure conditions only.

Item 4 confirms that BRE recognises the heat recovered from the chillers is compliant with this particular credit.

Items 5 and 6 are BRUKL output documents produced by the approve energy software programme IES Virtual Environment. Items 5 demonstrates the BRUKL output for a base model of natural gas which had a predicted building CO_2 emission rate (BER) of 11 $kgCO_2/m^2/yr$. Item 6 demonstrates the BRUKL output for the recovery of waste heat which has a significantly lower predicted BER of 6.3 $kgCO_2/m^2/yr$. Therefore the recovery of waste heat provides a reduction of CO_2 of 57.27%.

Items 7 and 8 confirm the expertise and experience of the individual carrying out the modelling.

Items 9 &10 confirm that the chillers with waste heat recovery have been installed.

Three credits awarded plus an additional exemplary credit, giving a total of four credits.

Energy
Ene 6 – Building fabric performance and avoidance of air infiltration

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**1**

Aim

To recognise and encourage measures taken to minimise heat loss and air infiltration through the building fabric.

Criteria

Credits	
1	Where evidence provided demonstrates that appropriate design and as built performance measures are taken to minimise heat loss and air infiltration through the building fabric.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. BSRIA Report Number: 25788D/1, Results of the Envelope Air tightness Test for new film Storage Facility BFI National Archive, Warwickshire, dated May 2011
2. BSRIA Report Number: 25788e, Thermal Imaging Report at BFI National Film Archive, Lighthorne, Warwick, dated August 2011

Validation Statement

Item 1 confirms that the contractor has carried out an air pressure test of the building, tested in accordance with CIBSE TM23: 2000 and BS EN 13829. Item 2 confirms that the contractor has carried out a Thermographic study and report in compliance with BS EN 13187. The report confirms that there were no defects and the insulation was continuous.

One credit awarded.

Transport

Transport
Tra 1 – Provision of public transport

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**0**

Aim

To recognise and encourage development in proximity to good public transport networks, thereby helping to reduce transport-related emissions and traffic congestion.

Criteria

Credits	
3	The credits are awarded on a sliding scale based on the assessed buildings' accessibility to the public transport network.

Schedule of Evidence

0 of 3 Credits achieved *(For full explanation please refer to Validation Statement)*
No references received

Validation Statement

The development is situated in a rural region beyond the public transport network, therefore no information has been received in relation to this credit.

Credit withheld

Transport
Tra 2– Proximity to amenities

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**0**

Aim

To encourage and reward a building that is located in proximity to local amenities, thereby reducing the need for extended travel or multiple trips.

Criteria

Credits	
1	Where evidence provided demonstrates that the building is located within 500m of *accessible local amenities* appropriate to the building type and its users.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**No**
No references received.	

Validation Statement

The development is situated in a rural region beyond the proximity to amenities; therefore no information has been received in relation to this credit.

Credit withheld.

Transport
Tra 3 – Cyclist facilities

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**2**

Aim

To encourage building users to cycle by ensuring adequate provision of cyclist facilities.

Criteria

Credits	
1	Where evidence provided demonstrates that covered, secure and well-lit cycle storage facilities are provided for all *building users*.
2	Where, in addition to the above, adequate changing facilities are provided for staff use.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**
Second Credit achieved *(For full explanation, please refer to Validation Statement)*	**Yes**

1. SDS site report for BFI, dated 5th November 2011
2. Design drawing, GENERAL/EMERGENCY LIGHTING INSTALLATION, C1197/E01, dated October 2011
3. As installed drawing, STAFF AUXILLARY PLUMBING LAYOUT, C1198/M06, dated October 2011
4. GA As built drawing, Ground floor plan, Rev I , dated 16/09/10
5. Letter to T Caulfield of JBE from T McPolin Dynamic, Electrical Services Installation, dated 20/12/11

Validation Statement

Item 1 confirms that the “Sheffield” style cycle rack has been installed in a covered location adjacent to the entrance door to the ancillary area. Item 2 confirms that the lighting has been installed above the cycle racks.

Item 1 shows a photograph of the locker that were provided and item 3 confirms the measurements of the lockers which are 809x305x460mm, which are compliant.

Item 3 confirms that a single mixed shower room will be provided which integrates into a changing facility of at least 1 m^2. Item 4 demonstrates that has been provided in the changing space.

Item 4 confirm that no changes have been made to the layout or size of the building meaning that the cycle rack provision is still current based on the follow design stage validation. BFI currently employees 5 members of staff and an additional 3 people are employed as contractors which work at the site intermittently. This confirms that 10% of 8 equates to 1 space.

Item 5 confirms that the external lighting covering the cycle facilities is in accordance with the requirements of BS 5489 Part 1.

2 credits awarded.

Transport
Tra 4 – Pedestrian and cyclist safety

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**0**

Aim

To recognise and encourage the provision of safe and secure pedestrian and cycle access routes on the development.

Criteria

Credits	
1	Where evidence provided demonstrates that the site layout has been designed in accordance with best practice to ensure safe and adequate pedestrian and cycle access.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**No**
No references received	

Validation Statement

This credit was not awarded at the design stage of this assessment. In future recognise and encourage the provision of safe and secure pedestrian and cycle access routes within the development.

Transport
Tra 5 Travel plan

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	1

Aim

To recognise the consideration given to accommodating a range of travel options for building users, thereby encouraging the reduction of user reliance on forms of travel that have the highest environmental impact.

Criteria

Credits	
1	Where evidence provided demonstrates that a travel plan has been developed and tailored to the specific needs of the *building users*.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**
1. SDS site report for BFI, dated 5th November 2011	

Validation Statement

The evidence for the Post Construction stage is largely the same as at the Design stage. Item 1 shows photographs that show the cycle rack, changing, lockers and shower facilities as discussed in the Travel plan.

One credit awarded.

Transport
Tra 6 – Maximum car parking capacity

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	2

Aim

To encourage the use of alternative means of transport to the building other than the private car, thereby helping to reduce transport related emissions and traffic congestion.

Criteria

Credits	
2	Where evidence provided demonstrates that the number of parking spaces provided for the building has been limited.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**
Second Credit achieved *(For full explanation, please refer to Validation Statement)*	**Yes**

1. SDS site report for BFI, dated 5th November 2011
2. Gilbert Ash AS BUILT DRAWING, RE: PROPOSED DRAINAGE LAYOUT sheet 1 of 2, 70506-D01, REVISION E, date 11th January 2010
3. BFI National Archive Master Film Store, Supporting Information for a Planning Application, 5.1 Use, Existing Use.

Validation Statement

Item 1 shows photographs of the car park area, item 2 shows the as built drawing showing that the number of car parking spaces has remained the same from the design stage assessment.

Item 3 confirms the BFI currently employs 5 members of staff at the site. Therefore there is 1 parking space provided for every 5 building users and 2 credits can be awarded.

Transport
Tra 8 – Deliveries and manoeuvring

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**1**

Aim

To ensure that safety is maintained and disruption due to delivery vehicles minimised through well-planned layout and access to the site.

Criteria

Credits	
1	Where evidence provided demonstrates that vehicle access areas have been designed to ensure adequate space for manoeuvring delivery vehicles and provide space away from manoeuvring area for storage of refuse skips and pallets.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. SDS site report for BFI, dated 5th November 2011
2. Gilbert Ash AS BUILT DRAWING, RE: PROPOSED DRAINAGE LAYOUT sheet 1 of 2, 70506-D01, REVISION E, date 11th January 2010

Validation Statement

Items 1 & 2 confirm that the delivery area is to the rear of the building as per the design drawings. This credit was awarded at the design stage therefore 1 credit can be awarded.

Water

Water
Wat 1 – Water Consumption

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**1**	**1**	**1**	**2**

Number of credits achieved:	**2**

Aim

To minimise the consumption of potable water in sanitary applications by encouraging the use of low water use fittings.

Criteria

Credits	
3	Where evidence provided demonstrates that the specification includes taps, urinals, WCs and showers that consume less potable water in use than standard specifications for the same type of fittings.

Schedule of Evidence

2 of 3 Credits achieved
(For full explanation please refer to Validation Statement)

1. SDS site report for BFI, date 5th November 2011
2. Manufacturers Technical data sheet, TWYFORD BATHROOMS, MODA FLUSHWISE, dated 18th November 2011
3. Manufacturers Technical data sheet, MIRA AZORA, ELECTRICAL SHOWER, dated
4. Design drawing, STAFF AUXILLARY PLUMBING LAYOUT, C1198/M06, dated October 2011

Validation Statement

Item 1 shows photographs of WC, flushing controls, Shower and Taps, there is one of each appliance. Item 1 and 2 show the flushing capacity of the WV is 4/2.6 litres, with symbols on the buttons. Items 1 & 4 show there were no urinals installed.

Item 4 states that the flow rate of the shower unit and WHB taps are 6 and 3 l/s respectively at 0.3 Pa.

The net water consumption for the building in respect of the installed sanitary fittings is outlined in the BREEAM calculator is included in the appendix at the rear of this report as 4.05 m^3/person/year. Therefore 2 credits may be awarded.

Water
Wat 2 – Water meter

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**1**	**1**	**1**	**1**

Number of credits achieved:	**1**

Aim

To ensure water consumption can be monitored and managed and therefore encourage reductions in water consumption.

Criteria

Credits	
1	Where evidence provided demonstrates that a water meter with a pulsed output will be installed on the mains supply to each building/unit.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. SDS site report for BFI, dated 5th November 2011
2. Manufacturers Technical data sheet, SENUS, HRI, not dated
3. Manufacturers Technical data sheet, SWITCH2 ENERGY SOLUTIONS, SENTINAL, not dated
4. Manufacturers Technical data sheet, SENUS, MEI STREAM, not dated

Validation Statement

Item 1 confirms that the water meter has a pulsed output facility linked to the BMS, photograph showing the external water meter in its incoming. Items 2 - 4 confirms the various water meters installed, one at the boundary , one in the incoming plantroom and one to record the ancillary block usage.

One credit awarded.

Water
Wat 3 – Major leak detection

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**1**

Aim

To reduce the impact of major water leaks that may otherwise go undetected.

Criteria

Credits	
1	Where evidence provided demonstrates that a leak detection system is specified or installed on the buildings water supply.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. SDS site report for BFI, dated 5th November 2011
2. Manufacturers Technical data sheet, AQUALEAK DETECTION LTD, not dated
3. Design drawing, STAFF AUXILLARY PLUMBING LAYOUT, C1198/M06, dated October 2011

Validation Statement

Item 1 shows photographs of the Aqua leak detection system that has been installed as shown in item 3. The Contractor has supplied the manufacturer's technical data sheet for the system referenced as item 2 above.

Item 2 states that the system is BREEAM compliant as it has the following functions a water leak detection will be located between the site boundary and the building with two turbine sensors within the control unit. The control unit will be connected to the BMS to raise an alarm in the event of a leak and will be fully programmable with a pulsed output with the ability to pre-set the water flow rate.

One credit awarded

Water
Wat 4 – Sanitary supply shut-off

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**1**

Aim

To reduce the risk of minor leaks in toilet facilities.

Criteria

Credits	
1	Where evidence provided demonstrates that proximity detection shut-off is provided to the water supply to all toilet areas.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**
1. Design drawing, STAFF AUXILLARY PLUMBING LAYOUT, C1198/M06, dated October 2011	

Validation Statement

Item 1 confirms that a water shut off PIR controlled solenoid valve has been installed to control the water to the WCs.

One credit awarded

Materials

Materials
Mat 1 – Materials specification

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	1

Aim

To recognise and encourage the use of construction materials with a low environmental impact over the full life cycle of the building.

Criteria

Credits	
2	The credits are determined using the *Green Guide to Specification* ratings for the major building elements.

Schedule of Evidence

1 of 2 Credits achieved
(For full explanation please refer to Validation Statement)

1. SDS site report for BFI, dated 5th November 2011
2. Gilbert Ash AS BUILT DRAWING, ELEVATIONS 03 & 04, BFI_L_062, REVISION E, dated November 2011
3. Gilbert Ash AS BUILT DRAWING, SECTIONS 01 & 02, BFI_L_051, REVISION F, dated November 2011
4. Gilbert Ash AS BUILT DRAWING, ELEVATIONS 01 & 02, BFI_L_061, REVISION E, dated November 2011
5. Gilbert Ash AS BUILT DRAWING, Site plan, BFI_GL_000, REVISION G, dated November 2011
6. BREEAM Calculator, Mat 1 Materials Specification

Validation Statement

Item 1 contains various photographs showing the finish of the exterior walls, roof, internal walls, flooring and windows. Item 2 to 5 are the as built drawings showing the elevations, Sections and site plans, showing the external wall finishes and the roof finish. These demonstrate there have been no specification changes since the design stage.

Item 6 illustrates that the Mat 1 calculator showing 1 credit has been achieved, as copy of the Mat 1 calculator has been included in the appendix at the rear of the report.

One credit awarded.

Materials
Mat 2 – Hard landscaping and boundary protection

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**1**

Aim

To recognise and encourage the specification of materials for boundary protection and external hard surfaces that have a low environmental impact, taking account of the full life cycle of materials used.

Criteria

Credits	
1	Where evidence provided demonstrates that at least 80% of the combined area of external hard landscaping and boundary protection specifications achieve an A or A+ rating, as defined by the *Green Guide to Specification*.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. SDS site report for BFI, dated 5th November 2011
2. Gilbert Ash AS BUILT DRAWING, Site plan, BFI_GL_000, REVISION G, dated November 2011

Validation Statement

Item 1 contains various photographs showing the finish of the car park area, finished in concrete. Item 2 is the “As built” site plans which confirms that the layout has not been altered from design stage.

As per the design stage report there has been no alteration proposed for the existing boundary protection and that the only applicable hard landscaping area is the carparking area.

The design stage evidence stated that a 200mm in-situ concrete area will be used utilising recycled hardcore from the demolition rubble which corresponds to the element number 822120036 rated ‘A’.

One credit awarded

Materials
Mat 5 – Responsible sourcing of materials

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**0**

Aim

To recognise and encourage the specification of responsibly sourced materials for key building elements.

Criteria

Credits	
3	Up to 3 credits are available where evidence provided demonstrates 80% of the assessed materials in the following *finishing elements* are responsibly sourced: a. Structural Frame b. Ground floor c. Upper floors (including separating floors) d. Roof e. External walls f. Internal walls g. Foundation/substructure h. Staircase Additionally 100% of any timber must be legally sourced.

Schedule of Evidence

0 of 3 Credits achieved
(For full explanation please refer to Validation Statement)

1. Letter from D McKenna of GA to J McCullough of SDS, re Contractor information for BREEAM, dated 27/08/10
2. Email from J McGerty of GA to J. McCullough of SDS, subject BFI, dated 09-03-11
3. ISO 14001 Certificate for Creagh Concrete Products, certificate Number 538, dated 03/10/05

Validation Statement

This credit was not awarded at design stage, the validation has been stated below.

Item 1 states that that contractor will source materials from responsible sources. Item 2 contains a completed Mat 5 calculator with a percentage break down of the materials for each element. Item 3 is ISO 14001 certificate for the manufacture of the concrete products supplied by Creagh Concrete products. No other certificates have been provided. The Concrete products have been classified as Tier 4 and the Green roof materials have been classified at Tier 1. However these products are not sufficient to award any credits under this issue.

Materials
Mat 6 – Insulation

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**2**

Aim

To recognise and encourage the use of thermal insulation which has a low embodied environmental performance relative to its thermal properties and has been responsibly sourced.

Criteria

Up to two credits are available as follows:

Credits	
1	Where evidence provided demonstrates that thermal insulation products used in the building have a low embodied impact relative to their thermal properties, determined by the *Green Guide to Specification* ratings.
1	Where evidence provided demonstrates that thermal insulation products used in the building have been responsibly sourced.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**
Second Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. SDS site report for BFI, dated 5th November 2011
2. Letter from D. McKenna of Gilbert Ash, RE: MAT6 INSULATION, dated 16th November 2011
3. 'CLERK OF WORKS WEEKLY SITE REPORT' from D.Kneale of JBA, dated 16th January 2011
4. NSAI Environmental Management System IS EN ISO 14001:2004 for Kinspan Insulation Ltd, registration Number 140399, dated 08/07/09
5. Email from T Caulfield of JBE to J McCullough, subject FW BFI BREEAM m3 for Pipe insulation, dated 04/03/11
6. Email from T Caulfield of JBE to J McCullough, subject FW BFI insulation, dated 16/03/11
7. Email from P Brown of JPS to J McCullough, subject re Phenolic pipework insulation, dated 16/03/11
8. Email from T Caulfield of JBE to J McCullough of SDS, Subject BFI Insulation, dated 28/02/11
9. Email from M Hunter of Isover insulation, Re Contact from the site, dated 07/03/11

10. NBS specification clause for Isover High performance duct wrap, dated 07/03/11

Validation Statement

First credit

Item 1 shows various photographs from around the site at Practical completion stage, unfortunately no insulation was visible as the building was nearing completion. Item 2 confirms the insulation types that were used for the building fabric:-

External walls:- 200m Kingspan Kooltherm K3
Ground floor- 200m Kingspan Kooltherm K3
Roof - 200m Kingspan Kooltherm K3

Item 8 provides the information for the duct insulation. Items 9 & 10 confirm the conductivity and density. This product is “A+” rated according to the green guide element No. 815320007.

Item 5 confirms the volume of the pipework insulation. Item 6 confirms that the insulation will be sourced from JPS Insulation services who source the insulation from GRM, refer to item 7. The majority of the pipework insulation is Phenolic foam and a small volume of Glass fibre. The green guide has no rating for Phenolic foam insulation so it has been assumed to be “E” rated. The glass fibre has been rated as “A+” rated according to the green guide element No. 815320002. Item 1 shows that the pipework insulation is a different manufacturer “Kingspan Tarec” but still Phenolic foam insulation.

The BREEAM Mat 6 calculator is included as an appendix at the rear of this report. The calculator demonstrates that one credit can be awarded for this issue.

Second credit

Item 2 confirms that all the insulation to be installed in the construction of the building fabric is to be from the manufacturer “Kingspan”. Item 4 demonstrates that the “Kingspan” insulation is manufactured to ISO 14001 Environmental Management Standards. The information has been entered into the Mat 6 calculator included in the appendix at the rear of this report which shows one credit can be awarded.

Materials
Mat 7 – Designing for robustness

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**1**

Aim

To recognise and encourage adequate protection of exposed parts of the building and landscape, therefore minimising the frequency of use of replacement materials.

Criteria

Credits	
1	Where protection is given to vulnerable parts of the building such as areas exposed to high pedestrian traffic, vehicular and trolley movements.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**
1. SDS site report for BFI, dated 5th November 2011	

Validation Statement

Item 1 contains photographs showing the various protection measures that have been implemented to protect the building. These include raised kerbs, Bollards, corridor railing, rubber flooring, car park kerbs, door protection rails, kick plates and entrance matting.

One credit awarded.

Waste

Waste
Wst 1 – Construction site waste management

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**4**

Aim

To promote resource efficiency via the effective and appropriate management of construction site waste.

Criteria

Credits	
1	Where evidence provided demonstrates that waste generated by the fit-out works will be sorted, separated into key waste groups and measured.
1	Where evidence provided demonstrates that the majority of non-hazardous construction waste generated by the fit-out works will be diverted from landfill and reused or recycled.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**
Second Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**
Third Credit achieved *(For full explanation, please refer to Validation Statement)*	**Yes**
Fourth Credit achieved *(For full explanation, please refer to Validation Statement)*	**No**

1. Site Waste Management Plan for BFI Archives by GA, dated 21/10/2011
2. Gilbert Ash Waste Transfer note, dated 20/12/11
3. Burntwood Road Sweepers Ltd, Duty of Care Waste transfer notice, ref 215146, dated 05/05/11
4. Country Waste Recycling Ltd, Transfer Note/ Delivery/ Invoice, ref 002138, dated 25/11/11

Validation Statement

Item 1 is the final Site Waste Management Plan from the Main Contractor. Item 1 gives a figure for the total waste arising for the development as 100.7 Tonnes which works out as 3.4 Tonnes/100m^2. This would mean that the development qualifies for 3 credits under the resource efficiency benchmarks.

Item 1 page 14 provides a detailed breakdown of the quantities of the various waste streams including m^3 and Tonnage as well as where the waste was diverted to, i.e. landfill, reused, recycled, recover, disposal.

Item 2 shows a typical Waste transfer notice which records the waste producer, carrier and disposal of the waste. Item 3 and 4 also show how the waste has been transferred and recorded for road sweepings and brick waste. This shows waste is being sorted into key waste groups and disposed of or recycled responsibly. Compliance requirement 4 is satisfied.

3 credit awarded for this first section of this issue.

Additional credit

Item 1 page 9 shows the percentage of waste diverted from landfill as 98% (276.4m^3). Based on these results the project exceeds the resource efficiency benchmarks.

Item 1 demonstrates that no non-hazardous waste will be disposed off into landfill. Therefore the non-hazardous waste diverted from landfill is 98%.

Item 1 states that Insulation, Packaging, General waste and mixed waste have been taken to landfill on the final SWMP. So as all the key waste groups have been sorted the exemplary credit can be awarded.

A total of four credits awarded.

Exemplary credit was not awarded at design stage so it cannot be achieved at this stage.

Four credits in total.

Waste
Wst 3 – Recyclable waste storage

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**1**	**1**

Number of credits achieved:	1

Aim

To recognise the provision of dedicated storage facilities for a building's operational-related recyclable waste streams, so that such waste is diverted from landfill or incineration.

Criteria

Credits	
1	Where a central, dedicated space is provided for the storage of the building's recyclable waste streams.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. SDS Site report for BFI, dated 5th November 2011
6. Gilbert Ash AS BUILT DRAWING, RE: GROUND FLOOR PLAN, BFI_L_000, REVISION I, dated 27th November 2009
2. Gilbert Ash AS BUILT DRAWING, Site plan, BFI_GL_000, REVISION G, dated November 2011

Validation Statement

Item 1 shows photographs of recycling room including the signage and internal shelving. Item 2 demonstrates the as built layout of the recycling store, which is the same size and location as design stage.

Item 2 confirms that the dedicated recyclable storage area is located within the building, 20 metres from the entrance. Item 2 confirms the location of the dedicated recyclable storage area within the building.

Item 2 shows that there is hard standing space beyond grid line “aB” which would be adequate for recyclable material to be sorted. Recyclable waste could be sorted in the internal waste store too. This complies with assessment criteria 2a. Item 2 confirms that the net office floor area is less than 1,000m^2 and that the dedicated recyclable waste area is over 10m^2. This complies with assessment criteria 2b.

One credit awarded

Waste
Wst 4– Compactor/baler

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	0

Aim

To recognise and encourage the provision of facilities which enable efficient and hygienic waste sorting and storage.

Criteria

Credits	
1	Where evidence provided demonstrates that either an industrial waste compactor or baler is installed for compacting/baling waste materials generated on site and a. A water outlet is provided for cleaning b. The development achieves the BREEAM credit for storage of recyclable waste.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**No**
No references provided	

Validation Statement

This credit was not awarded at design stage, the validation has been stated below.

No information has been received in relation to this credit. In future consider incorporating a compactor or baler to improve the storage, transport efficiency and to encourage minimisation of waste streams through an integrated approach of waste management, recycling and disposal.

Land Use & Ecology

Land Use & Ecology
LE1 – Reuse of land

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**0**

Aim

To encourage the reuse of land that has been previously developed, and discourage the use of previously undeveloped land for building.

Criteria

Credits	
1	Where evidence is provided to demonstrate that the majority of the footprint of the proposed development falls within the boundary of previously developed land.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**No**

1. Specification, 5.0: Design and Access Statement, Page 11
2. Design Drawing, Edward Cullinan Architects, Site Plan, BFI_ GL_000, REV E, dated 27th November 2010

Validation Statement

This credit was not awarded at design stage, the validation has been stated below.

Item 1 illustrates that the site prior to the development the area was concealed with grass and two bunkers which are to be demolished. Item 2 confirms that the majority of the development's footprint has been constructed on the grass area. Therefore this credit has been withheld.

Land Use & Ecology
LE2 – Contaminated land

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**0**

Aim

To encourage positive action to use contaminated land that otherwise would not have been remediated and developed.

Criteria

Credits	
1	Where evidence is provided to demonstrate that the land used for the new development has, prior to development, been defined as contaminated and adequate remedial steps have been taken to decontaminate the site prior to construction.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**No**
No evidence provided.	

Validation Statement

This credit was not awarded at design stage, the validation has been stated below.

No information has been received in relation to this credit. In future consider developing contaminated land that would not be remediated and developed otherwise.

Credit withheld.

Land Use & Ecology
LE3 – Ecological value of site and protection of ecological features

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**0**

Aim

To encourage development on land that already has limited value to wildlife and to protect existing ecological features from substantial damage during site preparation and completion of construction works.

Criteria

Credits	
1	Where evidence provided demonstrates that the site's 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.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**No**

1. Middlemarch Environmental Ltd, BREEAM Ecological Report Industrial 2008, BFI National Archive, NR [redacted] dated January 2010

Validation Statement

This credit has not been awarded at design stage, the validation has been stated below.

Item 1 confirms that the land does not meet with the BREEAM criteria for low ecological value. The report indicates that there is woodland and marshy grassland and trees therefore this credit is withheld.

Land Use & Ecology
LE4 – Mitigating Ecological Impact

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**1**	**1**	**1**

Number of credits achieved:	2

Aim

To minimise the impact of a building development on existing site ecology.

Criteria

Credits	
1	Where evidence provided demonstrates that the change in the site's existing ecological value, as a result of development, is *minimal*.
2	Where evidence provided demonstrates that there is *no negative change* in the site's existing ecological value as a result of development.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**
Second Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. Gilbert Ash, AS BUILT DRAWING, RE: LANDSCAPE LAYOUT & PLANTING SCHEDULE, BFI_X_30_120, REVISION B, dated 17th March 2010
2. Letter from D Smith of Middlemarch Environmental Ltd, to D McKenna of GA, Ref BFI Master Film Store – Gilbert Ash, dated 6/12/11

Validation Statement

The post construction vegetation plot types and areas were not visible during the post construction site visit at practical completion stage. Item 1 is the "As built" drawing which shows the various planting schemes were introduced. Furthermore the Ecologist has confirmed this in item 2.

The design stage calculations remain unchanged, resulting in a gain of 7.92 species with an ecological value of 17.20.

Therefore 2 credits can be awarded.

Land Use & Ecology
LE5 – Enhancing site ecology

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**3**

Aim

To recognise and encourage actions taken to maintain and enhance the ecological value of the site as a result of development.

Criteria

Credits	
1	Where the design team (or client) has appointed a suitably qualified ecologist to advise and report on enhancing and protecting the ecological value of the site; and implemented the professional's recommendations for general enhancement and protection of site ecology.
2	Where there is a positive increase in the ecological value of the site of up to (but not including) 6 species.
3	Where there is a positive increase in the ecological value of the site of 6 species or greater.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**
Second Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**
Third Credit achieved *(For full explanation, please refer to Validation Statement)*	**Yes**

1. Gilbert Ash AS BUILT DRAWING, RE: LANDSCAPE LAYOUT & PLANTING SCHEDULE, BFI_X_30_120, REVISION B, dated 17th March 2010
2. Letter from D Smith of Middlemarch Environmental Ltd, to D McKenna of GA, Ref BFI Master Film Store – Gilbert Ash, dated 6/12/11

Validation Statement

The evidence for the first compliance requirement of this credit is the same as the design stage.

The post construction vegetation plot types and areas were not visible during the post construction site visit at practical completion stage. Item 1 is the “As built” drawing which shows the various planting schemes were introduced. Furthermore the Ecologist has confirmed this in item 2.

Item 2 also confirms that the works were completed in a manner that minimised disturbance to any Wildlife within the area of the works.

Therefore 3 credits awarded.

Land Use & Ecology
LE6 – Long term impact on biodiversity

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	2

Aim

To minimise the long term impact of the development on the site's, and surrounding area's, biodiversity.

Criteria

Credits	
1	The client has committed to achieving the mandatory requirements listed below and at least two of the additional requirements.
2	The client has committed to achieving the mandatory requirements listed below and at least four of the additional requirements.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**
Second Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. SDS site visit for BFI, dated 5th November 2011
2. ECOLOGICAL CLERKS OF WORKS, DAILY RECORD SHEET/INSPECTION REPORT by D. Smith, dated 28th March 2011
3. Gilbert Ash AS BUILT DRAWING, RE: LANDSCAPE LAYOUT & PLANTING SCHEDULE, BFI_X_30_120, REVISION B, dated 17th March 2010
4. Letter from D Smith of Middlemarch Environmental Ltd, to D McKenna of GA, Ref BFI Master Film Store – Gilbert Ash, dated 6/12/11
5. EC Architects, Landscape & Habitat Management Plan, BFI Master Film Store, Stage E. Dated 25/03/10
6. Letter Middlemarch Environmental to J Pascall, re BREEAM industrial 2008 Ecological assessment – Amendment 1 BFI National Archive, [redacted] ref CO-MME-21558, dated 14/09/10

Validation Statement

Item 4 states that all relevant UK and EU legislation relating to protection and enhancement of ecology has been complied with. To comply with the first and second credit requirements of the mandatory items.

Item 4 is a copy of the Landscape and Habitat Management Plan, which has been written to cover the first five years after project completion. Item 4 page 4 states that there are no existing protected features on the site which require management prescriptions. Item 4, page lists the various management requirements of the new features introduced as part of the development. Item 4, refers us to item 6 which makes reference to the status of the BAP and other UK legislation.

Item 2 are copies of the site log of the Ecological Clerk of works. This provides various records of the ecological protection measures and constant monitoring of the Ecological Clerk of works and Biodiversity Champion Ciaran Leahy. This complies with the first and third credit requirements of the additional items.

Item 1 shows photographs that show the workforce training literature and a register signed by all the attendees. This complies with the second credit requirement of the additional items.

The post construction vegetation plot types and areas were not visible during the post construction site visit at practical completion stage. Item 3 is the “As built” drawing which shows the various planting schemes were introduced. Furthermore the Ecologist has confirmed this in item 4. This complies with the fourth credit requirement of the additional items.

Item 4 is a letter from the Ecologist which states that the site works were executed in a manner that minimised disturbance to wildlife in accordance with the their recommendations. This complies with the fifth credit requirement of the additional items.

Two credits awarded as the mandatory items have been satisfied and 4 additional items have been completed.

Pollution

Pollution
Pol 1 – Refrigerant GWP building services

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**0**

Aim

To reduce the contribution to climate change from refrigerants with a high global warming potential.

Criteria

Credits	
1	Where evidence provided demonstrates the use of refrigerants with a global warming potential (GWP) of less than 5 or where there are no refrigerants specified for use in building services.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**No**

1. Design Drawing, CPW, Chilled Water Services Schematic Incorporating Heat Recovery, 09152/M/300, Rev C2, dated June 2010
2. Specification, Section Nine,, Chilled Water Systems, 09.23 A, Air Cooled CHW Chillers, Page 14

Validation Statement

This credit has not been awarded at design stage, the validation has been stated below.

Item 1 confirms that there are 4 chillers units present within the design. Item 2 confirms the refrigerant types and when compared with Table 21 Refrigerant GWP of BREEAM credit POL 1 confirms the GWP is beyond the recommended 5, therefore this credit is withheld.

In future aim to incorporate refrigerants with a GWP of less than 5, as this will reduce the potential contribution towards climate change from refrigerants with a high GWP.

Pollution
Pol 2 – Preventing refrigerant leaks

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**0**

Aim

To reduce the emissions of refrigerants to the atmosphere arising from leakages in cooling plant.

Criteria

Credits	
1	Where evidence provided demonstrates that refrigerant leaks can be detected AND 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.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. Design Drawing, CPW, Chilled Water Services Schematic Incorporating Heat Recovery, 09152/M/300, Rev C2, dated June 2010

Validation Statement

This credit has not been awarded at design stage, the validation has been stated below.

Item 1 confirms there is no leak detection system present, therefore this credit is withheld.

In future incorporate a leak detection system to reduce the emissions of refrigerants to the atmosphere arising from leakages inn cooling plant.

Pollution
Pol 4 – NO_x emissions from heating source

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**2**

Aim

To encourage the supply of heat from a system that minimises NO_x emissions, and therefore reduces pollution of the local environment.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**
Second Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. SDS site report for BFI, dated 5the November 2011
2. Design drawing, LTHW Schematic, C1198/M12, dated October 2011
3. Design drawing, Chilled Water Services Schematic, C1198/M13, dated October 2011
4. Email from B. Olatoregun of BREEAM to S.Dunn, RE: ENDQ 9424 (2) : INDUSTRIAL 2008 : POL 4 : BFI BREEAM Credits Enquiry - On behalf of KEITH TERRY (QUALIFIED INDUSTRIAL ASSESSOR), dated 27/09/2010

Validation Statement

Item 1 shows that the same LPG boilers and chillers were installed. Items 2 & 3 show that the heat is recovered from four packaged chillers to provide heating to the ancillary area offices and provide frost protection to the fresh air filters.

Item 4 confirms that the heat recovered from the process cooling/dehumidification qualifies for zero NOx emissions.

Therefore 2 credits awarded

Pollution
Pol 5 – Flood risk

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**3**

Aim

To encourage development in low flood risk areas, or to take measures to reduce the impact of flooding on buildings in areas with a medium or high risk of flooding.

Criteria

Credits	
2	Where evidence provided demonstrates that the assessed development is located in a zone defined as having a **low** annual probability of flooding.
1	Where evidence provided demonstrates that the assessed development is located in a zone defined as having a **medium** or **high** 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 as follows:

1	Where evidence provided demonstrates that surface water run-off attenuation measures are specified to minimise the risk of localised flooding, resulting from a loss of flood storage on site due to development.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**
Second Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**
Third Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. Gilbert Ash, AS BUILT DRAWING, RE: DRAINAGE DETAILS sheet 1 of 3, 70506/D03, REVISION B, dated 10th February 2010
2. Gilbert Ash, AS BUILT DRAWING, RE: DRAINAGE DETAILS sheet 2 of 3, 70506/D04, REVISION B, dated 10th February 2010
3. Gilbert Ash, AS BUILT DRAWING, RE: PROPOSED DRAINAGE LAYOUT sheet 2 OF 2, 70506-D02, REVISION D, dated 25th February 2010
4. Letter from D. Mckenna of Gilbert Ash, RE: POL6 MINIMISING WATERCOURSE POLLUTION, dated 18th November 2011
5. SDS Site report for BFI, dated 05th September 2011
6. Letter from D Tan of Curtains Consulting Ltd to D Mckenna of GA, Re BFI Archive Store, [redacted] dated 11/01/12

Validation Statement

Compliance requirement 1 requires no further evidence from the design stage assessment.

Item 6 states that the design has not changed since the start of the construction works and as such there is no requirement to amend the flood risk assessment. This satisfies compliance requirement 2.

Items 1 - 3 show the “As built” site plans including drainage system and standard details, which meets with compliance requirement 3.

Two credits can be awarded for the flood risk.

Additional credit for SUDs

Item 5 shows various photographs of the Swales and SUDs system install as per the design drawings. The “As built” site plans including drainage system and standard details references 1-3. Item 4 is a letter from the design team which confirms that the SUDs system has been installed as per the design drawings and there has been no alteration. Item 4 also confirms that the “as built” drainage plans will be included in the O&M manual issued to the client.

One additional credit can be awarded for the SUD’s meaning a total of 3 credits for this issue.

Pollution
Pol 6 – Minimising watercourse pollution

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**1**

Aim

To reduce the potential for silt, heavy metals, chemicals or oil pollution to natural watercourses from surface water run-off from buildings and hard surfaces.

Criteria

Credits	
1	Where evidence provided demonstrates that effective on site treatment such as Sustainable Drainage Systems (SUDs) or oil separators have been specified in areas that are or could be a source of watercourse pollution.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. Letter from D. Mckenna of Gilbert Ash, RE: POL6 MINIMISING WATERCOURSE POLLUTION, dated 18th November 2011
2. Gilbert Ash AS BUILT DRAWING, RE: DRAINAGE DETAILS sheet 1 of 3, 70506/D03, REVISION B, dated 10th February 2010
3. Gilbert Ash AS BUILT DRAWING, RE: DRAINAGE DETAILS sheet 2 of 3, 70506/D04, REVISION B, dated 10th February 2010
4. Gilbert Ash AS BUILT DRAWING, RE: PROPOSED DRAINAGE LAYOUT sheet 2 of 2, 70506-D02, REVISION D, dated 25th February 2010
5. Gilbert Ash AS BUILT DRAWING, RE: PROPOSED DRAINAGE LAYOUT sheet 1 of 2, 70506-D01, REVISION E, date 11th January 2010
6. Gilbert Ash AS BUILT DRAWING, RE: DRAINAGE DETAILS sheet 3 of 3, 70506/D05, dated 13th September 2010

Validation Statement

The assessor site inspection was carried out at Practical completion so the Petrol interceptor was buried in its underground location. Item 2 – 6 are the “as built” drainage plans, item 6, shows the bypass separator that has been installed. Item 4 shows the location of the interceptor on site. This complies with the first and second compliance requirements.

Item 1 is a letter from the design team which confirms that the drainage system has been installed as per the design drawings and there have been no alterations. The assessor site inspection was carried out at Practical completion so the Petrol interceptor was buried in its underground location. This complies with the third and fourth compliance requirements.

One credit awarded.

Pollution
Pol 7 – Reduction of night time light pollution

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**1**

Aim

To ensure that external lighting is concentrated in the appropriate areas and that upward lighting is minimised, reducing unnecessary light pollution, energy consumption and nuisance to neighbouring properties.

Criteria

Credits	
1	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.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. Letter from T. Caulfield of JBE Building Service Limited, RE: POL7 REDUCTION OF NIGHT TIME LIGHT POLLUTION, dated 25th November 2011
2. Design drawing, RE:GENERAL & EMERGENCY LIGHTING INSTALLATION, C1197/E01, dated October 2011
3. Manufacturers Technical data sheet 'ARICA', not dated
4. Manufacturers Technical data sheet 'ROBUS' not dated
5. Manufacturers Technical data sheer 'PIAZZA II' not dated
6. Manufacturers Technical data sheer 'ANSELL' not dated
7. Manufacturers Technical data sheet 'RAYLUX 100 FUSION' not dated
8. Manufacturers Technical data sheet 'RAYLUX 200' not dated
9. Site photograph of building at night, not dated
10. Site photograph of building at dusk, not dated
11. Site photograph of lights mounted on post, not dated.

Validation Statement

Item 2 demonstrates the as built lighting locations, controls and the fittings specified. Items 9 -11 show various photographs of the site at night, dusk and of the adjustable angular fittings.

Items 3 to 8 show the various lighting fittings installed. Items 3 & 5 are fixed in a down ward position however the other fittings can be adjusted. Items 9 -11 show various photographs of the site at night, dusk and of the adjustable angular fittings.

Item 2 shows the photocell controllers mounted on the roof plant area at both ends of the building. Item 1 states that lighting can be time controlled to be off between the hours of 23.00 and 07.00.

Item 4 all states that the external lighting installation is in compliance with the guidance in the Institution of Lighting Engineers (ILE) Guidance notes for the reduction of obtrusive light, 2005.

One credit awarded.

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Pollution
Pol 8 – Noise attenuation

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	**1**

Aim

To reduce the likelihood of noise from the new development affecting nearby noise-sensitive buildings.

Criteria

Credits	
1	Where evidence provided demonstrates that new 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.

Schedule of Evidence

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. AIRO Report Number: DLW/6467/A, ENVIRONMENTAL NOISE ASSESSMENT,BFI ARCHIVE SITE, KINETON, WARWICKSHIRE, dated 20th September 2011
2. Google Maps, Street view, dated 16/12/11
3. SDS Site report for BFI, dated 05th September 2011

Validation Statement

Item 2 is a photograph of the residential dwelling that is approximately 400m from the new BFI building. Item 3 shows photographs of the rooftop plant Air Handling Units and Chillers, which are the main source of noise. This meets with the first credit requirement.

Item 1 is the Acoustic consultant report noise assessment in compliance with BS 4142:1997. The report states that sound measurements will be taken in two positions, one near to the dwelling and one just inside the North Boundary of the BFI site boundary. Item 1 concludes that the maximum plant sound at the dwelling is 16 dB, with the lowest hourly background noise level to be 26 dB, $L_{A90,}$ therefore

complaints are unlikely. Item 1 does not mention any need for attenuation measures in order to control this source of noise. This meets with the second, third and fourth credit requirements.

One credit awarded.

Innovation

Innovation

Minimum BREEAM Standards					
Rating Level	**P**	**G**	**VG**	**E**	**O**
Min. credits to achieve rating	**-**	**-**	**-**	**-**	**-**

Number of credits achieved:	0

Aim

To provide additional recognition for a procurement strategy, design feature, management process or technological development that innovates in the field of sustainability, above and beyond the level that is currently recognised and rewarded within standard BREEAM issues.

Criteria

A maximum of 10 credits are available in aggregate from any combination of the following:

Credits	
10	Up to ten credits (dependent on building type) are available where evidence provided demonstrates compliance with the Exemplary Performance levels for specific BREEAM issues.
2	Two credits are available where evidence provided demonstrates the use of a *BREEAM Accredited Professional* or *Suitably Qualified BREEAM Assessor* as an integral part of the design team.
10	Up to ten credits are available where evidence provided demonstrates the development and application of *Approved Innovations*.

Schedule of Evidence - Exemplary Performance Levels

BREEAM Issue for which there are exemplary performance levels	Credits Achieved
Man 2 - Considerate Constructors	0
Hea 1 - Daylighting	0
Hea 14 - Office Space (BREEAM Retail & Industrial Schemes only)	0
Ene 1 - Reduction of CO_2 emissions	0
Ene 5 - Low or Zero Carbon Technologies	1
Wat 2 - Water Meter	0
Mat 1 - Materials Specification	0

Mat 5 - Responsible Sourcing of Materials	0
Wst 1 - Construction Site Waste Management	0

For assessment reporting (evidence and validation) of the above BREEAM Issues, refer to each individual assessment of that issue within the relevant Building Performance section of this report.

Schedule of Evidence – *BREEAM Accredited Professional/Suitably Qualified BREEAM Assessor*

First Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**
Second Credit achieved? *(For full explanation, please refer to Validation Statement)*	**Yes**

1. Green Book Live, registered Accredited Professional – Stephen Dunn SDS, Certificate No. BREEAMAP0111, dated 18/03/11
2. BFI National Archive, Stage 4.1 Report, by ECA, dated June 2011
3. Monthly Progress report for BFI by SDS, dated 08/11/09
4. Monthly Progress report for BFI by SDS, dated 23/02/11
5. Letter from M Nutt of GA to assessor, dated 16/10/09
6. Project programme, not dated
7. Master Film Store, Meeting Minutes, Design Development, dated 17/11/09
8. Master Film Store, Meeting Minutes, Design Development, dated 01/09/10
9. Master Film Store, Meeting Minutes, Site meeting, dated 05/01/11
10. BREEAM interim report for British Film Institute - National Archive Master, Film Store, by SDS Energy for GA, dated 25/05/11

Validation Statement– *BREEAM Accredited Professional/Suitably Qualified BREEAM Assessor*

The criteria has been pasted in italic text.

1. BREEAM performance objectives are agreed, no later than the end of the design brief stage (e.g. RIBA Stage B or equivalent procurement stage).

Item 5 demonstrates that SDS were appointed by GA to act as BREEAM assessors and Stephen Dunn as accredited professional. Item 1 demonstrates Stephen Dunn's AP qualification.

Item 3 demonstrates that a pre-estimate was carried out by the BREEAM AP and a target of an Excellent rating was agreed. This report is dated the 8th September 2009, which was stage B of the project. This report was circulated to all members of the design team.

A copy of the project programme.
Item 6 is a copy of the project programme which lists the key dates and RIBA stages.

Documentary evidence in the form of meeting minutes or notes that demonstrate that the BREEAM issues are a regular agenda item.

Item 7 is meeting minutes from stage B in the project where Stephen Dunn has been involved in the process of the BREEAM issues. Item 8 is a copy of the meeting minutes from a design development meeting in the project where Stephen Dunn assisted the design team with the design.

2. The appointed BREEAM Accredited Professional is given the opportunity to attend key design team

meetings held from the start of RIBA Stage B (Design Brief) up to and including Stage E (Technical Design) or equivalent, and is to be included on the circulation list for minutes from all meetings.

Item 2 shows that the Design team were informed of the BREEAM target of Excellent by producing a BREEAM tracker as part of the design summary report at Stage E.

Item 8 is a copy of the meeting minutes from a design development meeting in the project where Stephen Dunn assisted the design team with the design.

Item 10 demonstrates that a Design stage assessment report is to be submitted to BRE Global for interim certification.

One credit awarded.

Second credit

The first credit is achieved.

The project is reviewed against BREEAM performance objectives by the appointed BREEAM Accredited Professional no later than the end of the Pre-Construction stage (e.g. RIBA Stage H (Tender Action) or equivalent procurement stage).

Items 1 & 4 demonstrate that regular reviews and update were carried out by the BREEAM Accredited professional these were issued to the team on a regular basis.

The appointed BREEAM Accredited Professional is given the opportunity to attend key design team meetings held from the start of RIBA Stage F (Production Information) up to and including Stage K (Construction to Practical Completion) or equivalent, and is to be included on the circulation list for minutes from all meetings.
Item 9 is a copy of the most up to date meeting minutes with BREEAM issues still on the agenda and Stephen Dunn still on the circulation list.

*A Post Construction stage assessment report is submitted to BRE Global for final certification***.**

A final Post Construction report will be complied once the building has been completed and the Post construction evidence has been gathered and reviewed.

A further credit awarded.

Schedule of Evidence – Approved Innovations

No approved innovations have been targeted,

Innovation Credit achieved? *(For full explanation, please refer to Validation Statement)*	**No**
No evidence provided.	

Validation Statement – Approved Innovations

No approved innovations have been targeted,

Appendices

BREEAM Assessment Tool and Calculator Print-Outs

Ene 1 – Energy Consumption

Wat 1 – Water Consumption

Mat 1 – Materials Specification

Mat 5 - Responsible Sourcing of Materials

Mat 6 – Insulation

LE 4 & 5 – Mitigating Ecological Impact

Approved Innovation Application Forms

No approved innovations have been presented for assessment.