

Interim Certificate – Design Stage

This is to certify that:

**Bloomberg,
3 Queen Victoria Street,
London,
EC4**

has been assessed to:

BREEAM New Construction 2011: Offices (Fully Fitted)

by a licensed assessor for:

Bloomberg LP

and has achieved a score of **92.1%**

Outstanding



Certificate Number: **BREEAM-0051-9256**

Issue: **01**

08 July 2014

Date of Issue

Signed on behalf of BRE Global Ltd.

Gavin Dunn

Director, BREEAM

Bloomberg LP

Developer

Foster + Partners

Architect

Grontmij UK

Building Services

AKT II

Structural Engineers

ARUP

Façade Engineers

Grontmij Limited

Assessor Company

Kartik Amrania

Licensed Assessor

KA36

Assessor number

Sir Robert McAlpine

Principal Contractor

Stanhope Plc

Development Managers

Mohanad Alnaimy, Grontmij UK

BREEAM Accredited Professional

AECOM

Cost Consultants

Sandy Brown Associates

Acoustic Consultants



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bre

Interim Certificate Number: BREEAM-0051-9256

Issue: 01

**Bloomberg,
3 Queen Victoria Street,
London,
EC4**

Assessed for: Bloomberg LP

by: Grontmij Limited

Assessor Company

Kartik Amrania

Licensed Assessor

KA36

Assessor Number

**BREEAM New Construction 2011: Offices
(Fully Fitted)**

Overall Score: 92.1%

Rating: Outstanding



Category Scores	0	10	20	30	40	50	60	70	80	90	100	
Management	100											
Health and Wellbeing	71											
Energy	89											
Transport	100											
Water	100											
Materials	92											
Waste	71											
Land Use and Ecology	80											
Pollution	77											
Innovation	60											

Gavin Dunn, Director, BREEAM, BRE Global Ltd.

08 July 2014

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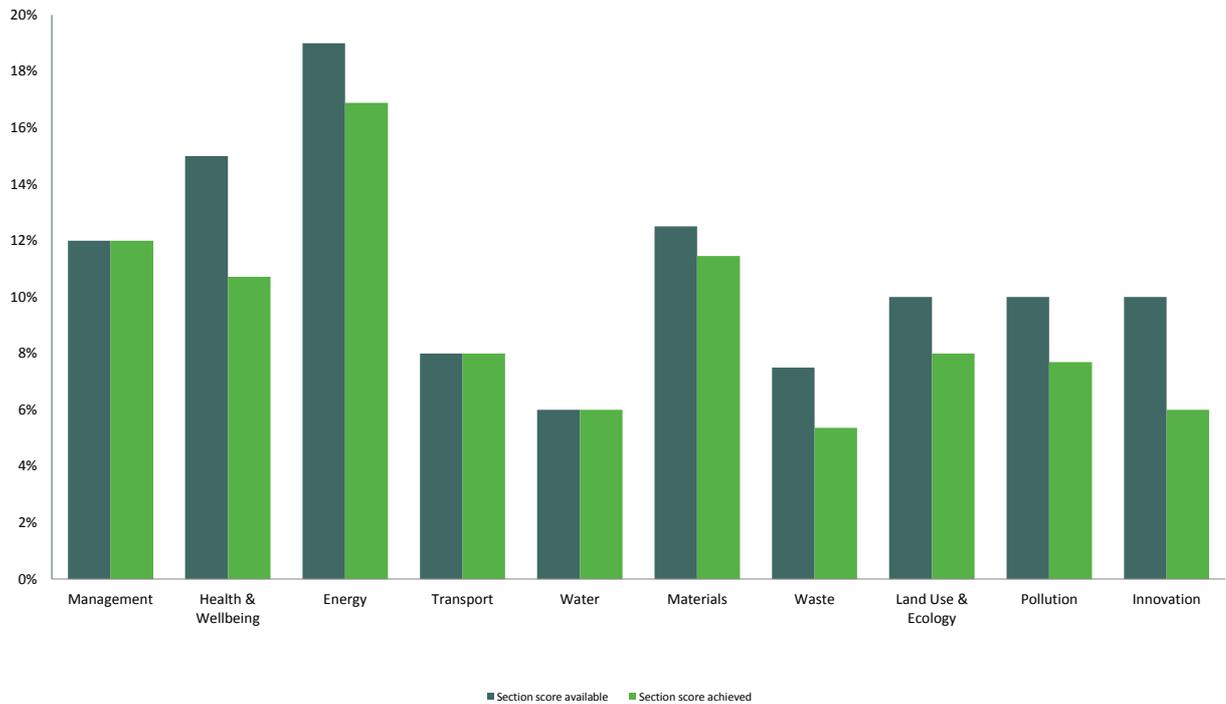


BREEM 2011 New Construction Assessment Report: Rating & Key Performance Indicators

Overall Building Performance

Building name	Bloomberg North
BREEM rating	Outstanding
Total Score	92.11%
Min. standards level achieved	Outstanding level

Building Performance by Environment Section



Environmental Section	No. credits available	No. credits Achieved	% credits achieved	Section Weighting	Section Score
Management	22	22	100.00%	12.0%	12.00%
Health & Wellbeing	14	10	71.43%	15.0%	10.71%
Energy	27	24	88.89%	19.0%	16.89%
Transport	9	9	100.00%	8.0%	8.00%
Water	9	9	100.00%	6.0%	6.00%
Materials	12	11	91.67%	12.5%	11.46%
Waste	7	5	71.43%	7.5%	5.36%
Land Use & Ecology	10	8	80.00%	10.0%	8.00%
Pollution	13	10	76.92%	10.0%	7.69%
Innovation	10	6	60.00%	10.0%	6.00%

Building Performance by Key Environmental Performance Indicator

Energy (consumption/production)	Life cycle stage	Measurement	Intensity	Units	Total	Units
Building operation ^[1]	Use	Modelled	89.89	kWh/m ² /yr	5611293	kWh/yr
Energy production ^[2]	Use	Modelled	65.54	kWh/m ² /yr	4091268	kWh/yr
Construction process ^[3]	INA	INA	INA	INA	INA	INA
Transport ^[4]	INA	INA	INA	INA	INA	INA

Greenhouse Gas Emissions

Building operation ^[1]	Use	Modelled	11.80	kgCO ₂ eq/m ² /yr	736,603	kgCO ₂ eq/yr
Embodied ^[5]	Cradle-to-grave	Measured	INA	kgCO ₂ eq/m ²	INA	kgCO ₂ eq
Proportion of applicable main building elements that data reported covers						INA
Construction process ^[3]	INA	INA	INA	INA	INA	INA
Transport ^[4]	INA	INA	INA	INA	INA	INA
Direct GHG emissions - Refrigerants ^[6]	Use	Modelled	467.43	KgCO ₂ eq/kW _{coolth}	4,922,412	KgCO ₂ eq

Emissions to outdoor air, soil and water

Nitrogen Oxides (NO _x) ^[7]	Use	Measured	300.32	mg/kWh	1,435.62	kg/yr
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Use of freshwater resource

Building operation ^[8]	Use	Modelled	9.01	m ³ /person/yr	57,934	m ³ /yr
Construction process ^[9]	INA	INA	INA	INA	INA	INA

Construction waste and recovery

Construction waste ^[10]	Construction	Target	7.50	tonnes/100m ²	4,682	tonnes
Construction waste diverted from landfill ^[10]	Construction	Target	80.00%	%	3,745	tonnes
Demolition waste diverted from landfill ^[11]	Construction	Target	90.00%	%	INA	INA
Demolition waste to disposal ^[11]	Construction	Target	INA	%	INA	INA
Material for re-use ^[12]	Construction	Target	INA	tonnes/100m ²	INA	tonnes
Material for recycling ^[12]	Construction	Target	INA	tonnes/100m ²	INA	tonnes
Material for energy recovery ^[12]	Construction	Target	INA	tonnes/100m ²	INA	tonnes
Hazardous waste to disposal ^[12]	Construction	Target	INA	tonnes/100m ²	INA	tonnes

Sourcing of materials

Materials responsibly sourced ^[13]	Construction	Measured	62.15%	%	-	-
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Thermal comfort

Time out of range of reference temperature ^[14]	Use	Modelled	2.00%	%	INA	INA
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Indoor Air Quality

Formaldehyde concentration level ^[15]	INA	INA	-	INA	INA	INA
Total volatile organic compound concentration ^[15]	INA	INA	INA	INA	INA	INA

Notes

- 1 Modelled using approved software compliant with the UK's National Calculation Method which in turn is compliant with Article 3 of The Energy Performance of Buildings Directive (EPBD) 2002/91/EC. Modelling includes building energy consumption resulting from the specification of a 'controlled', 'fixed building service' (as defined in Approved Document L2A, 2010).
- 2 The reported impact includes technologies that produce energy (on-site and/or near-site) as defined by Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.
- 3 The reported impact includes energy consumption from construction plant, equipment and site accommodation. This KPI is not assessed/reported at the design stage of assessment/certification.
- 4 The reported impact covers transport of the construction materials that make-up the main building elements and ground works and landscaping materials (from the factory gate to the site) and construction waste (from the construction gate to waste disposal processing / recovery centre gate). Main building elements are defined in the BREEAM 2011 New Construction Technical Guide (SD5073). This KPI is not assessed/reported at the design stage of assessment/certification.
- 5 The reported impact covers the construction materials that make-up the main building elements (over a 60 year study period). Main building elements are defined in the BREEAM 2011 New Construction Technical Guide (SD5073). The data is quantified using BRE's Environmental Profiles Methodology. The Environmental Profiles Methodology has been peer reviewed to comply with BS ISO 14040 and represents the Product Category Rules for BRE Global's environmental labelling scheme (EPD - ISO 14025, Type III) for construction products and elements.
- 6 The reported impact is for a 10 year study period. The calculation of the Direct Effect Life Cycle CO₂eq emissions used by BREEAM is based on the Total Equivalent Warming Impact (TEWI) calculation method for new stationary refrigeration and air conditioning systems, as described in Annex B of BS EN 378-1:2008.
- 7 The reported impact covers emissions from either one or a combination of space heating, cooling and hot water heating (refer to Pol02 Assessment Issue for scope of emissions)
- 8 The reported impact includes net water consumption from the micro-components utilised by building occupants for sanitary purposes. The impact accounts for water recycling/rainwater collection, where used for permissible non-potable water demands (For further detail refer to BREEAM 2011 New Construction Technical Guide (SD5073)).
- 9 The reported impact is net water consumption i.e. accounts for any water recycling/rainwater collection used to off-set a potable site demand. This KPI is not assessed/reported at the design stage of assessment/certification.
- 10 The reported impact covers non-hazardous waste from new construction materials, it therefore excludes hazardous and demolition and excavation waste. Where assessed and reported at the design stage of assessment this KPI is based on a target as reported in a compliant Site Waste Management Plan.
- 11 The reported impact covers non-hazardous waste from site demolition. Where assessed and reported at the design stage at the design stage of assessment this KPI is based on the target demolition waste diverted from landfill, as reported in a compliant Site Waste Management Plan. If no demolition taking place on site this KPI is not applicable.
- 12 Where assessed and reported at the design stage of assessment this KPI is based on a target as reported in a compliant Site Waste Management Plan.
- 13 The reported impact covers the proportion of the key building elements present and assessed by BREEAM that are responsibly sourced, where responsibly sourced is defined as follows; where at least 80% of the materials that make-up an element achieve certification in accordance with one of the responsible sourcing schemes defined in table 10-2 of the BREEAM 2011 New Construction Technical Guide (SD5073).
- 14 The reported impact covers the percentage "time out of range" of the minimum and maximum temperatures for summer and winter settings, whereby winter and summer settings are defined in accordance with the appropriate industry standard (refer to the BREEAM 2011 New Construction Technical Guide (SD5073) for further detail).
- 15 The total volatile organic compound (TVOC) concentration is measured post construction (but pre-occupancy) over 8 hours. Formaldehyde concentration level is measured post construction (but pre-occupancy) averaged over 30 minutes. Both KPI's are measured in accordance with European and/or ISO standards (refer to the BREEAM New Construction Technical Manual for relevant standard numbers. At the design stage of assessment no data is available for this KPI as they are both measured once the building has been constructed (but pre-occupancy) for the purpose of post construction assessment.

"INA" = Indicator Not Assessed. This will be the case where either the data required for the KPI is not gathered/measured by the building's project team or not assessed/quantified in BREEAM for a particular building type or assessment stage e.g. energy consumption for construction process at the design stage of assessment.

"-" = KPI not applicable to building being assessed.

WATER

Wat01 Water Consumption

No. of BREEAM credits available	5	Available contribution to overall score	3.33%
No. of BREEAM innovation credits available	1	Minimum standards applicable	Yes

Please select the calculation procedure used

Standard approach data

Water Consumption from building micro-components	15.53	L/person/day
Water demand met via greywater/rainwater sources	4.10	L/person/day
Total net water consumption	35.60	L/person/day
Improvement on baseline performance	67.89%	%

Key Performance Indicator - use of freshwater resource

Total net Water Consumption	9.01	m3/person/yr
Default building occupancy	6430.00	

Alternative approach data

Overall microcomponent performance level achieved	

Total BREEAM credits achieved	5
Total contribution to overall building score	3.33%
Total BREEAM innovation credits achieved	1
Minimum standard(s) level	Outstanding level

Assessor comments/notes:

Wat02 Water Monitoring

No. of BREEAM credits available	1	Available contribution to overall score	0.67%
No. of BREEAM innovation credits available	0	Minimum standards applicable	Yes

Assessment Criteria	Compliant?	Credits available	Credits achieved
Water meter on the mains water supply to the building(s)	Yes	1	1
Metering/monitoring equipment on supply to plant/building areas	Yes		
Pulsed output on all relevant water meters	Yes		
Existing BMS connection	Yes		
Total BREEAM credits achieved		1	
Total contribution to overall building score		0.67%	
Total BREEAM innovation credits achieved		N/A	
Minimum standard(s) level	Outstanding level		

Assessor comments/notes:

Wat03 Water Leak Detection and Prevention

No. of BREEAM credits available	2	Available contribution to overall score	1.33%
No. of BREEAM innovation credits available	0	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Leak detection on building's mains water supply	Yes	1	1
Flow control device to each sanitary area/facility	Yes	1	1
Total BREEAM credits achieved		2	
Total contribution to overall building score		1.33%	
Total BREEAM innovation credits achieved		N/A	
Minimum standard(s) level	N/A		

Assessor comments/notes:

Wat04 Water Efficient Equipment

No. of BREEAM credits available	1	Available contribution to overall score	0.67%
No. of BREEAM innovation credits available	No	Minimum standards applicable	No

Assessment Criteria	Compliant?	Credits available	Credits achieved
Specification/installation of water efficient equipment	Yes	1	1
Total BREEAM credits achieved		1	
Total contribution to overall building score		0.67%	
Total BREEAM innovation credits achieved		N/A	
Minimum standard(s) level		N/A	

Assessor comments/notes:

INNOVATION

Inn01 Innovation

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

Assessment Criteria	Compliant?	Credits available	Credits achieved
Man01 Sustainable Procurement	Yes	1	1
Man02 Responsible Construction Practices	Yes	1	1
Hea01 Visual Comfort	No	1	0
Ene01 Reduction of CO2 Emissions	No	5	0
Ene04 Low and Zero Carbon Technology	No	1	0
Ene05 Energy Efficient Cold Storage	N/A	N/A	N/A
Wat01 Water Consumption	Yes	1	1
Mat01 Life Cycle Impacts	No	3	0
Mat03 Responsible Sourcing of Materials	No	1	0
Wst01 Construction Waste Management	No	1	0
Wst02 Recycled Aggregates	Yes	1	1

Number of 'approved' innovation credits achieved?	2
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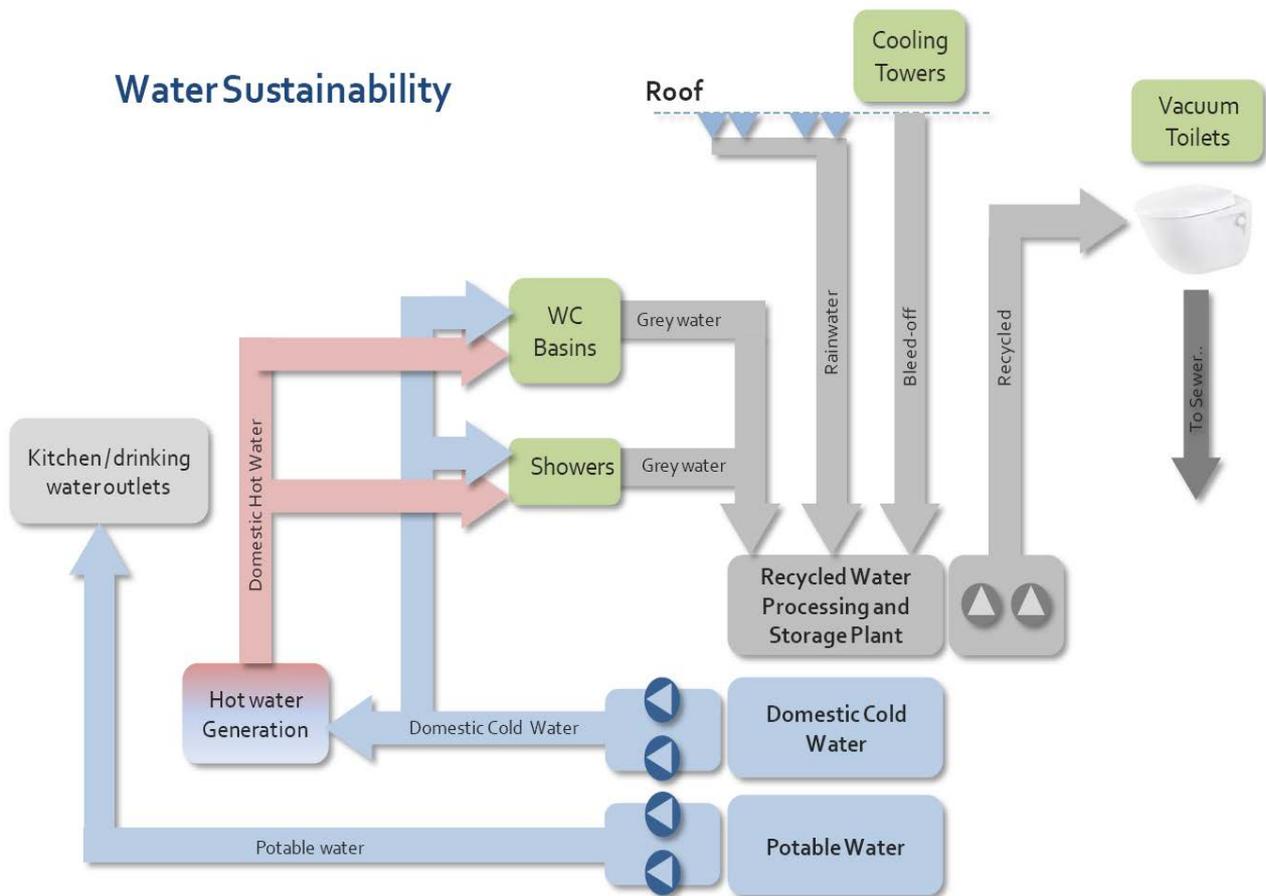
Total BREEAM innovation credits achieved	6
Total contribution to overall building score	6.00%
Minimum standard(s) level	N/A

Assessor comments/notes:

1. Approved Innovation Number "INN11-0083" = Recycled water in cooling tower
 2. Approved Innovation Number "INN11-0081" = Vacuum Drainage

Bloomberg

The schematic below represents the various flow paths of domestic, potable, and wastewater flows in the Bloomberg building. As shown, sufficient rooftop rainwater, cooling tower, and grey water waste streams are captured and treated and used as flushing water in the toilets. When coupled with the extremely low water utilization rates of the vacuum flush system, the net overall discharge reduction for the toilets alone is over 80% as compared to a typical office building. As toilets represent the majority of water demand of an office building, the vacuum flush system reduces our overall wastewater flow by 70% as compared to a typical office building (as measured by BREEAM).



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