

Project name

Office

As designed

Date: Wed Mar 31 18:11:33 2010

Administrative information

Building Details

Address:

Certification tool

Calculation engine: SBEM

Calculation engine version: v3.5.a.0

Interface to calculation engine: Lifespan SBEM

Interface to calculation engine version: v3.5.a

BRUKL compliance check version: v3.5.a.0

Owner Details

Name:

Telephone number:

Address:

Certifier details

Name: Mark Simons

Telephone number: 020 8930 5668

Address: 17 Dobree Avenue, London, NW10 2AD

Criterion 1: Predicted CO2 emission from proposed building does not exceed the target

1.1	Calculated CO2 emission rate from notional building	44.3 KgCO2/m2.annum
1.2	Improvement factor	0.15
1.3	LZC benchmark	0.1
1.4	Target CO2 Emission Rate (TER)	33.9 KgCO2/m2.annum
1.5	Building CO2 Emission Rate (BER)	32.2 KgCO2/m2.annum
1.6	Are emissions from building less than or equal to the target?	BER =< TER
1.7	Are as built details the same as used in BER calculations?	Separate submission

Criterion 2: The performance of the building fabric and the building services systems should be no worse than the design limits

2.1 Are the U-values better than the design limits? **Better than design limits**

Element	U _a -Limit	U _a -Calc	U _i -Limit	U _i -Calc	Surface where this maximum value occurs*
Wall**	0.35	0.27	0.7	0.27	Z 01 Office/South-West/Wall-External
Floor	0.25	0.17	0.7	0.18	Z 02 toilet/Floor-External
Roof	0.25	0	0.35	0	"No heat loss roofs"
Windows***, roof windows, and rooflights	2.2	2.2	3.3	2.2	Z 01 Office/South-West/Wall-External/Glazing
Personnel doors	2.2	1.61	3	1.61	Hallway/Stairs/South-East/Wall-External/Doors
Vehicle access & similar large doors	1.5	0	4	0	"No heat loss vehicle access doors"
High usage entrance doors	6	0	6	0	"No heat loss high usage entrance doors"
U _a -Limit = Limiting area-weighted average U-values [W/(m2K)] U _a -Calc = Calculated area-weighted average U-values [W/(m2K)]			U _i -Limit = Limiting individual element U-values [W/(m2K)] U _i -Calc = Calculated individual element U-values [W/(m2K)]		
* There might be more than one surface exceeding the limiting standards.					
** Automatic U-value check by the tool does not apply to curtain walls whose limiting standards are similar to those for windows.					
*** Display windows and similar glazing are not required to meet the standard given in this table.					

2.2 Is air permeability no greater than the worst acceptable standard? **No greater than worst acceptable standard**

Air Permeability	Worst acceptable standard	This building (Design value)
m ³ /(h.m ²) at 50 Pa	10	10

2.3 Are all building services standards acceptable?

2.3a-1 Heating System

HVAC system standard is acceptable

Efficiency check	Limiting heat source seasonal efficiency	This building
Heat source efficiency	0.84	0.9
0.84 is the overall limiting efficiency for a single or a multiple boiler system. For a multiple boiler system the limiting efficiency for any individual boiler is 0.80.		

2.3b-1 Dedicated hot water boiler

HWS standard is acceptable

Efficiency check	Limiting HWS heat source seasonal efficiency	This building
HWS heat source efficiency	0.8	0.9

2.4	Does fixed internal lighting comply with England and Wales Building Regulations Part L paragraphs 49 to 61?	Separate submission
2.5	Are energy meters installed in accordance with GIL65?	Separate submission

Criterion 3: The spaces in the building without air-conditioning have appropriate passive control measures to limit the effects of solar gains

3.1	Method of showing compliance with England and Wales Building Regulations Part L in paragraph 64?	Separate submission
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Criterion 4: The performance of the building, as built, is consistent with the BER

4.1	Have the key features of the design been included (or bettered) in practice?	Separate submission
4.2	Is the level of thermal bridging acceptable?	Separate submission
4.3	Has satisfactory documentary evidence of site inspection checks been produced?	Separate submission

4.4 Design air permeability

Air Permeability	Worst acceptable standard	This building (Design value)
m ³ /(h.m ²) at 50 Pa	10	10

4.5	Has evidence been provided that demonstrates that the design air permeability has been achieved satisfactorily?	Separate submission
4.6	Has commissioning been completed satisfactorily?	Separate submission
4.7	Has evidence been provided that demonstrates that the ductwork is sufficiently airtight?	Separate submission

Criterion 5: Providing information

5.1	Has a suitable building log-book been prepared?	Separate submission
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Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Area (m2)	43	43
External area (m2)	162	162
Weather	LON	LON
Infiltration (m3/hm2 @ 50Pa)	10	10
Average conductance (W/K)	46.84	111.16
Average U-value (W/m2K)	0.29	0.69
Alpha value (%)	29.77	10

Building Use

% area	Building Type
100	Office
	Primary school
	Secondary school
	Further education universities
	Primary health care buildings
	Nursing residential homes and hostels
	Hospital
	Hotel
	Restaurant/public house
	Sports centre/leisure centre
	Sports ground arena
	Retail
	Warehouse and storage
	Theatres/cinemas/music halls and auditoria
	Social clubs
	Community/day centre
	Libraries/museums/galleries
	Prisons
	Emergency services
	Crown and county courts
	Airport terminals
	Bus station/train station/seaport terminal
	Workshops/maintenance depot
	Telephone exchanges
	Industrial process building
	Launderette
	Dwelling
	Retail warehouses
	Miscellaneous 24hr activities

HVAC Systems Performance

System Type	Heat dem MJ/m2	Cool dem MJ/m2	Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEFF	Cool SSEER	Heat gen SEFF	Cool gen SEER	
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Grid Supplied Electricity										
	Actual	323.9	101	112	0	3.3	0.8	0	0.9	0
	Notional	352.6	551.8	134.2	0	2	0.73	0	----	----

Key to terms

Alpha value (%)	= percentage of the building's average heat transfer coefficient which is due to thermal bridging
Heat dem (MJ/m2)	= Heating energy demand
Cool dem (MJ/m2)	= Cooling energy demand
Heat con (kWh/m2)	= Heating energy consumption
Cool con (kWh/m2)	= Cooling energy consumption
Aux con (kWh/m2)	= Auxiliary energy consumption
Heat SSEFF	= Heating system seasonal efficiency
Cool SSEER	= Cooling system seasonal energy efficiency ratio
Heat gen SSEFF	= Heating generator seasonal efficiency
Cool gen SSEER	= Cooling generator seasonal energy efficiency ratio
ST	= System type
HS	= Heat source
HFT	= Heating fuel type
CFT	= Cooling fuel type