

Project name

Regent High School BRUKL2010 LCc

As built

Date: Fri Sep 08 16:15:36 2017

Administrative information

Building Details

Address: LONDON, NW1 1RX

Owner Details

Name: Regent High School

Telephone number: 020 7387 0126

Address: Charlton Street, London, NW1 1RX

Certification tool

Calculation engine: Apache

Calculation engine version: 6.4.0.15

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 6.4.0.15

BRUKL compliance check version: v4.1.e.5

Certifier details

Name: David Richard Kingstone

Telephone number: Phone

Address: Street Address, City, Postcode

Criterion 1: The calculated CO₂ emission rate for the building should not exceed the target

1.1	CO ₂ emission rate from the notional building, kgCO ₂ /m ² .annum	19.3
1.2	Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	19.3
1.3	Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	16.2
1.4	Are emissions from the building less than or equal to the target?	BER =< TER
1.5	Are as built details the same as used in the BER calculations?	Separate submission

Criterion 2: The performance of the building fabric and the building services should achieve reasonable overall standards of energy efficiency

The building does not follow guidance in England and Wales Building Regulations Part L 2010

2.a Building fabric

Element	U _a -Limit	U _a -Calc	U _i -Calc	Surface where the maximum value occurs*
Wall**	0.35	0.39	0.86	DG000000:Surf[3]
Floor	0.25	0.22	1.38	DGF10001:Surf[0]
Roof	0.25	0.15	0.16	HF000005:Surf[10]
Windows***, roof windows, and rooflights	2.2	1.77	2.21	FCRC0007:Surf[1]
Personnel doors	2.2	0.61	0.61	GBNS0000:Surf[4]
Vehicle access & similar large doors	1.5	-	-	No Vehicle access doors in building
High usage entrance doors	3.5	-	-	No High usage entrance doors in building
U _a -Limit = Limiting area-weighted average U-values [W/(m ² K)] U _a -Calc = Calculated area-weighted average U-values [W/(m ² K)] U _i -Calc = Calculated maximum individual element U-values [W/(m ² K)]				
* There might be more than one surface where the maximum U-value occurs.				
** Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.				
*** Display windows and similar glazing are excluded from the U-value check.				
N.B.: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.				

Air Permeability	Worst acceptable standard	This building
m ³ /(h.m ²) at 50 Pa	10	5

2.b Building services

The building services parameters listed below are expected to be checked by the BCO against guidance. No automatic checking is performed by the tool.

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	YES
Whole building electric power factor achieved by power factor correction	0.9 to 0.95

1- 03 NV UFH and C

Heating seasonal efficiency	Cooling nominal efficiency	SFP [W/(l/s)]	HR seasonal efficiency
5.24	7.91	0	-
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system			YES

2- 07 AHU302 UFH and C

Heating seasonal efficiency	Cooling nominal efficiency	SFP [W/(l/s)]	HR seasonal efficiency
5.24	7.91	0.6	0.77
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system			YES

3- 02 AHU304 RAD

Heating seasonal efficiency	Cooling nominal efficiency	SFP [W/(l/s)]	HR seasonal efficiency
0.97	-	0	0.5
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system			YES

4- 08 AHU303 UFH and C

Heating seasonal efficiency	Cooling nominal efficiency	SFP [W/(l/s)]	HR seasonal efficiency
5.24	7.91	0.85	0.75
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system			YES

5- 06 AHU301 CV

Heating seasonal efficiency	Cooling nominal efficiency	SFP [W/(l/s)]	HR seasonal efficiency
5.24	7.91	1.96	0.76
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system			YES

6- 01 NVRAD

Heating seasonal efficiency	Cooling nominal efficiency	SFP [W/(l/s)]	HR seasonal efficiency
0.97	-	0	-
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system			YES

7- 10 AHU202 Rad

Heating seasonal efficiency	Cooling nominal efficiency	SFP [W/(l/s)]	HR seasonal efficiency
0.97	-	0	0.5
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system			YES

8- 05 AHU203 Rad

Heating seasonal efficiency	Cooling nominal efficiency	SFP [W/(l/s)]	HR seasonal efficiency
0.97	-	0	-
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system			YES

9- 04 AHU304 UFH and C

Heating seasonal efficiency	Cooling nominal efficiency	SFP [W/(l/s)]	HR seasonal efficiency
5.24	7.91	3	0.5
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system			YES

10- 09 AHU201 UFH and C

Heating seasonal efficiency	Cooling nominal efficiency	SFP [W/(l/s)]	HR seasonal efficiency
5.24	7.91	1.38	0.77
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system			YES

1- Medburn Solar DHW

Heating seasonal efficiency	Hot water storage loss factor [kWh/litre per day]
0.9	0.037

2- Salsbury electric WH

Heating seasonal efficiency	Hot water storage loss factor [kWh/litre per day]
1	0.05

3- Science Block electric WH

Heating seasonal efficiency	Hot water storage loss factor [kWh/litre per day]
1	0.05

Local mechanical ventilation and exhaust

Zone	Supply/extract SFP [W/(l/s)]	HR seasonal efficiency	Exhaust SFP [W/(l/s)]
CAFF02 Arts College Manager MVRAD	0.95	-	-
CAFF03 Pastoral Leader MVRAD	0.95	-	-
CAGF 01 theatre Dis Change	-	-	1.12
ADGF02 Print room repro MVRAD	0.95	-	-
SDGF13 meeting room NVRAD	0.95	-	-
ADGF12 Info Manager MVRAD	0.95	-	-
ADGF13 Busar Office MVRAD	0.95	-	-
ADGF15 Data Exam Team MVRAD	0.95	-	-
ADGF14 Meeting MVRAD	0.95	-	-
ADGF16 Prem manager MVRAD	0.95	-	-
F MFF05 Hub	2.64	-	-
F cleaners	0.95	-	-
FMGF07 Kitchen MVRAD	1.5	-	1.12
MFF17 store	2.64	-	-
F store	2.64	-	-
F wc MVRAD	-	-	1.5
F wc MVRAD	-	-	1.5
F wc MVRAD	-	-	1.5
F wc	-	-	1.12
F wc	-	-	1.12
F wc MVRAD	-	-	1.5
F wc	-	-	1.35
ADGF05	0.95	-	-
ADGF07	0.95	-	-
FMGF16	1.5	-	-
G WC access	-	-	1.5
G WC F	-	-	1.5
G toilet MVRAD	-	-	1.5
G wc NVUF	-	-	1.35
HFF03 Dining Hub MVRAD	0.95	-	-
HFF03 Dining Hub MVRAD	0.95	-	-

Local mechanical ventilation and exhaust

Zone	Supply/extract SFP [W/(l/s)]	HR seasonal efficiency	Exhaust SFP [W/(l/s)]
HFF08 Pastoral Leader MVRAD	0.95	-	-
MFF09 Security MVRAD	2.64	-	-
ELSF15 Wrk Exo	0.95	-	-
ELSF08 Meeting	0.95	-	-
ELSF15 D of L Past Leader	0.95	-	-
CR125 Pastoral leader MVRAD	2.64	-	-
F SLT office MVRAD	2.64	-	-
F meeting room MVRAD	2.64	-	-
MFF14 ICT Rich Class NVRAD	2.64	-	-
SDGF11 counselling room NVRAD	0.95	-	-
G Meeting	0.95	-	-
S cleaners	0.95	-	-
F Staff prep MVRAD	2.64	-	-
S wc	-	-	1.12
S wc	-	-	1.12
S wc MVRAD	-	-	1.5

General lighting and display lighting

Zone	General lighting [W]	Display lamps efficacy [lm/W]
CFF02 The Arcade Void NVUF	3200	-
CAFF06 Media Studies	700	-
CAFF02 Arts College Manager MVRAD	250	-
CAFF03 Pastoral Leader MVRAD	120	-
CAFF07 Media Studies	670	-
CAFF07 Meeting MVRAD	60	-
CAFF01 Creative Arts Home Base MVRAD	2400	-
CAFF08 Drama Studio 1	720	-
CAFF09 Drama Studio 2	720	-
CAFF10 ICT Rich Room	600	-
CGF12 Theatre Entrance	280	-
CAGF 01 theatre	2550	-
CAGF 01 theatre store	80	-
CAGF 01 theatre green room	340	-
CAGF 01 theatre circulation	290	-
CAGF 01 theatre change	170	-
CAGF 01 theatre store	430	-
CAGF 01 theatre store	110	-
CAGF 01 theatre cleaners	60	-
CAGF 01 theatre circulation	110	-
CAGF 01 theatre store	50	-
CAGF 01 theatre Dis Change	30	-
CAGF 01 theatre change	170	-
CGF12 Theatre Entrance void	330	-
CGF12 Theatre Entrance int	390	-
CGF12 Theatre Entrance void	490	-
CGF02 The Arcade NVUF	2970	-
CASF17 General Art Room 1	630	-

General lighting and display lighting

Zone	General lighting [W]	Display lamps efficacy [lm/W]
CASF16 Large Art Room	630	-
CASF18 General Art Room 2	630	-
CASF09 Prac	60	-
CASF08 Prac	110	-
CASF04 Music Ensemble	110	-
CASF03 Music Recital	1140	-
CASF07 Prac	60	-
CASF06 Prac	60	-
CASF05 Recording	110	-
CASF02 Music Class 2	600	-
CASF01 Music Class 1	600	-
CASF15 General Art Room 3	630	-
CASF11 Prac	60	-
CASF10 Prac	60	-
CASF22 Meeting	110	-
ADGF01 Reception Admin NVRAD	120	-
ADGF17 Conference room NVRAD	230	-
ADGF08 Sfl Office NVRAD	180	-
ADGF02 Print room repro MVRAD	120	-
SDGF13 meeting room NVRAD	60	-
ADGF11 data exams team	180	-
ADGF12 Info Manager MVRAD	60	-
ADGF13 Busar Office MVRAD	60	-
ADGF15 Data Exam Team MVRAD	120	-
ADGF14 Meeting MVRAD	60	-
ADGF16 Prem manager MVRAD	60	-
ADGF18 SLT Safer School NVRAD	110	-
ADGF19 Reception NVUF	170	96
F circulation MVRAD	240	-
F MFF05 Hub	40	-
F store	20	-
F circulation MVRAD	70	-
F circulation MVRAD	50	-
F circulation MVRAD	140	-
F circulation NVRAD	1200	-
F circulation MVRAD	250	-
F circulation MVRAD	30	-
F cleaners	60	-
F hubroom	40	-
F hub MVRAD	170	-
FMGF04 Dining	3700	-
FMGF07 Kitchen MVRAD	3290	-
MFF17 store	110	-
FMGF12 Work Area MVRAD	110	-
F store	30	-
F store	60	-
F escape stair ?	180	-

General lighting and display lighting

Zone	General lighting [W]	Display lamps efficacy [lm/W]
F escape stair ?	120	-
LRFF05 Post 16 NVUF	60	-
F store MVRAD	110	-
F store MVRAD	60	-
F store MVRAD	340	-
F theatre void ???	1940	-
F wc MVRAD	570	-
F wc MVRAD	110	-
F wc MVRAD	510	-
F wc	570	-
F wc	570	-
F wc MVRAD	460	-
F wc	460	-
G bit	110	-
G unheated plant	220	-
G bin store MVRAD	220	-
G circulation	230	-
G circulation	20	-
SDGF10 safer schools officer	120	-
ADGF03	60	-
G circulation	340	-
ADGF04	120	-
ADGF05	180	-
ADGF07	120	-
FMGF16	60	-
G circulation	170	-
G circulation	60	-
G circulation	70	-
G circulation	40	-
G circulation	30	-
G circulation MVRAD	60	-
G circulation	250	-
G store	40	-
G circulation MVRAD	160	-
G Plant room MVRAD	320	-
G WC access	60	-
G WC F	290	-
G circulation	290	-
G circulation	290	-
G LV Switch MVRAD	160	-
G store	170	-
G corridor	50	-
G hub	30	-
G Plant room MVRAD	540	-
G Hub Room	30	-
G unheated entrance	130	-
G CGF6 Room	180	-

General lighting and display lighting

Zone	General lighting [W]	Display lamps efficacy [lm/W]
G escape stair MVRAD	120	-
G circulation NVRAD	60	-
G store	110	-
G toilet MVRAD	290	-
G vent plant room MVRAD	0	-
G wc NVUF	860	-
HFF03 Dining Hub MVRAD	200	-
HFF03 Dining Hub MVRAD	40	-
HFF03 Dining Hub MVRAD	60	-
HFF17 Large Class 5	540	-
HFF14 Large Class 4 NVRAD	370	-
HFF10 Staff Prep Humanities NVUF	370	-
HFF13 Standard Class NVRAD	370	-
HFF05 Large Class 2 NVRAD	350	-
HFF06 Standard Class 3 NVRAD	350	-
HFF09 Seminar Room NVUF	370	-
HFF04 Large Class 1 NVRAD	330	-
HFF08 Pastoral Leader MVRAD	60	-
HFF02 Humanities Homebase	860	-
HFF12 Seminar Room NVRAD	320	-
HFF19 Large Class 5	540	-
HFF18 Standard Class 2	540	-
HFF24 Standard Class 6	540	-
HFF23 Standard Class 5	540	-
HFF22 Standard Class 4	540	-
HFF21 Standard Class 3	540	-
HFF20 Standard Class 2	540	-
LRFF07 6th Study NVRAD	550	-
MFF09 Security MVRAD	50	-
LRFF07 6th Study	300	-
LRFF01 LRC NVUF	1980	-
LRFF04 Office NVUF	110	-
LRFF03 Post NVUF	110	-
LRFF02 Conn Career NVUF	110	-
LRGF02 office	120	-
ELSF13 Large Class NVRAD	550	-
ELSF15 Wrk Exo	60	-
ELSF14 Large Class NVRAD	370	-
ELSF05 Large Class NVRAD	370	-
ELSF12 Standard Class NVRAD	370	-
ELSF06 Standard Class NVRAD	370	-
S corridor	30	-
ELSF04 Large Class NVRAD	490	-
ELSF09 Standard Class NVUF	550	-
ELSF08 Meeting	110	-
ELSF01 English Homebase	860	-
ELSF03 Dining Hub MVRAD	170	-

General lighting and display lighting

Zone	General lighting [W]	Display lamps efficacy [lm/W]
ELSF10 Staff Prep NVUF	180	-
ELSF11 Seminar room NVRAD	370	-
S Store	110	-
ELSF19 Seminar Room Class 2	360	-
ELSF18 Large Class 63	540	-
ELSF17 Standard Class	540	-
ELSF16 Standard Class	360	-
ELSF15 D of L Past Leader	120	-
ELSF23 SLT Admin	180	-
ELSF22 Standard Class	360	-
ELSF21 Standard Class	540	-
ELSF20 Standard Class	540	-
Medburn top	1640	-
CR125 Pastoral leader MVRAD	120	-
MFF13 Group Area MVRAD	990	-
F SLT office MVRAD	60	-
MFF08 Maths ICT Rich Class 2 NVRAD	550	-
MFF07 Maths Standard Class 4 NVRAD	450	-
MFF06 Maths Standard Class 3 NVRAD	450	-
MFF05 Maths Standard Class 2 NVRAD	450	-
MFF04 Maths Standard Class 1 MVRAD	450	-
MFF01 Store	20	-
MFF16 Maths ICT Rich Class 3 NVRAD	490	-
F meeting room MVRAD	60	-
MFF14 ICT Rich Class NVRAD	690	-
MGF04 Maths ICT Rich Class 1 NVRAD	450	-
MGF03 Maths ICT Rich Class 3 NVRAD	450	-
MGF02 Maths Large Class 2 NVRAD	550	-
MGF01 Maths Large Class 1 NVRAD	550	-
Roof	1120	-
G WC medburn	690	-
G archive store	50	-
G circulation MVRAD	50	-
S circulation above arcade MVRAD	170	-
SCGF10 Product Design Room	540	-
SCFF10 Serviced Lab 4	720	-
S circulation above arcade MVRAD	3850	-
SCFF02 Serviced Lab 2	720	-
SCFF04 Multiuse Lab 1	720	-
SCFF06 Prep Instruments	240	-
SCFF07 Paired Multi Use lab 2	720	-
SCFF08 Serviced Lab 3	720	-
SCFF09 Prep Room	300	-
SCFF11 Science Studio 3	540	-
SCFF13 Pastoral Leader Admin	40	-
SCFF03 Prep	120	-
SCFF05 Breakout	230	-

General lighting and display lighting

Zone	General lighting [W]	Display lamps efficacy [lm/W]
SCFF01 Science Studio 4	540	-
SCFF03 Prep	120	-
SCFF14 circulation	10	-
SCFF14 meeting	20	-
SCGF05 Science Studio 2	540	-
SCGF06 Sevice Lab 1	720	-
SCGF07 Science Studio 1	540	-
SCGF08 Prep Room	180	-
SCGF09 Interactive Theatre	720	-
SCGF10 Product Design Room	180	-
SCGF11 Graphics Room 1	540	-
SCGF13 Materials Prep	360	-
SCGF14 Resistant Materials	720	-
SCGF18 Graphics Room 2	480	-
SCGF01 Homebase NVUF	1090	-
SCGF02 Staff Work Prep	360	-
SCGF04 Prep room	120	-
SCGF09 Interactive Theatre void	0	-
SCGF19 Construction Textiles NVRAD	920	-
SCGF20 Food Room MVRAD	620	-
SCGF21 Food Prep Tech MVRAD	230	-
S circulation above arcade MVRAD	90	-
S circulation above arcade MVRAD	110	-
S circulation MVRAD	600	-
S stair	70	-
S circulation MVRAD	880	-
SDGF12 Staff Room NVRAD	370	-
SDGF06 SFL therapy	120	-
SDGF11 counselling room NVRAD	60	-
SDGF01 Staff Work Area NVRAD	370	-
SDGF04 SFL Office NVRAD	120	-
SDGF09 meeting room	120	-
SDGF05 Counselling room NVRAD	60	-
SDGF07 LSU Classroom NVUF	370	-
SDGF08 Teaching Room NVUF	370	-
SDGF18 Mentoring MVRAD	110	-
SDGF02 SFL Admin office NVRAD	240	-
G Meeting	110	-
S hub room	20	-
S cleaners	60	-
S store	110	-
S stairs	70	-
S escape stair MVRAD	90	-
S escape stair MVRAD	180	-
S store	60	-
S store	170	-
F Staff prep MVRAD	240	-

General lighting and display lighting

Zone	General lighting [W]	Display lamps efficacy [lm/W]
S wc	570	-
S wc	570	-
S wc MVRAD	460	-

Criterion 3: The spaces in the building should have appropriate passive control measures to limit solar gains

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
CFF02 The Arcade Void NVUF	NO (-83.6%)	NO
CAFF06 Media Studies	NO (-46.3%)	NO
CAFF02 Arts College Manager MVRAD	NO (-99.6%)	NO
CAFF03 Pastoral Leader MVRAD	NO (-97.1%)	NO
CAFF07 Media Studies	NO (-45.6%)	NO
CAFF07 Meeting MVRAD	N/A	N/A
CAFF01 Creative Arts Home Base MVRAD	NO (-31.7%)	NO
CAFF08 Drama Studio 1	NO (-64.6%)	NO
CAFF09 Drama Studio 2	NO (-68.1%)	NO
CAFF10 ICT Rich Room	YES (+41.6%)	NO
CAGF 01 theatre	N/A	N/A
CAGF 01 theatre green room	N/A	N/A
CAGF 01 theatre change	N/A	N/A
CAGF 01 theatre store	N/A	N/A
CAGF 01 theatre change	N/A	N/A
CGF02 The Arcade NVUF	NO (-22.8%)	NO
CASF17 General Art Room 1	NO (-10.1%)	NO
CASF16 Large Art Room	NO (-71.4%)	NO
CASF18 General Art Room 2	NO (-15.8%)	NO
CASF09 Prac	NO (-34.4%)	NO
CASF08 Prac	NO (-60.1%)	NO
CASF04 Music Ensemble	NO (-37.4%)	NO
CASF03 Music Recital	NO (-51.1%)	NO
CASF07 Prac	N/A	N/A
CASF06 Prac	N/A	N/A
CASF05 Recording	N/A	N/A
CASF02 Music Class 2	YES (+24.7%)	NO
CASF01 Music Class 1	YES (+38.1%)	NO
CASF15 General Art Room 3	NO (-68.3%)	NO
CASF11 Prac	NO (-28.7%)	NO
CASF10 Prac	NO (-33%)	NO
CASF22 Meeting	N/A	N/A
ADGF01 Reception Admin NVRAD	NO (-82.9%)	NO
ADGF17 Conference room NVRAD	NO (-87.9%)	NO
ADGF08 Sfl Office NVRAD	NO (-41.9%)	NO
ADGF02 Print room repro MVRAD	NO (-96.6%)	NO
SDGF13 meeting room NVRAD	N/A	N/A
ADGF11 data exams team	NO (-56.6%)	NO
ADGF12 Info Manager MVRAD	NO (-89.6%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
ADGF13 Busar Office MVRAD	NO (-90.9%)	NO
ADGF15 Data Exam Team MVRAD	NO (-99%)	NO
ADGF14 Meeting MVRAD	N/A	N/A
ADGF16 Prem manager MVRAD	NO (-96.6%)	NO
ADGF18 SLT Safer School NVRAD	NO (-91.2%)	NO
ADGF19 Reception NVUF	NO (-75.8%)	NO
F circulation NVRAD	NO (-55.7%)	NO
F hub MVRAD	NO (-96.5%)	NO
FMGF04 Dining	NO (-34.5%)	NO
FMGF12 Work Area MVRAD	N/A	N/A
LRFF05 Post 16 NVUF	N/A	N/A
F theatre void ???	N/A	N/A
SDGF10 safer schools officer	N/A	N/A
ADGF03	N/A	N/A
ADGF04	N/A	N/A
ADGF05	NO (-95.8%)	NO
ADGF07	N/A	N/A
G circulation	NO (-90.5%)	NO
G circulation	NO (-95.5%)	NO
G circulation	NO (-93.3%)	NO
G store	NO (-63.8%)	NO
G hub	N/A	N/A
G store	N/A	N/A
HFF03 Dining Hub MVRAD	N/A	N/A
HFF03 Dining Hub MVRAD	NO (-98.5%)	NO
HFF03 Dining Hub MVRAD	NO (-97.9%)	NO
HFF17 Large Class 5	YES (+56.2%)	NO
HFF14 Large Class 4 NVRAD	NO (-48.5%)	NO
HFF10 Staff Prep Humanities NVUF	NO (-55%)	NO
HFF13 Standard Class NVRAD	NO (-33.6%)	NO
HFF05 Large Class 2 NVRAD	NO (-60.9%)	NO
HFF06 Standard Class 3 NVRAD	NO (-38.9%)	NO
HFF09 Seminar Room NVUF	NO (-53.7%)	NO
HFF04 Large Class 1 NVRAD	NO (-66.3%)	NO
HFF08 Pastoral Leader MVRAD	NO (-99.2%)	NO
HFF02 Humanities Homebase	NO (-60%)	NO
HFF12 Seminar Room NVRAD	NO (-46.1%)	NO
HFF19 Large Class 5	YES (+49.1%)	NO
HFF18 Standard Class 2	YES (+28.4%)	NO
HFF24 Standard Class 6	YES (+34%)	NO
HFF23 Standard Class 5	YES (+31.6%)	NO
HFF22 Standard Class 4	YES (+28.3%)	NO
HFF21 Standard Class 3	YES (+29.2%)	NO
HFF20 Standard Class 2	YES (+46.5%)	NO
LRFF07 6th Study NVRAD	NO (-61.6%)	NO
MFF09 Security MVRAD	NO (-52.7%)	NO
LRFF07 6th Study	YES (+56.8%)	NO
LRFF01 LRC NVUF	YES (+145.8%)	NO
LRFF04 Office NVUF	NO (-47.8%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
LRFF03 Post NVUF	NO (-43.8%)	NO
LRFF02 Conn Career NVUF	NO (-49.9%)	NO
LRGF02 office	NO (-77.6%)	NO
ELSF13 Large Class NVRAD	NO (-63.3%)	NO
ELSF15 Wrk Exo	N/A	N/A
ELSF14 Large Class NVRAD	NO (-38.1%)	NO
ELSF05 Large Class NVRAD	YES (+78.9%)	NO
ELSF12 Standard Class NVRAD	NO (-34.9%)	NO
ELSF06 Standard Class NVRAD	NO (-49.2%)	NO
ELSF04 Large Class NVRAD	NO (-34%)	NO
ELSF09 Standard Class NVUF	NO (-53.4%)	NO
ELSF08 Meeting	N/A	N/A
ELSF01 English Homebase	YES (+1518.2%)	NO
ELSF03 Dining Hub MVRAD	N/A	N/A
ELSF10 Staff Prep NVUF	NO (-34.1%)	NO
ELSF11 Seminar room NVRAD	NO (-45.6%)	NO
ELSF19 Seminar Room Class 2	YES (+54.3%)	NO
ELSF18 Large Class 63	YES (+53%)	NO
ELSF17 Standard Class	YES (+41.2%)	NO
ELSF16 Standard Class	YES (+55.1%)	NO
ELSF15 D of L Past Leader	N/A	N/A
ELSF23 SLT Admin	YES (+25.7%)	NO
ELSF22 Standard Class	YES (+37.2%)	NO
ELSF21 Standard Class	YES (+39.8%)	NO
ELSF20 Standard Class	YES (+55%)	NO
CR125 Pastoral leader MVRAD	YES (+5.6%)	NO
MFF13 Group Area MVRAD	NO (-22.7%)	NO
F SLT office MVRAD	N/A	N/A
MFF08 Maths ICT Rich Class 2 NVRAD	NO (-32.3%)	NO
MFF07 Maths Standard Class 4 NVRAD	NO (-23.6%)	NO
MFF06 Maths Standard Class 3 NVRAD	NO (-30.2%)	NO
MFF05 Maths Standard Class 2 NVRAD	NO (-42.8%)	NO
MFF04 Maths Standard Class 1 MVRAD	NO (-68.6%)	NO
MFF01 Store	NO (-85.5%)	NO
MFF16 Maths ICT Rich Class 3 NVRAD	YES (+96.4%)	NO
F meeting room MVRAD	N/A	N/A
MFF14 ICT Rich Class NVRAD	NO (-61.1%)	NO
MGF04 Maths ICT Rich Class 1 NVRAD	NO (-82%)	NO
MGF03 Maths ICT Rich Class 3 NVRAD	NO (-39.4%)	NO
MGF02 Maths Large Class 2 NVRAD	NO (-31.7%)	NO
MGF01 Maths Large Class 1 NVRAD	NO (-37.9%)	NO
SCGF10 Product Design Room	NO (-4.9%)	NO
SCFF10 Serviced Lab 4	NO (-28.7%)	NO
S circulation above arcade MVRAD	NO (-82.2%)	NO
SCFF02 Serviced Lab 2	NO (-21.5%)	NO
SCFF04 Multiuse Lab 1	NO (-1.4%)	NO
SCFF06 Prep Instruments	NO (-18%)	NO
SCFF07 Paired Multi Use lab 2	YES (+9.5%)	NO
SCFF08 Serviced Lab 3	YES (+13.4%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
SCFF09 Prep Room	NO (-34.2%)	NO
SCFF11 Science Studio 3	NO (-48.5%)	NO
SCFF13 Pastoral Leader Admin	NO (-74.3%)	NO
SCFF03 Prep	NO (-67.7%)	NO
SCFF05 Breakout	NO (-29.5%)	NO
SCFF01 Science Studio 4	NO (-62.7%)	NO
SCFF03 Prep	NO (-87%)	NO
SCFF14 meeting	NO (-68.9%)	NO
SCGF05 Science Studio 2	NO (-71.2%)	NO
SCGF06 Sevice Lab 1	NO (-26.6%)	NO
SCGF07 Science Studio 1	YES (+2.5%)	NO
SCGF08 Prep Room	NO (-44.7%)	NO
SCGF09 Interactive Theatre	YES (+133.8%)	NO
SCGF10 Product Design Room	NO (-22.7%)	NO
SCGF11 Graphics Room 1	YES (+10.4%)	NO
SCGF13 Materials Prep	YES (+12.3%)	NO
SCGF14 Resistant Materials	NO (-10.7%)	NO
SCGF18 Graphics Room 2	NO (-81.9%)	NO
SCGF01 Homebase NVUF	NO (-34.8%)	NO
SCGF02 Staff Work Prep	NO (-78.8%)	NO
SCGF04 Prep room	NO (-70%)	NO
SCGF09 Interactive Theatre void	YES (+24.8%)	NO
SCGF19 Construction Textiles NVRAD	NO (-15.2%)	NO
SCGF20 Food Room MVRAD	NO (-44.3%)	NO
S circulation above arcade MVRAD	NO (-67.8%)	NO
S circulation MVRAD	YES (+92.7%)	NO
SDGF12 Staff Room NVRAD	NO (-40.5%)	NO
SDGF06 SFL therapy	NO (-45.1%)	NO
SDGF11 counselling room NVRAD	N/A	N/A
SDGF01 Staff Work Area NVRAD	NO (-68.7%)	NO
SDGF04 SFL Office NVRAD	NO (-43.9%)	NO
SDGF09 meeting room	NO (-41.1%)	NO
SDGF05 Counselling room NVRAD	N/A	N/A
SDGF07 LSU Classroom NVUF	NO (-23.7%)	NO
SDGF08 Teaching Room NVUF	NO (-30.6%)	NO
SDGF18 Mentoring MVRAD	NO (-91.6%)	NO
SDGF02 SFL Admin office NVRAD	NO (-74.9%)	NO
G Meeting	N/A	N/A
F Staff prep MVRAD	NO (-78.4%)	NO

Criterion 4: The performance of the building, as built, should be consistent with the BER

Separate submission

Criterion 5: The necessary provisions for enabling energy-efficient operation of the building should be in place

Separate submission

EPBD (Recast): Consideration of alternative energy systems

Were alternative energy systems considered and analysed as part of the design process?	NO
Is evidence of such assessment available as a separate submission?	NO
Are any such measures included in the proposed design?	NO

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Area [m ²]	13666.4	13666.4
External area [m ²]	20801.3	20801.3
Weather	LON	LON
Infiltration [m ³ /hm ² @ 50Pa]	5	5
Average conductance [W/K]	10134.2	8693.52
Average U-value [W/m ² K]	0.49	0.42
Alpha value* [%]	8.86	10

* Percentage of the building's average heat transfer coefficient which is due to thermal bridging

Building Use

% Area Building Type

A1/A2 Retail/Financial and Professional services
A3/A4/A5 Restaurants and Cafes/Drinking Est./Takeaways
B1 Offices and Workshop businesses
B2 to B7 General Industrial and Special Industrial Groups
B8 Storage or Distribution
C1 Hotels
C2 Residential Inst.: Hospitals and Care Homes
C2 Residential Inst.: Residential schools
C2 Residential Inst.: Universities and colleges
C2A Secure Residential Inst.
Residential spaces
D1 Non-residential Inst.: Community/Day Centre
D1 Non-residential Inst.: Libraries, Museums, and Galleries
100 D1 Non-residential Inst.: Education
D1 Non-residential Inst.: Primary Health Care Building
D1 Non-residential Inst.: Crown and County Courts
D2 General Assembly and Leisure, Night Clubs and Theatres
Others: Passenger terminals
Others: Emergency services
Others: Miscellaneous 24hr activities
Others: Car Parks 24 hrs
Others - Stand alone utility block

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	11	9.64
Cooling	0.67	1.71
Auxiliary	6.06	13.29
Lighting	12.87	11.42
Hot water	15.71	14.45
Equipment*	25.66	25.66
TOTAL**	46.32	50.51

* Energy used by equipment does not count towards the total for calculating emissions.

** Total is net of any electrical energy displaced by CHP generators, if applicable.

Energy Production by Technology [kWh/m²]

	Actual	Notional
Photovoltaic systems	1.38	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	1.01	0

Energy & CO₂ Emissions Summary

	Actual	Indicative Target
Heating + cooling demand [MJ/m ²]	87.22	73.27
Primary energy* [kWh/m ²]	94.02	108.22
Total emissions [kg/m ²]	16.2	19.3

* Primary energy is net of any electrical energy displaced by CHP generators, if applicable.

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] Electricity									
Actual	116.1	0	35.5	0	2.2	0.91	0	0.97	0
Notional	82.6	0	27.5	0	1	0.83	0	----	----
[ST] Chilled ceilings or passive chilled beams and displacement ventilation, [HS] Heat pump (electric): ground or water source									
Actual	85.3	27.9	5.3	1	5	4.45	7.46	5.24	7.91
Notional	37	35.5	4	2.6	19	2.56	3.79	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity									
Actual	120.8	0	36.9	0	3.9	0.91	0	0.97	0
Notional	58.3	0	19.4	0	3	0.83	0	----	----
[ST] Chilled ceilings or passive chilled beams and displacement ventilation, [HS] Heat pump (electric): ground or water source									
Actual	118.9	11.3	7	0.4	10.7	4.75	6.98	5.24	7.91
Notional	83.5	23.1	9.1	1.7	10.3	2.56	3.79	----	----
[ST] Constant volume system (fixed fresh air rate), [HS] Heat pump (electric): ground or water source, [HFT] Electricity, [CFT] Electricity									
Actual	47	14.2	2.7	1.1	16.9	4.87	3.73	5.24	7.91
Notional	65	19.7	7.1	1.4	16.4	2.56	3.79	----	----
[ST] Chilled ceilings or passive chilled beams and displacement ventilation, [HS] Heat pump (electric): ground or water source									
Actual	56	20.9	3.4	0.8	5.5	4.51	7.37	5.24	7.91
Notional	66.4	34.6	7.2	2.5	19.2	2.56	3.79	----	----
[ST] Chilled ceilings or passive chilled beams and displacement ventilation, [HS] Heat pump (electric): ground or water source									
Actual	48.6	41.8	3	1.6	7	4.54	7.33	5.24	7.91
Notional	51.1	45.8	5.5	3.4	24.9	2.56	3.79	----	----
[ST] Chilled ceilings or passive chilled beams and displacement ventilation, [HS] Heat pump (electric): ground or water source									
Actual	62.5	28	3.8	1.1	8.2	4.59	7.24	5.24	7.91
Notional	50.7	43.8	5.5	3.2	21.7	2.56	3.79	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity									
Actual	71.6	0	21.9	0	12.7	0.91	0	0.97	0
Notional	53	0	17.6	0	4.7	0.83	0	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity									
Actual	29.8	0	9.1	0	38.6	0.91	0	0.97	0
Notional	7.8	0	2.6	0	16.3	0.83	0	----	----
[ST] No Heating or Cooling									
Actual	0	0	0	0	0	0	0	0	0
Notional	0	0	0	0	0	0	0	----	----

Key to terms

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 (for notional building, value depends on activity glazing class)
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

Key Features

The BCO can give particular attention to items with specifications that are better than typically expected.

Building fabric

Element	U _{i-Typ}	U _{i-Min}	Surface where the minimum value occurs*
Wall	0.23	0.25	CF000001:Surf[3]
Floor	0.2	0.15	CG000000:Surf[0]
Roof	0.15	0.15	CF000001:Surf[1]
Windows, roof windows, and rooflights	1.5	1.3	CF000001:Surf[0]
Personnel doors	1.5	0.61	GBNS0000:Surf[4]
Vehicle access & similar large doors	1.5	-	No Vehicle access doors in building
High usage entrance doors	1.5	-	No High usage entrance doors in building
U _{i-Typ} = Typical individual element U-values [W/(m ² K)]		U _{i-Min} = Minimum individual element U-values [W/(m ² K)]	
* There might be more than one surface where the minimum U-value occurs.			

Air Permeability	Typical value	This building
m ³ /(h.m ²) at 50 Pa	5	5