

Project name

Refurbished Haringey Civic Centre Lean Stage 3+

As designed

Date: Mon Sep 04 09:56:01 2023

Administrative information

Building Details

Address: River Park House, 225 High Rd, London, N22 8HQ

Certifier details

Name: David Richard Kingstone

Telephone number: 07753829637

Address: Buro Happold, 3 Wellington Place, Leeds, LS1 4AP

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.19

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.19

BRUKL compliance module version: v6.1.e.0

Foundation area [m²]: 1236.74

The CO₂ emission and primary energy rates of the building must not exceed the targets

The building does not comply with England Building Regulations Part L 2021

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	3.38
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	5.65
Target primary energy rate (TPER), kWh _{PE} /m ² annum	36.66
Building primary energy rate (BPER), kWh _{PE} /m ² annum	61.04
Do the building's emission and primary energy rates exceed the targets?	BER > TER BPER > TPER

The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Fabric element	U _a -Limit	U _a -Calc	U _i -Calc	First surface with maximum value
Walls*	0.26	0.3	0.3	01000001:Surf[36]
Floors	0.18	0.25	0.25	0000001C:Surf[0]
Pitched roofs	0.16	-	-	No pitched roofs in building
Flat roofs	0.18	0.18	0.18	0100003D:Surf[1]
Windows** and roof windows	1.6	1.8	1.8	0000001C:Surf[1]
Rooflights***	2.2	-	-	No roof lights in building
Personnel doors^	1.6	2.2	2.2	01000003:Surf[0]
Vehicle access & similar large doors	1.3	-	-	No vehicle access doors in building
High usage entrance doors	3	-	-	No high usage entrance doors in building

U_a-Limit = Limiting area-weighted average U-values [W/(m²K)]

U_i-Calc = Calculated maximum individual element U-values [W/(m²K)]

U_a-Calc = Calculated area-weighted average U-values [W/(m²K)]

* 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.

*** Values for rooflights refer to the horizontal position.

^ For fire doors, limiting U-value is 1.8 W/m²K

NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
m ³ /(h.m ²) at 50 Pa	8	5

Building services

For details on the standard values listed below, system-specific guidance, and additional regulatory requirements, refer to the Approved Documents.

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

1- 02. FCUs_MVHR

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.64	4.34	0	1.6	0.8
Standard value	2.5*	N/A	N/A	2^	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

2- 03. Open office FCUs

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.64	4.34	0	1.6	0.8
Standard value	2.5*	N/A	N/A	2^	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

3- 05. Radiators circ and store

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.64	-	0.2	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

4- 06. Toilet mech vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.64	-	0.2	-	0.8
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

5- 04. DX (Comms)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.64	5.55	-	-	-
Standard value	2.5*	5	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

6- 01. Aud All air AHU

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.64	4.34	0	1.6	0.8
Standard value	2.5*	N/A	N/A	2^	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

1- 07. DHW Building

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	1	0.005
Standard value	1	N/A

Zone-level mechanical ventilation, exhaust, and terminal units

ID	System type in the Approved Documents
A	Local supply or extract ventilation units
B	Zonal supply system where the fan is remote from the zone
C	Zonal extract system where the fan is remote from the zone
D	Zonal balanced supply and extract ventilation system
E	Local balanced supply and extract ventilation units
F	Other local ventilation units
G	Fan assisted terminal variable air volume units
H	Fan coil units
I	Kitchen extract with the fan remote from the zone and a grease filter
NB: Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.	

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1		Zone	Standard
00 - Changing Places Space	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00 - Civic Bridge Welcome Area/Circulation	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00 - Entrance Lobby/Reception 02	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00 - Entrance Lobby/Reception 03	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00 - Flexible Meeting/Event Space	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00 - Meeting Room 01	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00 - Meeting Room 02	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00 - Meeting Room 04	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00 - Meeting Room 05	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00 - Meeting Room 06	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00 - Meeting Room 07	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00 - Meeting Room 08	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00 - Meeting Room 09	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00 - Open Office 01	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00 - Open Office 02	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00 - Quiet Room	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00 - Study Room	-	-	-	-	-	-	-	0.2	-	-	-	N/A
01 - Committee 01 & 2	-	-	-	-	-	-	-	0.2	-	-	-	N/A

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
01 - Committee 03	-	-	-	-	-	-	-	0.2	-	-	N/A	
01 - Mayor Robing	-	-	-	-	-	-	-	0.2	-	-	N/A	
01 - Mayor's Aid & Wating Area	-	-	-	-	-	-	-	0.2	-	-	N/A	
01 - Mayors Parlour	-	-	-	-	-	-	-	0.2	-	-	N/A	
01 - Meeting 01	-	-	-	-	-	-	-	0.2	-	-	N/A	
01 - Meeting 02	-	-	-	-	-	-	-	0.2	-	-	N/A	
01 - Meeting 03	-	-	-	-	-	-	-	0.2	-	-	N/A	
01 - Meeting 04	-	-	-	-	-	-	-	0.2	-	-	N/A	
01 - Meeting 05	-	-	-	-	-	-	-	0.2	-	-	N/A	
01 - Open Office 01	-	-	-	-	-	-	-	0.2	-	-	N/A	
01 - Open Office 02	-	-	-	-	-	-	-	0.2	-	-	N/A	
01 - Open Office 03	-	-	-	-	-	-	-	0.2	-	-	N/A	
01 - Open Office 03	-	-	-	-	-	-	-	0.2	-	-	N/A	
01 - Opposition Leader's Office	-	-	-	-	-	-	-	0.2	-	-	N/A	
01 - Study Room 01	-	-	-	-	-	-	-	0.2	-	-	N/A	
01 - Study Room 02	-	-	-	-	-	-	-	0.2	-	-	N/A	
01 - Study Room 03	-	-	-	-	-	-	-	0.2	-	-	N/A	
02 - Meeting Room 01	-	-	-	-	-	-	-	0.2	-	-	N/A	
02 - Meeting Room 02	-	-	-	-	-	-	-	0.2	-	-	N/A	
02 - Open Office 02	-	-	-	-	-	-	-	0.2	-	-	N/A	
02 - Open Office 03	-	-	-	-	-	-	-	0.2	-	-	N/A	
02 - Open Office 04	-	-	-	-	-	-	-	0.2	-	-	N/A	
02 - Police Secure Room	-	-	-	-	-	-	-	0.2	-	-	N/A	
02 - Study Room 01	-	-	-	-	-	-	-	0.2	-	-	N/A	
02 - Study Room 01	-	-	-	-	-	-	-	0.2	-	-	N/A	
02 - Study Room 02	-	-	-	-	-	-	-	0.2	-	-	N/A	
03 - Booth	-	-	-	-	-	-	-	0.2	-	-	N/A	
03 - MASH	-	-	-	-	-	-	-	0.2	-	-	N/A	
03 - Open Office 01	-	-	-	-	-	-	-	0.2	-	-	N/A	
03 - Open Office 02	-	-	-	-	-	-	-	0.2	-	-	N/A	
03 - Open Office 03	-	-	-	-	-	-	-	0.2	-	-	N/A	
03 - Police Secure Room	-	-	-	-	-	-	-	0.2	-	-	N/A	
02 - Open Office 01	-	-	-	-	-	-	-	0.2	-	-	N/A	

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
00 - Changing Places Space		122	-	-
00 - Civic Bridge Welcome Area/Circulation		112	-	-
00 - Entrance Lobby/Reception 02		111	80	1.688
00 - Entrance Lobby/Reception 03		111	80	1.688
00 - Flexible Meeting/Event Space		122	-	-
00 - Meeting Room 01		122	-	-

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80		0.3
00 - Meeting Room 02		122	-		-
00 - Meeting Room 04		122	-		-
00 - Meeting Room 05		122	-		-
00 - Meeting Room 06		122	-		-
00 - Meeting Room 07		122	-		-
00 - Meeting Room 08		122	-		-
00 - Meeting Room 09		122	-		-
00 - Open Office 01		114	-		-
00 - Open Office 02		114	-		-
00 - Quiet Room		122	-		-
00 - Study Room		122	-		-
00_Circ_01		112	-		-
00_Circ_03		112	-		-
00_Circ_04		112	-		-
00_Circ_05		112	-		-
00_Circ_02		112	-		-
00_Civic_Bridge_Kitchen/Storage		108	-		-
00_Civic_Bridge_WC_Lobby		112	-		-
00_Civic_Bridge_WCs		108	-		-
00_Cleaners Cup.		108	-		-
00_Comms_Room		156	-		-
00_Draft_Lobby		112	-		-
00_Draught_Lobby_01		112	-		-
00_Lobby		112	-		-
00_Lobby		112	-		-
00_Stairs_01		147	-		-
00_Stairs_02		147	-		-
00_WC_Lobby_01		112	-		-
00_WCs_01		108	-		-
00_WCs_02		108	-		-
01 - Civic Chamber 01		97	-		-
01 - Committee 01 & 2		122	-		-
01 - Committee 03		122	-		-
01 - Mayor Robing		122	-		-
01 - Mayor Robing - WC		108	-		-
01 - Mayor's Aid & Wating Area		122	-		-
01 - Mayors Parlour		122	-		-
01 - Meeting 01		122	-		-
01 - Meeting 02		122	-		-
01 - Meeting 03		122	-		-
01 - Meeting 04		122	-		-
01 - Meeting 05		122	-		-
01 - Open Office 01		114	-		-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
01 - Open Office 02		114	-	-
01 - Open Office 03		114	-	-
01 - Open Office 03		114	-	-
01 - Opposition Leader's Office		122	-	-
01 - Study Room 01		122	-	-
01 - Study Room 02		122	-	-
01 - Study Room 03		122	-	-
01_Acc. WC		108	-	-
01_Aud_Circ_01		112	-	-
01_Aud_Circ_02		97	-	-
01_Circ_03		112	-	-
01_Circ_04		112	-	-
01_Circ_04		112	-	-
01_Circ_04		112	-	-
01_Circ_05		112	-	-
01_Circulation		112	-	-
01_Civic_Bridge_Circ_01		112	-	-
01_Comms Room		156	-	-
01_Stairs_01		147	-	-
01_WC_Lobby_01		112	-	-
01_WCs		108	-	-
01_WCs_01		108	-	-
01_WCs_03		108	-	-
01_WCs_03		108	-	-
01_WCs_04		108	-	-
01_WCs_Cleaner's_Cupboard		108	-	-
01_WCs_Lobby		112	-	-
02 - Civic Auditorium		97	-	-
02 - Civic Seating		97	-	-
02 - Meeting Room 01		122	-	-
02 - Meeting Room 02		122	-	-
02 - Open Office 02		114	-	-
02 - Open Office 03		114	-	-
02 - Open Office 04		114	-	-
02 - Police Secure Room		122	-	-
02 - Study Room 01		122	-	-
02 - Study Room 01		122	-	-
02 - Study Room 02		122	-	-
02_Aud_Circ_01		97	-	-
02_Circulation		112	-	-
02_Circ_02		112	-	-
02_Circ_03		112	-	-
02_Circ_04		112	-	-

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]	
	Standard value	95	80	0.3	
02_Comms_Room		156	-	-	
02_Stairs		147	-	-	
02_Stairs_01		147	-	-	
02_Store		108	-	-	
02_WC_01		108	-	-	
02_WC_02		108	-	-	
02_WC_03		108	-	-	
02_WC_Lobby		112	-	-	
02_WC_Lobby_01		112	-	-	
02_WCs_01		108	-	-	
03 - Booth		122	-	-	
03 - MASH		114	-	-	
03 - Open Office 01		114	-	-	
03 - Open Office 02		114	-	-	
03 - Open Office 03		114	-	-	
03 - Police Secure Room		122	-	-	
03_Circ_01		112	-	-	
03_Circ_02		112	-	-	
03_Circ_03		112	-	-	
03_Circ_04		112	-	-	
03_Circ_05		112	-	-	
03_Cleaners_01		108	-	-	
03_Comms_Room		156	-	-	
03_Council_Chamber_Comms_Room		156	-	-	
03_Stairs_01		147	-	-	
03_Stairs_02		147	-	-	
03_WC		108	-	-	
03_WCs_01		108	-	-	
03_WCs_Lobby		112	-	-	
B0_Circ_01		112	-	-	
B0_Comms_Room		156	-	-	
B0_Domestic_Water_Tank		156	-	-	
B0_General_Storage		108	-	-	
B0_General_Storage_02		108	-	-	
B0_General_Storage_03		108	-	-	
B0_General_Storage_04		108	-	-	
B0_IT_Secure_Storage		108	-	-	
B0_Life_Lobby		112	-	-	
B0_Life_Safety_Room		156	-	-	
B0_Lobby		112	-	-	
B0_LV_Room		156	-	-	
B0_Plant_Space		156	-	-	
B0_Stair_02		147	-	-	

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
B0_Stairs_01		147	-	-
B0_Storage		108	-	-
02 - Open Office 01		114	-	-

The spaces in the building should have appropriate passive control measures to limit solar gains in summer

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
00 - Changing Places Space	YES (+0.3%)	NO
00 - Civic Bridge Welcome Area/Circulation	YES (+29%)	NO
00 - Entrance Lobby/Reception 02	YES (+181.4%)	NO
00 - Entrance Lobby/Reception 03	YES (+137.6%)	NO
00 - Flexible Meeting/Event Space	YES (+16.8%)	NO
00 - Meeting Room 01	YES (+7.7%)	NO
00 - Meeting Room 02	YES (+99%)	NO
00 - Meeting Room 04	YES (+9.5%)	NO
00 - Meeting Room 05	YES (+9.8%)	NO
00 - Meeting Room 06	YES (+9.3%)	NO
00 - Meeting Room 07	YES (+8.5%)	NO
00 - Meeting Room 08	YES (+105.6%)	NO
00 - Meeting Room 09	NO (-24%)	NO
00 - Open Office 01	YES (+27.7%)	NO
00 - Open Office 02	YES (+7.1%)	NO
00 - Quiet Room	NO (-81.5%)	NO
00 - Study Room	YES (+13.1%)	NO
00_Comms_Room	N/A	N/A
01 - Civic Chamber 01	YES (+2.1%)	NO
01 - Committee 01 & 2	YES (+4.7%)	NO
01 - Committee 03	YES (+53.5%)	NO
01 - Mayor Robing	YES (+43%)	NO
01 - Mayor's Aid & Wating Area	N/A	N/A
01 - Mayors Parlour	YES (+50.6%)	NO
01 - Meeting 01	YES (+22.7%)	NO
01 - Meeting 02	YES (+16.9%)	NO
01 - Meeting 03	YES (+16.6%)	NO
01 - Meeting 04	YES (+38.4%)	NO
01 - Meeting 05	YES (+7.7%)	NO
01 - Open Office 01	YES (+37.5%)	NO
01 - Open Office 02	NO (-31%)	NO
01 - Open Office 03	NO (-6.3%)	NO
01 - Open Office 03	NO (-0.1%)	NO
01 - Opposition Leader's Office	YES (+0.7%)	NO
01 - Study Room 01	YES (+9.6%)	NO
01 - Study Room 02	NO (-2.9%)	NO
01 - Study Room 03	YES (+52.7%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
01_Aud_Circ_02	YES (+16%)	NO
01_Comms Room	N/A	N/A
02 - Civic Auditorium	NO (-63.3%)	NO
02 - Civic Seating	YES (+21.8%)	NO
02 - Meeting Room 01	YES (+21.9%)	NO
02 - Meeting Room 02	YES (+10.3%)	NO
02 - Open Office 02	NO (-42.6%)	NO
02 - Open Office 03	NO (-5.7%)	NO
02 - Open Office 04	NO (-4.7%)	NO
02 - Police Secure Room	NO (-16.6%)	NO
02 - Study Room 01	YES (+4.5%)	NO
02 - Study Room 01	YES (+13.9%)	NO
02 - Study Room 02	NO (-3.4%)	NO
02_Comms_Room	N/A	N/A
03 - Booth	YES (+41.8%)	NO
03 - MASH	YES (+38.1%)	NO
03 - Open Office 01	YES (+52.9%)	NO
03 - Open Office 02	YES (+35.2%)	NO
03 - Open Office 03	YES (+25.8%)	NO
03 - Police Secure Room	YES (+4.1%)	NO
03_Comms_Room	N/A	N/A
03_Council_Chamber_Comms_Room	N/A	N/A
B0_Comms_Room	N/A	N/A
02 - Open Office 01	NO (-2.9%)	NO

Regulation 25A: Consideration of high efficiency alternative energy systems

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

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Floor area [m ²]	5434.7	5434.7
External area [m ²]	7399.9	7399.9
Weather	LON	LON
Infiltration [m ³ /hm ² @ 50Pa]	5	3
Average conductance [W/K]	4219.14	0
Average U-value [W/m ² K]	0.57	0
Alpha value* [%]	24.15	10

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

Building Use

% Area	Building Type
	Retail/Financial and Professional Services
	Restaurants and Cafes/Drinking Establishments/Takeaways
92	Offices and Workshop Businesses
	General Industrial and Special Industrial Groups
	Storage or Distribution
	Hotels
	Residential Institutions: Hospitals and Care Homes
	Residential Institutions: Residential Schools
	Residential Institutions: Universities and Colleges
	Secure Residential Institutions
	Residential Spaces
8	Non-residential Institutions: Community/Day Centre
	Non-residential Institutions: Libraries, Museums, and Galleries
	Non-residential Institutions: Education
	Non-residential Institutions: Primary Health Care Building
	Non-residential Institutions: Crown and County Courts
	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	10.74	4.14
Cooling	5.06	2.91
Auxiliary	11.44	6.61
Lighting	10.2	9.59
Hot water	2.71	1.52
Equipment*	49.45	49.45
TOTAL **	40.14	24.77

* Energy used by equipment does not count towards the total for consumption or 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	0	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	<i>0</i>	<i>0</i>

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	144.8	89.92
Primary energy [kWh _{PE} /m ²]	61.04	36.66
Total emissions [kg/m ²]	5.65	3.38

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] Fan coil systems, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
Actual	91.6	120.4	11.3	10.3	13.4	2.25	3.24	2.64	4.34	
Notional	33.3	90.3	3.3	5.4	10.9	2.78	4.63	----	----	
[ST] Central heating using water: radiators, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
Actual	128.5	0	15.2	0	1.1	2.36	0	2.64	0	
Notional	88.9	0	8.9	0	1	2.78	0	----	----	
[ST] Constant volume system (variable fresh air rate), [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
Actual	112.4	87.2	14	10.2	47.1	2.24	2.38	2.64	4.34	
Notional	74.9	48.4	7.5	2.9	10.9	2.78	4.63	----	----	
[ST] Split or multi-split system, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
Actual	0	0	0	0	0	2.46	3.94	2.64	5.55	
Notional	0	0	0	0	0	2.78	4.63	----	----	
[ST] Fan coil systems, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
Actual	82.9	76.4	10.2	6.6	12.1	2.25	3.24	2.64	4.34	
Notional	27.7	83.2	2.8	5	10.2	2.78	4.63	----	----	
[ST] Central heating using water: radiators, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
Actual	87	0	10.3	0	0.7	2.36	0	2.64	0	
Notional	48.4	0	4.8	0	0.7	2.78	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