2.1.1 SBEM

BRUKL Output Document

HM Government

Compliance with England Building Regulations Part L 2021

Project name

The Range

As built

Date: Thu Oct 10 13:24:36 2024

Administrative information

Building Details

Address: The Range, Stowmarket, IP14 5XS

Certifier details

Name: Nathan Evans

Telephone number: Phone

Address: Street Address, City, Postcode

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.27

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.27

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

Foundation area [m^2]: 1072.52

The CO_2 emission and primary energy rates of the building must not exceed the targets

Target CO_2 emission rate (TER), $kgCO_2/m^2.annum$	1.45	
Building CO_2 emission rate (BER), $kgCO_2/m^2.annum$	0.48	
Target primary energy rate (TPER), $kWh_{PE}/m^2.annum$	15.68	
Building primary energy rate (BPER), $kWh_{PE}/m^2.annum$	4.75	
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	$U_{a\text{-}Limit}$	$U_{a\text{-}Calc}$	$U_{i\text{-}Calc}$	First surface with maximum value
Walls*	0.26	0.26	0.26	00000005:Surf[0]
Floors	0.18	0.05	0.43	0000000C:Surf[0]
Pitched roofs	0.16	-	-	No pitched roofs in building
Flat roofs	0.18	0.18	0.18	00000005:Surf[1]
Windows** and roof windows	1.6	1.4	1.4	I0000004:Surf[3]
Rooflights***	2.2	1.6	1.6	02000005:Surf[5]
Personnel doors^	1.6	1.5	1.5	0000000B:Surf[4]
Vehicle access & similar large doors	1.3	0.63	0.65	00000000:Surf[4]
High usage entrance doors	3	-	-	No high usage entrance doors in building

$U_{a\text{-}Limit}$ = Limiting area-weighted average U-values [$W/(m^2K)$] $U_{i\text{-}Calc}$ = Calculated maximum individual element U-values [$W/(m^2K)$]

$U_{a\text{-}Calc}$ = Calculated area-weighted average U-values [$W/(m^2K)$]

* 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/m^2K

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	1.46

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	>0.95

1- HVAC 02a: EPH AHU MO 201

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.67	-	0.65
Standard value	N/A	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES

2- HVAC 07: Hub 2 VRF AHU DO 202

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.85	8.85	0	1.68	0.81
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					YES

* 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- HVAC 01: EPH NV

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.67	-	-
Standard value	N/A	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES

4- HVAC 03: EPH EV

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.67	-	-
Standard value	N/A	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES

5- HVAC 04a: GF VRF AHU MO 204

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.83	10.87	0	1.75	0.81
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					YES

* 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.

6- HVAC 04c: GF VRF AHU MO 202

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.83	10.87	0	1.95	0.65
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					YES

* 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.

7- HVAC 10: All Air AHU MO 201

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0	1.64	0.65
Standard value	N/A	N/A	N/A	1.5^	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

8- HVAC 04b: GF VRF AHU MO 203

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.83	10.87	0	1.82	0.65
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					YES
* 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.					

9- HVAC 11: All Air Kitchen Future Fitout

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	-	1.6	0.65
Standard value	N/A	N/A	N/A	1.9^	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

10- HVAC 02b: EPH AHU MO 204

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.67	-	0.81
Standard value	N/A	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES

11- HVAC 05a: FF VRF AHU MO 204

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.86	4.33	0	1.75	0.65
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					YES
* 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.					

12- HVAC 09: Future Fitout VRF MVHR - Open Plan Offices

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2	2	0	1.6	0.65
Standard value	2.5*	N/A	N/A	1.5^	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* 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.					

13- HVAC 06: Hub 1 VRF AHU DO 201

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.85	8.85	0	1.66	0.81
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					YES

* 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.

14- HVAC 02d: EPH AHU DO 202

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.67	-	0.81
Standard value	N/A	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES

15- HVAC 05b: FF VRF EV

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.86	4.33	-	-	-
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					YES

* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.

1- DHW 02: ASHP System

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	4.71	0.004
Standard value	1	N/A

2- DHW 01: Point of Use (Hubs)

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	1	0.052
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**
I-0-12 Female WC	-	-	0.5	-	-	-	-	-	-	-	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
I-0-13 Male WC	-	-	0.5	-	-	-	-	-	-	-	N/A
M-0-08 Male WC	-	-	-	1.6	-	-	-	-	-	-	N/A
M-0-09 Female WC	-	-	-	1.6	-	-	-	-	-	-	N/A
M-0-13 Male Showers	-	-	-	1.6	-	-	-	-	-	-	N/A
M-0-14 Acc WC	-	-	-	1.6	-	-	-	-	-	-	N/A
M-0-15 Female Showers	-	-	-	1.6	-	-	-	-	-	-	N/A
M-0-23 New Starter Welcome Room	-	-	-	1.8	-	-	-	-	-	-	N/A
M-1-03 Female WC	-	-	-	1.6	-	-	-	-	-	-	N/A
M-1-05 Male WC	-	-	-	1.6	-	-	-	-	-	-	N/A
O-0-10 Lobby	-	-	-	1.7	-	-	-	-	-	-	N/A
O-0-11 Female WC	-	-	0.5	-	-	-	-	-	-	-	N/A
O-0-12 Male WC	-	-	0.5	-	-	-	-	-	-	-	N/A
O-1-03 Kitchenette	-	-	-	0.3	-	-	-	-	-	-	N/A
M-2-06 Comms Room	-	-	0.5	-	-	-	-	-	-	-	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
00-00 Forklift Training	180	-	-
00-00 Multi Faith Room	123	-	-
00-00 Warehouse Under Mezz	180	-	-
01-00 Mezz	180	-	-
01-00 Mezz	180	-	-
02-00 Mezz	180	-	-
02-00 Mezz	180	-	-
I-0-01 Circ	123	-	-
I-0-02 FLMs	123	-	-
I-0-03 Shift Manager	123	-	-
I-0-04 PL Manager	123	-	-
I-0-05 Inv - Inbounds Team	123	-	-
I-0-06 Kitchenette	123	-	-
I-0-07 Drivers Reception	118	-	-
I-0-08 WC	86	-	-
I-0-09 Lobby	118	-	-
I-0-10 Stair	118	-	-
I-0-11 Lobby	122	-	-
I-0-12 Female WC	122	-	-
I-0-13 Male WC	122	-	-
I-0-14 Acc WC	86	-	-
I-0-15 Cleaner	125	-	-
I-1-01 Training Team - HR Facilities	123	-	-
I-1-02 Open Office	123	-	-
I-1-03 Warehouse Manager	123	-	-

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
I-1-04 Kitchenette	122	-	-
I-1-05 Circulation	122	-	-
I-1-06 WC	122	-	-
I-1-07 WC	122	-	-
I-1-08 Cleaner	125	-	-
I-1-09 WC	122	-	-
I-1-10 WC	122	-	-
I-1-11 Stair	118	-	-
I-2-01 Stairs	125	-	-
I-2-02 Plant	125	-	-
M-0-00 Stair	140	-	-
M-0-01 Lobby	118	-	-
M-0-02 Circulation	122	-	-
M-0-02a Reception	122	123	1.098
M-0-02b Visitor Waiting Area	122	-	-
M-0-04 Cleaner	125	-	-
M-0-06 Search Room A	123	-	-
M-0-07 Search Room B	123	-	-
M-0-08 Male WC	122	-	-
M-0-09 Female WC	122	-	-
M-0-10 Acc WC	122	-	-
M-0-11 First Aid	123	-	-
M-0-12 Locker Room	123	-	-
M-0-12a Drying Space	123	-	-
M-0-13 Male Showers	122	-	-
M-0-14 Acc WC	122	-	-
M-0-15 Female Showers	122	-	-
M-0-16 Stair B	140	-	-
M-0-17 Cafeteria	123	-	-
M-0-18 Gym	123	-	-
M-0-20 WC	122	-	-
M-0-21 Crockery Wash	123	-	-
M-0-22 Food Prep	123	-	-
M-0-23 New Starter Welcome Room	123	-	-
M-0-24 COSHH Store	123	-	-
M-0-25 Corridor	123	-	-
M-0-26 Catering Office	123	-	-
M-0-27 Store	123	-	-
M-0-Therapy Room	123	-	-
M-1-00 Breakout	123	-	-
M-1-00 Lobby	118	-	-
M-1-01 Stair A	118	-	-
M-1-02 Circulation	122	-	-

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
M-1-03 Female WC	122	-	-
M-1-04 Acc WC	122	-	-
M-1-05 Male WC	122	-	-
M-1-06 Cleaner	125	-	-
M-1-07 CCTV	123	-	-
M-1-08a Kitchenette	123	-	-
M-1-09 hr	123	-	-
M-1-10 Meeting Room	123	-	-
M-1-11 GM	123	-	-
M-1-12 Stair B	140	-	-
M-1-13 Open Floor Space	142	-	-
M-2-01 Stair A	118	-	-
M-2-03 Stair B	140	-	-
O-0-02 FLMs	123	-	-
O-0-03 Shift Manager	123	-	-
O-0-04 Planning and Systems Manager	123	-	-
O-0-05 Outbound Desp Systemsd Team	123	-	-
O-0-06 Drivers Reception	123	-	-
O-0-07-WC	122	-	-
O-0-08 Lobby	123	-	-
O-0-09 Staircase	140	-	-
O-0-10 Lobby	123	-	-
O-0-11 Female WC	122	-	-
O-0-12 Male WC	122	-	-
O-0-13 Cleaners Store	125	-	-
O-0-14 Acc WC	122	-	-
O-0-15 Kitchenette	123	-	-
O-1-01 Stair	118	-	-
O-1-02 Circulation	122	-	-
O-1-03 Kitchenette	122	-	-
O-1-04 WC	122	-	-
O-1-05 WC	122	-	-
O-1-06 Cleaner	125	-	-
O-1-07 WC	122	-	-
O-1-08 Store	123	-	-
O-1-09 Office	123	-	-
O-1-10 Office	123	-	-
O-1-11 Office Space	123	-	-
O-1-12 Drivers Reception	123	-	-
O-2-01 Stair	140	-	-
O-2-02 Plant Room	125	-	-
M-2-04 Agency Training	123	-	-
M-2-05 Corridor	122	-	-

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
M-2-00 Plant	142	-	-
M-2-06 Comms Room	125	-	-
00-00 Warehouse	180	-	-

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?
00-00 Forklift Training	NO (-96.3%)	NO
00-00 Multi Faith Room	N/A	N/A
00-00 Warehouse Under Mezz	NO (-93.6%)	NO
01-00 Mezz	NO (-93.9%)	NO
01-00 Mezz	NO (-96.2%)	NO
02-00 Mezz	YES (+17%)	NO
02-00 Mezz	YES (+8.9%)	NO
I-0-01 Circ	NO (-99.3%)	NO
I-0-02 FLMs	NO (-88%)	NO
I-0-03 Shift Manager	NO (-74.6%)	NO
I-0-04 PL Manager	NO (-83%)	NO
I-0-05 Inv - Inbounds Team	NO (-86.7%)	NO
I-0-06 Kitchenette	NO (-98.7%)	NO
I-0-07 Drivers Reception	NO (-71.6%)	NO
I-1-01 Training Team - HR Facilities	NO (-82.3%)	NO
I-1-02 Open Office	NO (-79.5%)	NO
I-1-03 Warehouse Manager	NO (-63%)	NO
I-1-04 Kitchenette	NO (-100%)	NO
M-0-02 Circulation	NO (-73.1%)	NO
M-0-02a Reception	NO (-98.3%)	NO
M-0-02b Visitor Waiting Area	NO (-71.9%)	NO
M-0-06 Search Room A	N/A	N/A
M-0-07 Search Room B	N/A	N/A
M-0-11 First Aid	NO (-100%)	NO
M-0-12 Locker Room	NO (-84%)	NO
M-0-12a Drying Space	N/A	N/A
M-0-17 Cafeteria	NO (-21.5%)	NO
M-0-18 Gym	N/A	N/A
M-0-23 New Starter Welcome Room	N/A	N/A
M-0-24 COSHH Store	N/A	N/A
M-0-25 Corridor	N/A	N/A
M-0-26 Catering Office	N/A	N/A
M-0-Therapy Room	N/A	N/A
M-1-00 Breakout	NO (-62.8%)	NO
M-1-02 Circulation	NO (-64.6%)	NO
M-1-07 CCTV	N/A	N/A
M-1-08a Kitchenette	NO (-94.4%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
M-1-09 hr	N/A	N/A
M-1-10 Meeting Room	NO (-89.3%)	NO
M-1-11 GM	NO (-76.2%)	NO
M-1-13 Open Floor Space	NO (-56.6%)	NO
O-0-02 FLMs	NO (-78.7%)	NO
O-0-03 Shift Manager	NO (-70.6%)	NO
O-0-04 Planning and Systems Manager	NO (-78.5%)	NO
O-0-05 Outbound Desp Systemsd Team	NO (-86.6%)	NO
O-0-06 Drivers Reception	NO (-74%)	NO
O-0-15 Kitchenette	NO (-97.1%)	NO
O-1-03 Kitchenette	N/A	N/A
O-1-09 Office	NO (-74.9%)	NO
O-1-10 Office	NO (-82.4%)	NO
O-1-11 Office Space	NO (-90.9%)	NO
O-1-12 Drivers Reception	NO (-66.6%)	NO
M-2-04 Agency Training	NO (-39.9%)	NO
M-2-05 Corridor	N/A	N/A
M-2-06 Comms Room	NO (-63%)	NO
00-00 Warehouse	YES (+17.6%)	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?	YES
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]	140876	140876
External area [m^2]	234696	234696
Weather	NOR	NOR
Infiltration [m^3/hm^2@ 50Pa]	1	5
Average conductance [W/K]	46074.8	66695.7
Average U-value [W/m^2K]	0.2	0.28
Alpha value* [%]	24.98	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
	Offices and Workshop Businesses
	General Industrial and Special Industrial Groups
100	**Storage or Distribution**
	Hotels
	Residential Institutions: Hospitals and Care Homes
	Residential Institutions: Residential Schools
	Residential Institutions: Universities and Colleges
	Secure Residential Institutions
	Residential Spaces
	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/m^2]

	Actual	Notional
Heating	0.08	0.03
Cooling	0.52	0.29
Auxiliary	0.21	0.24
Lighting	5.44	8.36
Hot water	1.3	1.93
Equipment*	46.27	46.27
TOTAL**	**7.54**	**10.86**

* 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/m^2]

	Actual	Notional
Photovoltaic systems	4.38	0.26
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
Displaced electricity	*4.38*	*0.26*

Energy & CO_2 Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m^2]	4.65	5.06
Primary energy [kWh_{PE}/m^2]	4.75	15.68
Total emissions [kg/m^2]	0.48	1.45

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 SSEEF	Cool SSEER	Heat gen SEFF	Cool gen SEER
[ST] Other local room heater - unfanned, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	100	0	33	0	7.9	0.84	0	1	0
	Notional	31.4	0	6.2	0	4.3	1.41	0	----	----
[ST] Other local room heater - unfanned, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	13.3	0	4.4	0	6.9	0.84	0	1	0
	Notional	4	0	0.8	0	3.6	1.41	0	----	----
[ST] Other local room heater - unfanned, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	0.5	0	0.2	0	2	0.84	0	1	0
	Notional	0	0	0	0	1.2	1.41	0	----	----
[ST] Other local room heater - unfanned, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	27.8	0	7.7	0	0	1	0	1	0
	Notional	16.4	0	3.2	0	0	1.41	0	----	----
[ST] Other local room heater - unfanned, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	37	0	10.3	0	12.1	1	0	1	0
	Notional	16.5	0	3.3	0	14.5	1.41	0	----	----
[ST] Split or multi-split system, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	0	0	0	0	0	2.81	3.24	2.86	4.33
	Notional	0	0	0	0	0	2.78	4.63	----	----
[ST] Central heating using air distribution, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	0	0	0	0	15.5	0.95	0	1	0
	Notional	0	0	0	0	6.6	1.41	0	----	----
[ST] Variable refrigerant flow, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	12.9	109.5	0.7	4.1	7	5.02	7.51	4.83	10.87
	Notional	1.7	113.3	0.2	6.8	10.6	2.78	4.63	----	----
[ST] Variable refrigerant flow, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	0.4	315.1	0	11.7	6.7	5.03	7.49	4.83	10.87
	Notional	0.2	322.3	0	19.3	11.6	2.78	4.63	----	----
[ST] Variable refrigerant flow, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	19.4	58.6	1.1	2.2	35.1	5.06	7.46	4.83	10.87
	Notional	11.7	71.1	1.2	4.3	18.6	2.78	4.63	----	----
[ST] Variable refrigerant flow, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	3.4	240.3	0.3	22.3	6.9	2.97	2.99	2.86	4.33
	Notional	0.4	286	0	17.2	12.3	2.78	4.63	----	----
[ST] Variable refrigerant flow, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	70.8	79.7	3.9	3.6	6.6	5.02	6.14	4.85	8.85
	Notional	18.5	150.8	1.8	9	14.2	2.78	4.63	----	----
[ST] Variable refrigerant flow, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	31.7	176.6	1.8	8	6.6	5.02	6.13	4.85	8.85
	Notional	7.8	243.4	0.8	14.6	13.1	2.78	4.63	----	----
[ST] Variable refrigerant flow, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	0	476.9	0	99.2	6.3	1.96	1.33	2	2
	Notional	0	543.8	0	32.6	12	2.78	4.63	----	----
[ST] Central heating using air distribution, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	13.8	0	4	0	6.5	0.96	0	1	0
	Notional	5.5	0	1.1	0	7.1	1.41	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