

Project name

Harrodian School. New Sports Hall.

As designed

Date: Wed Sep 02 12:31:31 2020

Administrative information

Building Details

Address: Harrodian School, Lonsdale Road, Barnes,
London, SW13

Certification tool

Calculation engine: SBEM

Calculation engine version: v5.6.a.1

Interface to calculation engine: DesignBuilder SBEM

Interface to calculation engine version: v6.1.0

BRUKL compliance check version: v5.6.a.1

Owner Details

Name:

Telephone number:

Address: , ,

Certifier details

Name: Mr Sean Mills

Telephone number: 01202 280062

Address: Build Energy Ltd The Old Stable Block Quay Rd,
Christchurch Dorset, BH23 1BU

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

| | |
|--|---------------------|
| CO ₂ emission rate from the notional building, kgCO ₂ /m ² .annum | 18.4 |
| Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum | 18.4 |
| Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum | 15.4 |
| Are emissions from the building less than or equal to the target? | BER =< TER |
| Are as built details the same as used in the BER calculations? | Separate submission |

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

Values which do not achieve the standards in the Non-Domestic Building Services Compliance Guide and Part L are displayed in red.

Building fabric

| Element | U _a -Limit | U _a -Calc | U _i -Calc | Surface where the maximum value occurs* |
|--|-----------------------|---|----------------------|--|
| Wall** | 0.35 | 0.18 | 0.18 | 0 Basement - Weights Gym_W_8 |
| Floor | 0.25 | 0.11 | 0.13 | 0 Basement - Male Changing_S_3 |
| Roof | 0.25 | 0.13 | 0.13 | 0 Basement - Hall_R_28 |
| Windows***, roof windows, and rooflights | 2.2 | 1.44 | 1.44 | 0 Basement - Hall_G_14 |
| Personnel doors | 2.2 | 1.82 | 1.82 | 1 Ground Floor - Corridor Stairs_D_7 |
| Vehicle access & similar large doors | 1.5 | - | - | "No external vehicle access doors" |
| High usage entrance doors | 3.5 | - | - | "No external high usage entrance doors" |
| 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 |

Building services

The standard values listed below are minimum values for efficiencies and maximum values for SFPs. Refer to the Non-Domestic Building Services Compliance Guide for details.

| | |
|--|------|
| 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- Clean Electric Air Con HVAC

| | Heating efficiency | Cooling efficiency | Radiant efficiency | SFP [W/(l/s)] | HR efficiency |
|---|--------------------|--------------------|--------------------|---------------|---------------|
| This system | 2 | 3.2 | - | - | - |
| 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 | | | | | YES |
| * Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards. | | | | | |

2- Clean Electric ASHP HVAC

| | Heating efficiency | Cooling efficiency | Radiant efficiency | SFP [W/(l/s)] | HR efficiency |
|---|--------------------|--------------------|--------------------|---------------|---------------|
| This system | 5.5 | - | - | - | - |
| 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 | | | | | YES |
| * Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards. | | | | | |

1- Project DHW

| | Water heating efficiency | Storage loss factor [kWh/litre per day] |
|-----------------------|-----------------------------------|---|
| This building | Hot water provided by HVAC system | 0.143 |
| Standard value | N/A | N/A |

Local mechanical ventilation, exhaust, and terminal units

| ID | System type in Non-domestic Building Services Compliance Guide |
|----|---|
| A | Local supply or extract ventilation units serving a single area |
| 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 supply and extract ventilation units serving a single room or zone with heating and heat recovery |
| E | Local supply and extract ventilation system serving a single area with heating and heat recovery |
| F | Other local ventilation units |
| G | Fan-assisted terminal VAV unit |
| H | Fan coil units |
| I | Zonal extract system where the fan is remote from the zone with grease filter |

| Zone name | ID of system type | SFP [W/(l/s)] | | | | | | | | | HR efficiency | |
|------------------------------|-----------------------|---------------|-----|-----|-----|-----|-----|-----|-----|---|---------------|----------|
| | | A | B | C | D | E | F | G | H | I | Zone | Standard |
| | Standard value | 0.3 | 1.1 | 0.5 | 1.9 | 1.6 | 0.5 | 1.1 | 0.5 | 1 | | |
| 0 Basement - Weights Gym | | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 0 Basement - WC | | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 0 Basement - WC | | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 0 Basement - Corridor Stairs | | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 0 Basement - Store | | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 0 Basement - Store | | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 0 Basement - Plant | | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 0 Basement - Corridor Stairs | | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |

| Zone name | SFP [W/(l/s)] | | | | | | | | | HR efficiency | |
|---|-------------------|-----|-----|-----|-----|-----|-----|-----|---|---------------|----------|
| | ID of system type | A | B | C | D | E | F | G | H | | |
| Standard value | 0.3 | 1.1 | 0.5 | 1.9 | 1.6 | 0.5 | 1.1 | 0.5 | 1 | Zone | Standard |
| 0 Basement - Corridor Lift | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 0 Basement - WC | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 0 Basement - Store | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 0 Basement - Corridor | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 0 Basement - Male Changing | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 0 Basement - Male Changing | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 0 Basement - Store | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 0 Basement - Female Changing | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 0 Basement - Female Changing | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 0 Basement - Corridor | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 0 Basement - Corridor Stairs | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 0 Basement - WC | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 0 Basement - Store | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - Plant | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - Corridor Stairs | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - Corridor Lift | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - Plant Store | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - Changing | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - Changing | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - WC | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - Male Changing | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - Store | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - WC | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - Male Changing | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - WC | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - Female Changing | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - WC | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - Female Changing | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - Corridor Stairs | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - Plant Store | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - Corridor Stairs | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - Store | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 1 Ground Floor - Plant Store (Largest)- | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 2 First Floor 2 - Corridor | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 2 First Floor - Office | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 2 First Floor - Office | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 2 First Floor - Teaching | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 2 First Floor - Teaching | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 2 First Floor - Corridor Stairs | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 2 First Floor - IT | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 2 First Floor - Corridor | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 2 First Floor - Corridor Stairs | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |
| 2 First Floor - Corridor Lift | - | - | - | 0.5 | - | - | - | - | - | 0.65 | 0.5 |

| Zone name | SFP [W/(l/s)] | | | | | | | | | HR efficiency | | |
|-----------------------------|-------------------|-----|-----|-----|-----|-----|-----|-----|---|---------------|------|----------|
| | ID of system type | A | B | C | D | E | F | G | H | I | Zone | Standard |
| Standard value | 0.3 | 1.1 | 0.5 | 1.9 | 1.6 | 0.5 | 1.1 | 0.5 | 1 | | | |
| 2 First Floor - Gym | - | - | - | 0.5 | - | - | - | - | - | - | 0.65 | 0.5 |
| 2 First Floor - WC | - | - | - | 0.5 | - | - | - | - | - | - | 0.65 | 0.5 |
| 2 First Floor - Changing | - | - | - | 0.5 | - | - | - | - | - | - | 0.65 | 0.5 |
| 2 First Floor - Store | - | - | - | 0.5 | - | - | - | - | - | - | 0.65 | 0.5 |
| 2 First Floor - Plant | - | - | - | 0.5 | - | - | - | - | - | - | 0.65 | 0.5 |
| 2 First Floor - Core Stairs | - | - | - | 0.5 | - | - | - | - | - | - | 0.65 | 0.5 |
| 2 First Floor - WC | - | - | - | 0.5 | - | - | - | - | - | - | 0.65 | 0.5 |
| 2 First Floor - Office | - | - | - | 0.5 | - | - | - | - | - | - | 0.65 | 0.5 |
| 2 First Floor - Office | - | - | - | 0.5 | - | - | - | - | - | - | 0.65 | 0.5 |
| 2 First Floor - Office | - | - | - | 0.5 | - | - | - | - | - | - | 0.65 | 0.5 |

| General lighting and display lighting | | Luminous efficacy [lm/W] | | | General lighting [W] |
|---------------------------------------|----------------|--------------------------|------|--------------|----------------------|
| Zone name | Standard value | Luminaire | Lamp | Display lamp | |
| | | 60 | 60 | 22 | |
| 0 Basement - Weights Gym | | - | 80 | - | 134 |
| 0 Basement - WC | | - | 80 | - | 74 |
| 0 Basement - WC | | - | 80 | - | 111 |
| 0 Basement - Corridor Stairs | | - | 80 | - | 30 |
| 0 Basement - Store | | 80 | - | - | 65 |
| 0 Basement - Hall | | - | 80 | - | 7295 |
| 0 Basement - Store | | 80 | - | - | 45 |
| 0 Basement - Plant | | 80 | - | - | 7 |
| 0 Basement - Corridor Stairs | | - | 80 | - | 32 |
| 0 Basement - Corridor Lift | | - | 80 | - | 17 |
| 0 Basement - WC | | - | 80 | - | 69 |
| 0 Basement - Store | | 80 | - | - | 74 |
| 0 Basement - Corridor | | - | 80 | - | 67 |
| 0 Basement - Male Changing | | 80 | - | - | 345 |
| 0 Basement - Male Changing | | 80 | - | - | 377 |
| 0 Basement - Store | | 80 | - | - | 24 |
| 0 Basement - Female Changing | | 80 | - | - | 406 |
| 0 Basement - Female Changing | | 80 | - | - | 444 |
| 0 Basement - Corridor | | - | 80 | - | 66 |
| 0 Basement - Corridor Stairs | | - | 80 | - | 32 |
| 0 Basement - WC | | - | 80 | - | 90 |
| 0 Basement - Store | | 80 | - | - | 45 |
| 1 Ground Floor - Plant | | 80 | - | - | 8 |
| 1 Ground Floor - Corridor Stairs | | - | 80 | - | 34 |
| 1 Ground Floor - Corridor Lift | | - | 80 | - | 20 |
| 1 Ground Floor - Plant Store | | 80 | - | - | 13 |
| 1 Ground Floor - Changing | | 80 | - | - | 267 |
| 1 Ground Floor - Changing | | 80 | - | - | 292 |
| 1 Ground Floor - WC | | - | 80 | - | 82 |

| General lighting and display lighting | | Luminous efficacy [lm/W] | | | General lighting [W] |
|--|----------------|--------------------------|------|--------------|----------------------|
| Zone name | Standard value | Luminaire | Lamp | Display lamp | |
| | | 60 | 60 | 22 | |
| 1 Ground Floor - Male Changing | | 80 | - | - | 215 |
| 1 Ground Floor - Store | | 80 | - | - | 26 |
| 1 Ground Floor - WC | | - | 80 | - | 68 |
| 1 Ground Floor - Male Changing | | 80 | - | - | 180 |
| 1 Ground Floor - WC | | - | 80 | - | 82 |
| 1 Ground Floor - Female Changing | | 80 | - | - | 219 |
| 1 Ground Floor - WC | | - | 80 | - | 100 |
| 1 Ground Floor - Female Changing | | 80 | - | - | 219 |
| 1 Ground Floor - Corridor Stairs | | - | 80 | - | 44 |
| 1 Ground Floor - Plant Store | | 80 | - | - | 19 |
| 1 Ground Floor - Corridor Stairs | | - | 80 | - | 33 |
| 1 Ground Floor - Store | | 80 | - | - | 17 |
| 1 Ground Floor - Plant Store (Largest) | | 80 | - | - | 112 |
| 2 First Floor 2 - Corridor | | - | 80 | - | 727 |
| 2 First Floor - Office | | 80 | - | - | 253 |
| 2 First Floor - Office | | 80 | - | - | 210 |
| 2 First Floor - Teaching | | 80 | - | - | 389 |
| 2 First Floor - Teaching | | 80 | - | - | 358 |
| 2 First Floor - Corridor Stairs | | - | 80 | - | 44 |
| 2 First Floor - IT | | 80 | - | - | 41 |
| 2 First Floor - Corridor | | - | 80 | - | 180 |
| 2 First Floor - Corridor Stairs | | - | 80 | - | 42 |
| 2 First Floor - Corridor Lift | | - | 80 | - | 27 |
| 2 First Floor - Gym | | - | 80 | - | 207 |
| 2 First Floor - WC | | - | 80 | - | 142 |
| 2 First Floor - Changing | | 80 | - | - | 304 |
| 2 First Floor - Store | | 80 | - | - | 34 |
| 2 First Floor - Plant | | 80 | - | - | 8 |
| 2 First Floor - Core Stairs | | - | 80 | - | 41 |
| 2 First Floor - WC | | - | 80 | - | 100 |
| 2 First Floor - Office | | 80 | - | - | 263 |
| 2 First Floor - Office | | 80 | - | - | 166 |
| 2 First Floor - Office | | 80 | - | - | 164 |

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? |
|------------------------------|--------------------------------|-----------------------|
| 0 Basement - Weights Gym | N/A | N/A |
| 0 Basement - WC | N/A | N/A |
| 0 Basement - Hall | YES (+27.5%) | NO |
| 0 Basement - Male Changing | N/A | N/A |
| 0 Basement - Male Changing | N/A | N/A |
| 0 Basement - Female Changing | N/A | N/A |
| 0 Basement - Female Changing | N/A | N/A |

| Zone | Solar gain limit exceeded? (%) | Internal blinds used? |
|----------------------------------|--------------------------------|-----------------------|
| 1 Ground Floor - Changing | N/A | N/A |
| 1 Ground Floor - Changing | NO (-86.2%) | NO |
| 1 Ground Floor - Male Changing | NO (-74.4%) | NO |
| 1 Ground Floor - Male Changing | N/A | N/A |
| 1 Ground Floor - Female Changing | NO (-74.8%) | NO |
| 1 Ground Floor - Female Changing | NO (-74.8%) | NO |
| 2 First Floor - Office | N/A | N/A |
| 2 First Floor - Office | N/A | N/A |
| 2 First Floor - Teaching | N/A | N/A |
| 2 First Floor - Teaching | N/A | N/A |
| 2 First Floor - Gym | N/A | N/A |
| 2 First Floor - Changing | N/A | N/A |
| 2 First Floor - Office | N/A | N/A |
| 2 First Floor - Office | N/A | N/A |
| 2 First Floor - Office | N/A | N/A |

Criterion 4: The performance of the building, as built, should be consistent with the calculated 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] | 3298.3 | 3298.3 |
| External area [m ²] | 6624.5 | 6624.5 |
| Weather | LON | LON |
| Infiltration [m ³ /hm ² @ 50Pa] | 5 | 6 |
| Average conductance [W/K] | 1796.94 | 2241.29 |
| Average U-value [W/m ² K] | 0.27 | 0.34 |
| Alpha value* [%] | 13.58 | 34.25 |

* 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 |
| 2 | B1 Offices and Workshop businesses |
| 10 | B2 to B7 General Industrial and Special Industrial Groups |
| | B8 Storage or Distribution |
| | C1 Hotels |
| 4 | C2 Residential Institutions: Hospitals and Care Homes |
| | C2 Residential Institutions: Residential schools |
| | C2 Residential Institutions: Universities and colleges |
| | C2A Secure Residential Institutions |
| | Residential spaces |
| | D1 Non-residential Institutions: Community/Day Centre |
| | D1 Non-residential Institutions: Libraries, Museums, and Galleries |
| | D1 Non-residential Institutions: Education |
| | D1 Non-residential Institutions: Primary Health Care Building |
| | D1 Non-residential Institutions: Crown and County Courts |
| 84 | 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 | 1.88 | 11.16 |
| Cooling | 0.85 | 0.2 |
| Auxiliary | 5.55 | 5.35 |
| Lighting | 19.26 | 19.26 |
| Hot water | 2.09 | 0.37 |
| Equipment* | 27.27 | 27.27 |
| TOTAL** | 29.64 | 36.35 |

* 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 |

Energy & CO₂ Emissions Summary

| | Actual | Notional |
|---|--------|----------|
| Heating + cooling demand [MJ/m ²] | 282.49 | 248.97 |
| Primary energy* [kWh/m ²] | 91 | 108.8 |
| Total emissions [kg/m ²] | 15.4 | 18.4 |

* 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] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity | | | | | | | | | |
| Actual | 25.2 | 300.8 | 3.6 | 55.9 | 15.5 | 1.96 | 1.5 | 2 | 2 |
| Notional | 20.9 | 172.7 | 2.4 | 13.3 | 22.3 | 2.43 | 3.6 | ---- | ---- |
| [ST] Central heating using water: floor heating, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Natural Gas | | | | | | | | | |
| Actual | 34.5 | 247.4 | 1.9 | 0 | 5.4 | 5.17 | 0 | 5.5 | 0 |
| Notional | 98.8 | 151 | 11.3 | 0 | 5.1 | 2.43 | 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 Building Control Body is advised to give particular attention to items whose specifications are better than typically expected.

Building fabric

| Element | U _{i-Typ} | U _{i-Min} | Surface where the minimum value occurs* |
|---|--------------------|---|---|
| Wall | 0.23 | 0.18 | 0 Basement - Weights Gym_W_8 |
| Floor | 0.2 | 0.06 | 0 Basement - Corridor_S_3 |
| Roof | 0.15 | 0.13 | 0 Basement - Hall_R_28 |
| Windows, roof windows, and rooflights | 1.5 | 1.44 | 0 Basement - Hall_G_14 |
| Personnel doors | 1.5 | 1.82 | 1 Ground Floor - Corridor Stairs_D_7 |
| Vehicle access & similar large doors | 1.5 | - | "No external vehicle access doors" |
| High usage entrance doors | 1.5 | - | "No external high usage entrance doors" |
| 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 |