

Crown Place, Nottingham
As Built SBEM and Commercial EPC
Carbon Emissions Calculation – Part L2a

For

FP Hurley
24th November 2023

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Melin Consultants are accredited to provide a range of calculation, assessment and testing services. They are members of CIBSE Low Carbon Consultants.

Melin Consultants fully check all work prior to completion and a robust audit trail exists to demonstrate accountability.

All information within this document is based on evidence provided in the form of drawings and specifications.

CPD (Continual Professional Development) records are kept and all technical staff are required to complete a minimum 20 hours per year in training activities.

Low Carbon Consultants have the expertise and necessary qualifications to offer advice in a professional capacity on matters relating to Part L of the Building Regulations and sustainability within the construction sector.

This document contains the following information:

- As Built Building Regulations Reports, Commercial EPC, Recommendations Report

Project Ref: 607407

Report Date: 24th November 2023

Report author: Darren Baker

Function: Senior Consultant

Authorised by: Jamie Best

Function: Director

Energy performance certificate (EPC)

| | | |
|--|-----------------------------|---|
| Crown Place St Annes Well Road Nottingham NG3 3FY | Energy rating <h1>B</h1> | Valid until: 23 November 2033 <hr/> Certificate number: 2533-4041-5975-8338-5454 |
|--|-----------------------------|---|

| | |
|------------------|---|
| Property type | C2 Residential Institutions - Universities and colleges |
| Total floor area | 14,997 square metres |

Rules on letting this property

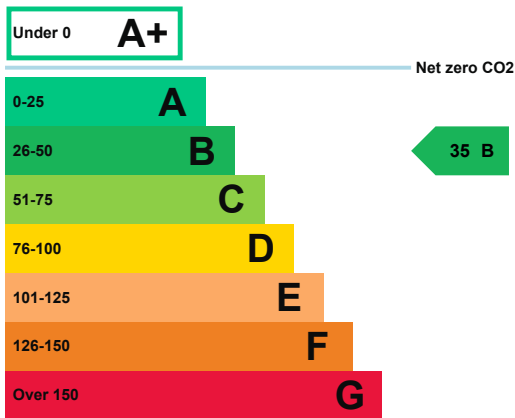
Properties can be let if they have an energy rating from A+ to E.

Energy rating and score

This property's current energy rating is B.

Properties get a rating from A+ (best) to G (worst) and a score.

The better the rating and score, the lower your property's carbon emissions are likely to be.



How this property compares to others

Properties similar to this one could have ratings:

If newly built

35 B

If typical of the existing stock

102 E

Breakdown of this property's energy performance

| | |
|---|---------------------------------|
| Main heating fuel | Natural Gas |
| Building environment | Heating and Natural Ventilation |
| Assessment level | 4 |
| Building emission rate (kgCO ₂ /m ² per year) | 53.54 |
| Primary energy use (kWh/m ² per year) | 312 |

Recommendation report

Guidance on improving the energy performance of this property can be found in the [recommendation report \(/energy-certificate/2294-4708-5536-9028-2253\)](#).

Who to contact about this certificate

Contacting the assessor

If you're unhappy about your property's energy assessment or certificate, you can complain to the assessor who created it.

| | |
|-----------------|--|
| Assessor's name | Darren Baker |
| Telephone | 0845 094 1593 |
| Email | darren@melinconsultants.co.uk |

Contacting the accreditation scheme

If you're still unhappy after contacting the assessor, you should contact the assessor's accreditation scheme.

| | |
|----------------------|--|
| Accreditation scheme | CIBSE Certification Limited |
| Assessor's ID | LCEA125299 |
| Telephone | 020 8772 3649 |
| Email | epc@cibsecertification.org |

About this assessment

| | |
|------------------------|---|
| Employer | Melin Consultants |
| Employer address | The Beacon, Llanelli, SA14 8LQ |
| Assessor's declaration | The assessor is not related to the owner of the property. |
| Date of assessment | 24 November 2023 |
| Date of certificate | 24 November 2023 |

Project name

Crown Student Living - As built

As built

Date: Fri Nov 24 11:36:13 2023

Administrative information

Building Details

Address: Crown Place, St Annes Well Road, Nottingham,
NG3 3FY

Certification tool

Calculation engine: SBEM

Calculation engine version: v5.6.b.0

Interface to calculation engine: Virtual Environment

Interface to calculation engine version: v7.0.22

BRUKL compliance check version: v5.6.b.0

Certifier details

Name: Darren Baker

Telephone number: 0845 094 1593

Address: Melin COnsultants, The Beacon, Llanelli, SA14
8LQCriterion 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 | 54 |
| Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum | 54 |
| Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum | 53.5 |
| 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 | "RM000000_W4" |
| Floor | 0.25 | 0.13 | 0.13 | "RM000000_F" |
| Roof | 0.25 | 0.13 | 0.13 | "RM000000_C" |
| Windows***, roof windows, and rooflights | 2.2 | 1.4 | 1.4 | "RM000000_W4_O0" |
| Personnel doors | 2.2 | 3.2 | 3.2 | "RM000017_W4_O0" |
| 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 | 4.98 |

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 | NO |
| Whole building electric power factor achieved by power factor correction | <0.9 |

1- Panel Heaters

| | Heating efficiency | Cooling efficiency | Radiant efficiency | SFP [W/(l/s)] | HR efficiency |
|--|--------------------|--------------------|--------------------|---------------|---------------|
| This system | 1 | - | - | - | - |
| 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 | | | | | NO |

2- Communal areas

| | Heating efficiency | Cooling efficiency | Radiant efficiency | SFP [W/(l/s)] | HR efficiency |
|---|--------------------|--------------------|--------------------|---------------|---------------|
| This system | 4.3 | 4.6 | - | - | - |
| Standard value | 2.5* | 2.6 | 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. For types <=12 kW output, refer to EN 14825 for limiting standards. | | | | | |

3- Hot Water with ASHP pre heat - Option 4

| | Heating efficiency | Cooling efficiency | Radiant efficiency | SFP [W/(l/s)] | HR efficiency |
|---|--------------------|--------------------|--------------------|---------------|---------------|
| This system | 1.04 | - | - | - | - |
| Standard value | 0.91* | 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 gas single boiler systems <=2 MW output. For single boiler systems >2 MW or multi-boiler systems, (overall) limiting efficiency is 0.86. For any individual boiler in a multi-boiler system, limiting efficiency is 0.82. | | | | | |

1- SYST0006-DHW

| | Water heating efficiency | Storage loss factor [kWh/litre per day] |
|-----------------------|-----------------------------------|---|
| This building | Hot water provided by HVAC system | 0.01 |
| Standard value | N/A | N/A |

1- CCHP Generator

| | CHPQA quality index | CHP electrical efficiency |
|-----------------------|---------------------|---------------------------|
| This building | Not provided | 0.3 |
| Standard value | 105 | 0.2 |

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 | 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 | | | |
| Bedroom 112G - Apartment 15 | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom 112F - Apartment 15 | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom 112E - Apartment 15 | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom 1620 | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom 1619 | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom 1618 | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom 1617 | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom 1616 | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom 111F | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom 111G | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom 1564 | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom 1383 | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom 1565 | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom 1568 | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom 1567 | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom 1566 | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Apartment 04 LKD | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| LKD 1589 | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms 004 | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| LKD 004 | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| LKD 1615 | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studio | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studio | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |

| 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 |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studio | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studio | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studio | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studio | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |

| 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 |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studio | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studio | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studio | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studio | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | N/A |

| 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 | | |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studio | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studio | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studio | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studio | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| LKD | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedrooms | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Studios | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |
| Bedroom 112H - Apartment 15 | 0.3 | - | - | - | - | - | - | - | - | - | - | N/A |

| 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 | | |
| Studio 01 | | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Studio 07 | | 0.3 | - | - | - | - | - | - | - | - | - | N/A |
| Social Space | | - | - | - | 1.6 | - | - | - | - | - | 0.7 | 0.5 |

| General lighting and display lighting | | Luminous efficacy [lm/W] | | | General lighting [W] |
|---------------------------------------|----------------|--------------------------|------|--------------|----------------------|
| Zone name | | Luminaire | Lamp | Display lamp | |
| | Standard value | 60 | 60 | 22 | |
| Bedroom 112G - Apartment 15 | | - | 113 | - | 29 |
| Bedroom 112F - Apartment 15 | | - | 113 | - | 28 |
| Bedroom 112E - Apartment 15 | | - | 113 | - | 28 |
| Bedroom 1620 | | - | 113 | - | 33 |
| Bedroom 1619 | | - | 113 | - | 27 |
| Bedroom 1618 | | - | 113 | - | 28 |
| Bedroom 1617 | | - | 113 | - | 27 |
| Bedroom 1616 | | - | 113 | - | 27 |
| Bedroom 111F | | - | 113 | - | 31 |
| Bedroom 111G | | - | 113 | - | 29 |
| Bedroom 1564 | | - | 113 | - | 25 |
| Bedroom 1383 | | - | 113 | - | 26 |
| Bedroom 1565 | | - | 113 | - | 26 |
| Bedroom 1568 | | - | 113 | - | 24 |
| Bedroom 1567 | | - | 113 | - | 26 |
| Bedroom 1566 | | - | 113 | - | 27 |
| Bedrooms | | - | 113 | - | 90 |
| Circulation | | - | 132 | - | 42 |
| LKD | | - | 113 | - | 386 |
| Bike Store | | 100 | - | - | 95 |
| Plant Room | | 103 | - | - | 376 |
| Apartment 04 LKD | | - | 113 | - | 330 |
| LKD 1589 | | - | 113 | - | 403 |
| Bedrooms | | - | 113 | - | 91 |
| Bedrooms 004 | | - | 100 | - | 122 |
| LKD 004 | | - | 113 | - | 353 |
| Circulation | | - | 132 | - | 81 |
| Management | | 147 | - | - | 203 |
| Circulation | | - | 132 | - | 56 |
| LKD 1615 | | - | 113 | - | 393 |
| Bedrooms | | - | 113 | - | 53 |
| Bedrooms | | - | 113 | - | 40 |
| LKD | | - | 113 | - | 283 |
| Bedrooms | | - | 113 | - | 103 |
| Bedrooms | | - | 113 | - | 85 |
| Studios | | - | 113 | - | 70 |

| General lighting and display lighting | | Luminous efficacy [lm/W] | | | |
|---------------------------------------|----------------|--------------------------|------|--------------|----------------------|
| Zone name | | Luminaire | Lamp | Display lamp | General lighting [W] |
| | Standard value | 60 | 60 | 22 | |
| Studio | | - | 113 | - | 36 |
| Studios | | - | 113 | - | 185 |
| Bedroom | | - | 113 | - | 31 |
| Studio | | - | 113 | - | 29 |
| Bedrooms | | - | 113 | - | 125 |
| Studios | | - | 113 | - | 131 |
| Studios | | - | 113 | - | 87 |
| Corridor | | - | 132 | - | 88 |
| Bedrooms | | - | 113 | - | 101 |
| Bedrooms | | - | 113 | - | 86 |
| Bedroom | | - | 113 | - | 101 |
| Bedrooms | | - | 113 | - | 85 |
| Bedrooms | | - | 113 | - | 100 |
| LKD | | - | 113 | - | 230 |
| LKD | | - | 113 | - | 357 |
| LKD | | - | 113 | - | 134 |
| LKD | | - | 113 | - | 273 |
| LKD | | - | 113 | - | 275 |
| Bedrooms | | - | 113 | - | 53 |
| Bedrooms | | - | 113 | - | 40 |
| LKD | | - | 113 | - | 283 |
| Bedrooms | | - | 113 | - | 103 |
| Bedrooms | | - | 113 | - | 85 |
| Studios | | - | 113 | - | 70 |
| Studio | | - | 113 | - | 36 |
| Studios | | - | 113 | - | 185 |
| Bedroom | | - | 113 | - | 31 |
| Studio | | - | 113 | - | 29 |
| Bedrooms | | - | 113 | - | 125 |
| Studios | | - | 113 | - | 131 |
| Studios | | - | 113 | - | 87 |
| Corridor | | - | 132 | - | 88 |
| Bedrooms | | - | 113 | - | 101 |
| Bedrooms | | - | 113 | - | 86 |
| Bedroom | | - | 113 | - | 101 |
| Bedrooms | | - | 113 | - | 85 |
| Bedrooms | | - | 113 | - | 100 |
| LKD | | - | 113 | - | 230 |
| LKD | | - | 113 | - | 357 |
| LKD | | - | 113 | - | 134 |
| LKD | | - | 113 | - | 273 |
| LKD | | - | 113 | - | 275 |
| Bedrooms | | - | 113 | - | 51 |

| General lighting and display lighting | | Luminous efficacy [lm/W] | | | |
|---------------------------------------|-----------------------|--------------------------|------|--------------|----------------------|
| Zone name | | Luminaire | Lamp | Display lamp | General lighting [W] |
| | Standard value | 60 | 60 | 22 | |
| Bedrooms | | - | 113 | - | 38 |
| LKD | | - | 113 | - | 257 |
| Bedrooms | | - | 113 | - | 95 |
| Bedrooms | | - | 113 | - | 82 |
| Studios | | - | 113 | - | 67 |
| Studio | | - | 113 | - | 33 |
| Studios | | - | 113 | - | 178 |
| Bedroom | | - | 113 | - | 29 |
| Studio | | - | 113 | - | 26 |
| Studios | | - | 113 | - | 103 |
| LKD | | - | 113 | - | 325 |
| Studios | | - | 113 | - | 97 |
| Corridor | | - | 132 | - | 69 |
| Studios | | - | 113 | - | 69 |
| Bedrooms | | - | 113 | - | 53 |
| Bedrooms | | - | 113 | - | 40 |
| LKD | | - | 113 | - | 283 |
| Bedrooms | | - | 113 | - | 103 |
| Bedrooms | | - | 113 | - | 85 |
| Studios | | - | 113 | - | 70 |
| Studio | | - | 113 | - | 36 |
| Studios | | - | 113 | - | 185 |
| Bedroom | | - | 113 | - | 31 |
| Studio | | - | 113 | - | 29 |
| Bedrooms | | - | 113 | - | 125 |
| Studios | | - | 113 | - | 131 |
| Studios | | - | 113 | - | 87 |
| Corridor | | - | 132 | - | 88 |
| Bedrooms | | - | 113 | - | 101 |
| Bedrooms | | - | 113 | - | 86 |
| Bedroom | | - | 113 | - | 101 |
| Bedrooms | | - | 113 | - | 85 |
| Bedrooms | | - | 113 | - | 100 |
| LKD | | - | 113 | - | 230 |
| LKD | | - | 113 | - | 357 |
| LKD | | - | 113 | - | 134 |
| LKD | | - | 113 | - | 273 |
| LKD | | - | 113 | - | 275 |
| Bedrooms | | - | 113 | - | 53 |
| Bedrooms | | - | 113 | - | 40 |
| LKD | | - | 113 | - | 283 |
| Bedrooms | | - | 113 | - | 103 |
| Bedrooms | | - | 113 | - | 85 |

| General lighting and display lighting | | Luminous efficacy [lm/W] | | | |
|---------------------------------------|----------------|--------------------------|------|--------------|----------------------|
| Zone name | | Luminaire | Lamp | Display lamp | General lighting [W] |
| | Standard value | 60 | 60 | 22 | |
| Studios | | - | 113 | - | 70 |
| Studio | | - | 113 | - | 36 |
| Studios | | - | 113 | - | 185 |
| Bedroom | | - | 113 | - | 31 |
| Studio | | - | 113 | - | 28 |
| Bedrooms | | - | 113 | - | 125 |
| Bedrooms | | - | 113 | - | 101 |
| Bedroom | | - | 113 | - | 101 |
| LKD | | - | 113 | - | 211 |
| LKD | | - | 113 | - | 357 |
| LKD | | - | 113 | - | 134 |
| LKD | | - | 113 | - | 273 |
| LKD | | - | 113 | - | 275 |
| Bedrooms | | - | 113 | - | 77 |
| Bedrooms | | - | 113 | - | 56 |
| Studios | | - | 113 | - | 101 |
| Bedrooms | | - | 113 | - | 86 |
| LKD | | - | 113 | - | 230 |
| Studio | | - | 113 | - | 33 |
| Studios | | - | 113 | - | 178 |
| Studios | | - | 113 | - | 69 |
| Bedrooms | | - | 113 | - | 53 |
| Bedrooms | | - | 113 | - | 40 |
| LKD | | - | 113 | - | 283 |
| Bedrooms | | - | 113 | - | 103 |
| Bedrooms | | - | 113 | - | 85 |
| Studios | | - | 113 | - | 70 |
| Studio | | - | 113 | - | 36 |
| Studios | | - | 113 | - | 185 |
| Bedroom | | - | 113 | - | 31 |
| Studio | | - | 113 | - | 29 |
| Bedrooms | | - | 113 | - | 125 |
| LKD | | - | 113 | - | 357 |
| LKD | | - | 113 | - | 275 |
| Bedrooms | | - | 113 | - | 77 |
| Bedrooms | | - | 113 | - | 56 |
| Studios | | - | 113 | - | 101 |
| LKD | | - | 113 | - | 230 |
| Bedroom | | - | 113 | - | 220 |
| Bedrooms | | - | 113 | - | 83 |
| Corridor | | - | 132 | - | 508 |
| Bedrooms | | - | 113 | - | 83 |
| Corridor | | - | 132 | - | 512 |

| General lighting and display lighting | | Luminous efficacy [lm/W] | | | |
|---------------------------------------|-----------------------|--------------------------|------|--------------|----------------------|
| Zone name | | Luminaire | Lamp | Display lamp | General lighting [W] |
| | Standard value | 60 | 60 | 22 | |
| Corridor | | - | 132 | - | 512 |
| Corridor | | - | 132 | - | 512 |
| Bedrooms | | - | 113 | - | 83 |
| Bedrooms | | - | 113 | - | 83 |
| Bedrooms | | - | 113 | - | 83 |
| Studios | | - | 113 | - | 69 |
| Bedroom | | - | 113 | - | 31 |
| Studio | | - | 113 | - | 29 |
| Bedrooms | | - | 113 | - | 125 |
| LKD | | - | 113 | - | 275 |
| Bedrooms | | - | 113 | - | 56 |
| Studios | | - | 113 | - | 97 |
| Bedrooms | | - | 113 | - | 77 |
| LKD | | - | 113 | - | 230 |
| Bedroom | | - | 113 | - | 220 |
| Studios | | - | 113 | - | 101 |
| Corridor | | - | 132 | - | 69 |
| Corridor | | - | 132 | - | 69 |
| Corridor | | - | 132 | - | 402 |
| Corridor | | - | 132 | - | 240 |
| Bedrooms | | - | 113 | - | 97 |
| Bedrooms | | - | 113 | - | 180 |
| Studios | | - | 113 | - | 100 |
| Studios | | - | 113 | - | 203 |
| Bedroom 112H - Apartment 15 | | - | 113 | - | 36 |
| Studio 01 | | - | 113 | - | 35 |
| Studio 07 | | - | 113 | - | 36 |
| Circulation | | - | 132 | - | 414 |
| Circulation | | - | 132 | - | 11 |
| Circulation | | - | 132 | - | 29 |
| Social Space | | 147 | - | - | 1580 |

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? |
|-----------------------------|--------------------------------|-----------------------|
| Bedroom 112G - Apartment 15 | NO (-53.4%) | NO |
| Bedroom 112F - Apartment 15 | NO (-48.4%) | NO |
| Bedroom 112E - Apartment 15 | NO (-45%) | NO |
| Bedroom 1620 | NO (-88.2%) | NO |
| Bedroom 1619 | NO (-45.9%) | NO |
| Bedroom 1618 | NO (-48.8%) | NO |
| Bedroom 1617 | NO (-48.7%) | NO |
| Bedroom 1616 | NO (-44.2%) | NO |
| Bedroom 111F | NO (-84.7%) | NO |

| Zone | Solar gain limit exceeded? (%) | Internal blinds used? |
|--------------|--------------------------------|-----------------------|
| Bedroom 111G | NO (-30.1%) | NO |
| Bedroom 1564 | NO (-34.7%) | NO |
| Bedroom 1383 | NO (-34.3%) | NO |
| Bedroom 1565 | NO (-37%) | NO |
| Bedroom 1568 | YES (+2.1%) | NO |
| Bedroom 1567 | NO (-38.5%) | NO |
| Bedroom 1566 | NO (-40%) | NO |
| Bedrooms | NO (-56.2%) | NO |
| Bedrooms | NO (-70.3%) | NO |
| Bedrooms 004 | NO (-46.7%) | NO |
| Management | NO (-73.5%) | NO |
| Bedrooms | NO (-79.8%) | NO |
| Bedrooms | NO (-72.4%) | NO |
| Bedrooms | NO (-44.4%) | NO |
| Bedrooms | NO (-69.1%) | NO |
| Studios | NO (-57.4%) | NO |
| Studio | NO (-29.9%) | NO |
| Studios | NO (-17%) | NO |
| Bedroom | NO (-44.3%) | NO |
| Studio | NO (-16.2%) | NO |
| Bedrooms | NO (-30.6%) | NO |
| Studios | NO (-51.9%) | NO |
| Studios | NO (-67.2%) | NO |
| Bedrooms | NO (-58.4%) | NO |
| Bedrooms | NO (-70.9%) | NO |
| Bedroom | NO (-30.8%) | NO |
| Bedrooms | NO (-61.2%) | NO |
| Bedrooms | NO (-62.6%) | NO |
| Bedrooms | NO (-79.7%) | NO |
| Bedrooms | NO (-72.4%) | NO |
| Bedrooms | NO (-44.4%) | NO |
| Bedrooms | NO (-69.1%) | NO |
| Studios | NO (-57.4%) | NO |
| Studio | NO (-29.9%) | NO |
| Studios | NO (-17%) | NO |
| Bedroom | NO (-44.3%) | NO |
| Studio | NO (-16.2%) | NO |
| Bedrooms | NO (-30.6%) | NO |
| Studios | NO (-51.9%) | NO |
| Studios | NO (-67.2%) | NO |
| Bedrooms | NO (-58.4%) | NO |
| Bedrooms | NO (-70.9%) | NO |
| Bedroom | NO (-30.8%) | NO |
| Bedrooms | NO (-61.2%) | NO |
| Bedrooms | NO (-62.6%) | NO |
| Bedrooms | NO (-89.9%) | NO |
| Bedrooms | NO (-85.5%) | NO |
| Bedrooms | NO (-80.8%) | NO |
| Bedrooms | NO (-84%) | NO |

| Zone | Solar gain limit exceeded? (%) | Internal blinds used? |
|----------|--------------------------------|-----------------------|
| Studios | NO (-76.5%) | NO |
| Studio | NO (-91.8%) | NO |
| Studios | NO (-64%) | NO |
| Bedroom | NO (-70.7%) | NO |
| Studio | NO (-82.8%) | NO |
| Studios | NO (-80.1%) | NO |
| Studios | NO (-65.8%) | NO |
| Studios | NO (-68.7%) | NO |
| Bedrooms | NO (-79.7%) | NO |
| Bedrooms | NO (-72.4%) | NO |
| Bedrooms | NO (-44.4%) | NO |
| Bedrooms | NO (-69.1%) | NO |
| Studios | NO (-57.4%) | NO |
| Studio | NO (-29.9%) | NO |
| Studios | NO (-17%) | NO |
| Bedroom | NO (-44.3%) | NO |
| Studio | NO (-16.2%) | NO |
| Bedrooms | NO (-30.6%) | NO |
| Studios | NO (-51.9%) | NO |
| Studios | NO (-67.2%) | NO |
| Bedrooms | NO (-58.4%) | NO |
| Bedrooms | NO (-70.9%) | NO |
| Bedroom | NO (-30.8%) | NO |
| Bedrooms | NO (-61.2%) | NO |
| Bedrooms | NO (-62.6%) | NO |
| Bedrooms | NO (-79.7%) | NO |
| Bedrooms | NO (-72.4%) | NO |
| Bedrooms | NO (-44.4%) | NO |
| Bedrooms | NO (-69.1%) | NO |
| Studios | NO (-57.4%) | NO |
| Studio | NO (-29.9%) | NO |
| Studios | NO (-17%) | NO |
| Bedroom | NO (-44.3%) | NO |
| Studio | NO (-60%) | NO |
| Bedrooms | NO (-30.6%) | NO |
| Bedrooms | NO (-58.4%) | NO |
| Bedroom | NO (-30.8%) | NO |
| Bedrooms | NO (-62.6%) | NO |
| Bedrooms | NO (-62.7%) | NO |
| Studios | NO (-39.5%) | NO |
| Bedrooms | NO (-70.9%) | NO |
| Studio | NO (-91.8%) | NO |
| Studios | NO (-64%) | NO |
| Studios | NO (-68.7%) | NO |
| Bedrooms | NO (-79.7%) | NO |
| Bedrooms | NO (-72.4%) | NO |
| Bedrooms | NO (-44.4%) | NO |
| Bedrooms | NO (-69.1%) | NO |
| Studios | NO (-57.4%) | NO |

| Zone | Solar gain limit exceeded? (%) | Internal blinds used? |
|-----------------------------|--------------------------------|-----------------------|
| Studio | NO (-29.9%) | NO |
| Studios | NO (-17%) | NO |
| Bedroom | NO (-44.3%) | NO |
| Studio | NO (-16.2%) | NO |
| Bedrooms | NO (-30.6%) | NO |
| Bedrooms | NO (-62.6%) | NO |
| Bedrooms | NO (-62.7%) | NO |
| Studios | NO (-39.5%) | NO |
| Bedroom | NO (-52.2%) | NO |
| Bedrooms | NO (-73.3%) | NO |
| Bedrooms | NO (-79.5%) | NO |
| Bedrooms | NO (-79.5%) | NO |
| Bedrooms | NO (-79.5%) | NO |
| Bedrooms | NO (-79.6%) | NO |
| Studios | NO (-68.7%) | NO |
| Bedroom | NO (-44.4%) | NO |
| Studio | NO (-16.2%) | NO |
| Bedrooms | NO (-30.6%) | NO |
| Bedrooms | NO (-62.7%) | NO |
| Studios | NO (-65.8%) | NO |
| Bedrooms | NO (-62.6%) | NO |
| Bedroom | NO (-52.2%) | NO |
| Studios | NO (-39.5%) | NO |
| Bedrooms | NO (-88.4%) | NO |
| Bedrooms | NO (-85.3%) | NO |
| Studios | NO (-65.1%) | NO |
| Studios | NO (-27.7%) | NO |
| Bedroom 112H - Apartment 15 | NO (-51%) | NO |
| Studio 01 | NO (-53.9%) | NO |
| Studio 07 | NO (-68.2%) | NO |
| Social Space | YES (+126.4%) | NO |

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? | 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 |
|---|---------|----------|
| Area [m ²] | 14997.3 | 14997.3 |
| External area [m ²] | 16910.6 | 16910.6 |
| Weather | NOT | NOT |
| Infiltration [m ³ /hm ² @ 50Pa] | 5 | 3 |
| Average conductance [W/K] | 4663.28 | 8638.76 |
| Average U-value [W/m ² K] | 0.28 | 0.51 |
| Alpha value* [%] | 27.27 | 16.89 |

* 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 Institutions: Hospitals and Care Homes
C2 Residential Institutions: Residential schools

100 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
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 | 48.26 | 50.36 |
| Cooling | 0.59 | 0.35 |
| Auxiliary | 1.87 | 2.12 |
| Lighting | 3.53 | 10.46 |
| Hot water | 150.53 | 135.47 |
| Equipment* | 23.08 | 23.08 |
| TOTAL** | 188.3 | 198.76 |

* 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 | 1.11 | 0 |
| Wind turbines | 0 | 0 |
| CHP generators | 16.48 | 0 |
| Solar thermal systems | 0 | 0 |

Energy & CO₂ Emissions Summary

| | Actual | Notional |
|---|--------|----------|
| Heating + cooling demand [MJ/m ²] | 216.4 | 255.1 |
| Primary energy* [kWh/m ²] | 311.8 | 272.65 |
| Total emissions [kg/m ²] | 53.5 | 54 |

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

HVAC Systems Performance

| System Type | Heat dem MJ/m ² | Cool dem MJ/m ² | Heat con kWh/m ² | Cool con kWh/m ² | Aux con kWh/m ² | Heat SSEFF | 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 | 143.9 | 68.8 | 50 | 0 | 1.5 | 0.8 | 0 | 1 | 0 |
| Notional | 153.5 | 104.7 | 52.1 | 0 | 2 | 0.82 | 0 | ---- | ---- |
| [ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity | | | | | | | | | |
| Actual | 58.6 | 255.1 | 4.1 | 16.1 | 11.2 | 4.01 | 4.4 | 4.3 | 6.2 |
| Notional | 51.2 | 122.1 | 5.9 | 9.4 | 4.8 | 2.43 | 3.6 | ---- | ---- |

Key to terms

| | |
|--------------------------------|---|
| Heat dem [MJ/m ²] | = Heating energy demand |
| Cool dem [MJ/m ²] | = Cooling energy demand |
| Heat con [kWh/m ²] | = Heating energy consumption |
| Cool con [kWh/m ²] | = Cooling energy consumption |
| Aux con [kWh/m ²] | = 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 | "RM000000_W4" |
| Floor | 0.2 | 0.13 | "RM000000_F" |
| Roof | 0.15 | 0.13 | "RM000000_C" |
| Windows, roof windows, and rooflights | 1.5 | 1.4 | "RM000000_W4_O0" |
| Personnel doors | 1.5 | 3.2 | "RM000017_W4_O0" |
| 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 | 4.98 |