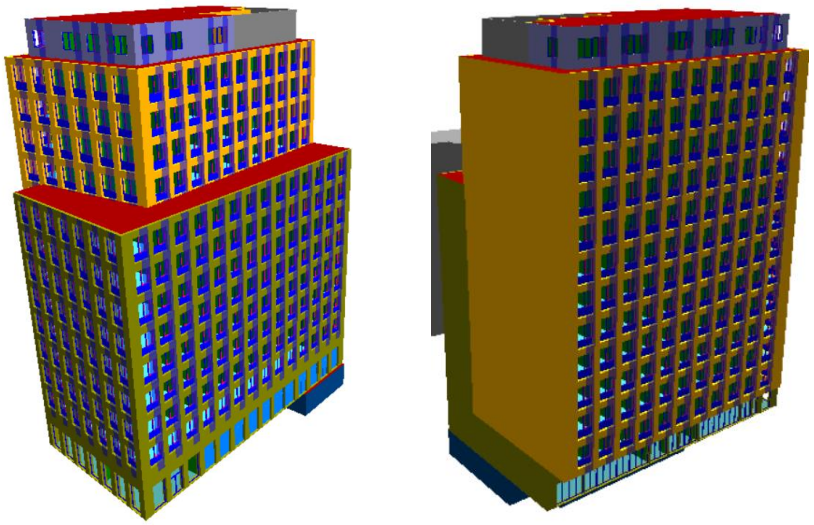
Management
and
Engineering
Services Ltd

GAMECOCK
BOOTH STREET WEST STUDENT ACCOMMODATION
MANCHESTER

PART L2A MODELLING REPORT



Project No:	B2798
Date:	April 2021
Client:	Curlew Alternatives Eighth Property LLP
Document Reference:	BSW-AMES-00-XX-RP-ME-FI40-0001

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PROJECT REVISION SHEET

Suitability	Revision	Details	Comments	Prepared by	Checked by	Issued
S1	P1	First Issue	First Issue	MH/CC	CC/WS	08.04.21
S1	P2	Second Issue	Updated in line with comments.	MH/CC	CC	16.04.21

Introduction

This report sets out the parameters used in the production of the Part L2A 2013 SBEM assessments for the new student accommodation development at the former Gamecock public house, Booth Street West, Manchester.

The project involves the demolition of existing building and structure and redevelopment of site for Purpose Built Student Accommodation (PBSA) uses (Sui Generis use class) comprising bedroom units with ancillary amenity space, a ground floor 'community hub' (proposed for Use Classes F2(b), E(b), E(3), E(f)) associated landscape works and infrastructure.

Project Details

Address:	Booth Street West Manchester M15 6GE
Software:	EDSL Tas v9.5.1
BRUKL compliance check version:	v5.6.b.0
Calendar:	NCM University 2010/2013
Weather file:	Manchester TRY
Planning Class:	C2 Residential Institutions: Universities and colleges

Building Geometry

The building geometry has been based on drawn information produced by SimpsonHaugh and Partners and issued 03/03/21. Updated information has subsequently issued 01/04/21, however the analysis model had already been developed at his point, so will need to undergo updates to account for this most recently issued drawing pack although the changes are minimal and we expect only marginal changes to any results.

The massing of the adjacent Cooper House has also been included in the assessment model as accurately as possible based on the limited geometric information available.

U-Values

The following u-values have been used:

Building Element	g-value/ light transmittance	U-value ($W/m^2.K$)	Description
External Wall (Generally)	n/a	0.15	Brick slips with insulation behind and plasterboard lining internally
Opaque Glazed Wall	n/a	0.15	Opaque glazing with insulation behind and plasterboard lining internally
Basement Walls	n/a	0.15	Reinforced concrete wall with blockwork internally
Ground Floor	n/a	0.20	Ground bearing slab with solid insulation and floor finish over
Exposed Floor	n/a	0.20	Concrete floor slab with insulation and external finish below
Roof	n/a	0.15	Concrete deck with insulation and finish over 13th floor consists of lightweight roof construction
Glazing (inc. Glazed Doors)	0.40 / 0.71	1.4	Double glazing with solar control
Louvred Panels and Doors	n/a	2.2	Insulated louvred panels

Internal walls to circulation cores have been modelled as reinforced concrete with plasterboard lining to both sides. Wide internal walls (>215mm) have been modelled as blockwork with plasterboard lining to both sides. All narrow walls (<215mm) have been modelled as uninsulated stud partitions.

Internal floors are modelled as screeded reinforced concrete deck with void and plasterboard ceiling below.

Opaque glazing is assumed to all lower panels of glazing/perforated arrangements, as indicated in drawings 10224-Z0-A-B5D8-G251-DE-XX-001 and 002 (Rev 00 Draft). It has also been applied to all opaque areas of façade at 13th floor level.

The perforated panels in front of openings have been modelled as transparent construction with solar and visible light transmittance of 0.45. This is to represent the 45% free area.

The construction build ups used were obtained from the information contained on the architectural drawings and information relayed via email. These shall be finalised once architects details are concluded and products confirmed by the main contractor.

Accredited Constructions

Used	
Not Used	✓

Air Permeability

An air permeability of 5m^3/h.m^2 at 50 Pa has been used within the model. This is in excess of the value used by the notional building, so any improvement that can be made on site will be beneficial to the calculation.

Building Services

Heating

System 1

Type	Electric Heating
Areas Served	All heated areas except those served by Systems 2 or 3
Efficiency (%)	100
Fuel Type	Grid-supplied electricity
Distribution Efficiency (%)	100

System 2

Type	VRF Heating via Air Source Heat Pump
Areas Served	Community Hub, Amenity Gym, Entrance Lobby, Staff Kitchen, Amenity (floors 01, 03-08)
Efficiency (SCoP)	4.0
Fuel Type	Grid-supplied electricity
Distribution Efficiency (%)	90

System 3

Type	VRF Heating via Air Source Heat Pump
Areas Served	Comms Room
Efficiency (SCoP)	4.0
Fuel Type	Grid-supplied electricity
Distribution Efficiency (%)	90

System 4

Type	Unheated
Areas Served	Cycle Store, Bin Store, Generator Room, Substation, L-S S/R, LV S/R, Plant, Cleaners Cupboards (floors 01-13)
Efficiency (SCoP)	n/a
Fuel Type	n/a
Distribution Efficiency (%)	n/a

Cooling

System 1

Type	VRF Cooling via Air Source Heat Pump
Areas Served	Community Hub, Amenity Gym, Entrance Lobby, Staff Kitchen, Amenity (floors 01-08)
Seasonal Efficiency (SEER)	4.0
Fuel Type	Grid-supplied electricity
Distribution Efficiency (%)	90

System 2

Type	VRF Cooling via Air Source Heat Pump
Areas Served	Comms Room
Seasonal Efficiency (SEER)	4.0
Fuel Type	Grid-supplied electricity
Distribution Efficiency (%)	90

Hot Water

Type	DHW via Air Source Heat Pump
Efficiency (SCoP)	3.35
Fuel Type	Grid-supplied electricity
Distribution Efficiency (%)	90
Storage Volume (litres)	8000
Storage Height (mm)	10,000 (cumulative)
Insulation Thickness (mm)	80
Storage Insulation Conductivity (W/m².K)	0.03

Ventilation

Zones Served	Ventilation Type	Extract Rate (l/s)	Specific Fan Power (W/l.s)	Heat Recovery Efficiency	Demand Control
Amenity	Mech Vent	n/a	1.9	70%	×
BOH Circulation	Mech Vent	n/a	1.9	70%	×
Cluster Kitchens	Mech Vent	n/a	1.9	70%	×
Community Hub	Mech Vent	n/a	1.9	70%	×
Entrance Lobby	Mech Vent	n/a	1.9	70%	×
Gym	Mech Vent	n/a	1.9	70%	×
Laundry	Mech Vent	n/a	1.9	70%	×
Lift Lobby	Mech Vent	n/a	1.9	70%	×
Post Boxes	Mech Vent	n/a	1.9	70%	×
Staff Kitchen	Mech Vent	n/a	1.9	70%	×
Staff Shower	Mech Vent	n/a	1.9	70%	×
Student Bathroom	Mech Vent	n/a	1.9	70%	×
Student Bedroom/Studio	Mech Vent	n/a	1.9	70%	×
WCs	Mech Vent	n/a	1.9	70%	×
All Other Areas	Nat Vent	n/a	n/a	n/a	×

Bedroom ventilation strategy is mechanical continuous balanced with natural purge and overheat control via manually openable façade ventilators.

Miscellaneous HVAC

Pumping Arrangement	Variable speed pumping with multiple pressure sensors
Metering with warnings for out-of-range values	×

Power Factor Correction

Power factor correction has been included, therefore a factor of >0.95 has been used.

Lighting

Zones Served	Design Illuminance (lux)	Efficacy (LL/CW)	Presence Detection	Absence Detection	Daylight Dimming
Amenity	150	80	×	×	✓ (M)
Bin Store	50	94	✓	×	×
Circulation	100	80	✓	×	×
Cleaner Cupboard	50	94	×	✓	×
Cluster Kitchens	200	67	×	✓	✓ (M)
Comms	100	94	×	×	×
Community Hub	150	80	×	×	✓ (M)
Cycle Store	50	94	✓	×	×
Entrance Lobby	200	70	×	×	✓ (M)
Gym	150	80	✓	×	×
Laundry	300	94	✓	×	×
Lift Lobby	100	80	✓	×	×
Plant/Generator	200	94	×	×	×
Post Boxes	100	80	✓	×	×
Staff Shower	100	73	✓	×	×
Staff Kitchen	150	80	×	×	✓ (M)
Stair	100	73	✓	×	×
Store	50	94	✓	×	×
Student Bathroom	150	73	✓	×	×
Student Bedroom/Studio	80	73	×	✓	✓ (M)
WCs	200	73	✓	×	×

Display lighting in the Entrance Lobby is assumed to have an efficacy of 22 luminaire lumens per circuit watt, with no automatic time switching included, as per SBEM defaults.

Where dimming control is denoted as (M), this represents manual control, with minimum percentage gain of zero.

Miscellaneous Lighting

Metering with warnings for out-of-range values	×

Renewables

Type	Rooftop photovoltaic array
Details	87m^2 of array area orientated 163° from north (as per SimpsonHaugh roof layout) 30° inclination from horizontal Solar reflectance: 0.1 Solar conversion factor: 0.8
Panel Efficiency (%)	15
Annual Yield (kWh/yr)	8,187 (as calculated by SBEM)

Results

Criterion 1: CO2 Emission Rate

The BRUKL output (attached in Appendix A) shows a Target Emission Rate (TER) of 28.9kgCO_2/m^2 per year. The Building Emission Rate (BER) achieved with the parameters stated above is 28.1kgCO_2/m^2 per year. This is an improvement of 3% over and above the requirements of Part L2A 2013.

Appendix A – BRUKL Output Document

BRUKL Output Document

HM Government

Compliance with England Building Regulations Part L 2013

Project name

Booth Street West

As designed

Date: Wed Apr 07 11:30:51 2021

Administrative information

Building Details

Address: Booth Street West, Manchester, M15 6GE

Certification tool

Calculation engine: TAS

Calculation engine version: "v9.5.1"

Interface to calculation engine: TAS

Interface to calculation engine version: v9.5.1

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

Certifier details

Name:

Telephone number:

Address: , ,

Criterion 1: The calculated CO_2 emission rate for the building must not exceed the target

CO_2 emission rate from the notional building, kgCO_2/m^2.annum	28.9
Target CO_2 emission rate (TER), kgCO_2/m^2.annum	28.9
Building CO_2 emission rate (BER), kgCO_2/m^2.annum	28.1
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	$U_{a\text{-}Limit}$	$U_{a\text{-}Calc}$	$U_{i\text{-}Calc}$	Surface where the maximum value occurs*
Wall**	0.35	0.15	0.15	External Wall
Floor	0.25	0.2	0.2	Ground Floor
Roof	0.25	0.15	0.15	Roof
Windows***, roof windows, and rooflights	2.2	1.4	1.4	D05 - Glazed Door
Personnel doors	2.2	2.2	2.2	D06 - Louvre Over Door
Vehicle access & similar large doors	1.5	-	-	No vehicle doors in project
High usage entrance doors	3.5	-	-	No high usage entrance doors in project
$U_{a\text{-}Limit}$ = Limiting area-weighted average U-values [W $U_{a\text{-}Calc}$ = Calculated area-weighted average U-values * There might be more than one surface where the m ** Automatic U-value check by the tool does not appl *** Display windows and similar glazing are excluded N.B.: Neither roof ventilators (inc. smoke vents) nor s	[W/(m^2K)] /(m^2K)] aximum U	from the U-value ch	eck. urs. $U_{i\text{-}Calc}$ = C	alculated maximum individual element U-values [W/(m^2K)] g standard is similar to that for windows. elled 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	NO
Whole building electric power factor achieved by power factor correction	>0.95

1- MVHR + Elec H (General Areas) (9 Zones)

	Heating efficiency	**Cooling efficiency**	**Radiant efficiency**	**SFP [W/(l/s)]**	**HR efficiency**
This system	1	-	-	-	0.7
Standard value	0.86	N/A	N/A	N/A	0.5
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

2- MVHR + VRF H&C (Social/Amenity/Gym/Staff) (15 Zones)

	Heating efficiency	**Cooling efficiency**	**Radiant efficiency**	**SFP [W/(l/s)]**	**HR efficiency**
This system	4	4	-	1.9	0.7
Standard value	2.5*	2.6	N/A	1.6^	0.5
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.

^ Limiting SFP may be extended by the amounts specified in the Non-Domestic Building Services Compliance Guide if the system includes additional components as listed in the Guide.

3- NV + Elec H

	Heating efficiency	**Cooling efficiency**	**Radiant efficiency**	**SFP [W/(l/s)]**	**HR efficiency**
This system	1	-	-	-	-
Standard value	0.86	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

4- MVHR + Elec H (Student Flats) (541 Zones)

	Heating efficiency	**Cooling efficiency**	**Radiant efficiency**	**SFP [W/(l/s)]**	**HR efficiency**
This system	1	-	-	-	0.7
Standard value	0.86	N/A	N/A	N/A	0.5
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

5- NV + VRF H&C (Comms) (02 Comms)

	Heating efficiency	**Cooling efficiency**	**Radiant efficiency**	**SFP [W/(l/s)]**	**HR efficiency**
This system	0	4	-	-	-
Standard value	N/A	2.6	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

6- MVHR + Elec H (Laundry) (01 Laundry)

	Heating efficiency	**Cooling efficiency**	**Radiant efficiency**	**SFP [W/(l/s)]**	**HR efficiency**
This system	0	-	-	-	0.7
Standard value	N/A	N/A	N/A	N/A	0.5
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

1- New HWS Circuit

	Water heating efficiency	**Storage loss factor [kWh/litre per day]**
This building	3.35	0
Standard value	2*	N/A

* Standard shown is for all types except absorption and gas engine heat pumps.

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		
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
00 Post Boxes	-	-	-	1.9	-	-	-	-	-	-	N/A
00 Acc WC	-	-	-	1.9	-	-	-	-	-	-	N/A
00 BOH Circulation 1	-	-	-	1.9	-	-	-	-	-	-	N/A
00 Lift Lobby	-	-	-	1.9	-	-	-	-	-	-	N/A
00 Hub WC	-	-	-	1.9	-	-	-	-	-	-	N/A
00 Staff Acc WC	-	-	-	1.9	-	-	-	-	-	-	N/A
00 Staff Acc Shower	-	-	-	1.9	-	-	-	-	-	-	N/A
00 BOH Circulation 2	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Amenity WC	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Laundry	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bathroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bathroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bathroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bathroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bathroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bathroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bathroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bathroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bathroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bathroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bathroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bathroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bedroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bedroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bedroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bedroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bedroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bedroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bedroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bedroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Bedroom 9	-	-	-	1.9	-	-	-	-	-	-	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	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
01 Kitchen 1	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Studio 1	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Studio 2	-	-	-	1.9	-	-	-	-	-	-	N/A
01 Studio 3	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 14	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 15	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 16	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 17	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 18	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 19	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 20	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 14	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 15	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 16	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 17	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 18	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 19	-	-	-	1.9	-	-	-	-	-	-	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	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
02 Bedroom 20	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Kitchen 1	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Kitchen 2	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Kitchen 3	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Kitchen 4	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Studio 1	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 21	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bathroom 22	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 21	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 22	-	-	-	1.9	-	-	-	-	-	-	N/A
02 Bedroom 23	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 14	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 15	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 16	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 17	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 18	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 19	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 20	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 12	-	-	-	1.9	-	-	-	-	-	-	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	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
03 Bedroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 14	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 15	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 16	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 17	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 18	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 19	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 20	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Kitchen 1	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Kitchen 2	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Kitchen 3	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Kitchen 4	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Studio 1	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 21	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bathroom 22	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 21	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 22	-	-	-	1.9	-	-	-	-	-	-	N/A
03 Bedroom 23	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 14	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 15	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 16	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 17	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 18	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 19	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 20	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 5	-	-	-	1.9	-	-	-	-	-	-	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	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
04 Bedroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 14	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 15	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 16	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 17	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 18	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 19	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 20	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Kitchen 1	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Kitchen 2	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Kitchen 3	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Kitchen 4	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Studio 1	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 21	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bathroom 22	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 21	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 22	-	-	-	1.9	-	-	-	-	-	-	N/A
04 Bedroom 23	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 14	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 15	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 16	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 17	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 18	-	-	-	1.9	-	-	-	-	-	-	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	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
05 Bathroom 19	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 20	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 14	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 15	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 16	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 17	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 18	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 19	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 20	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Kitchen 1	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Kitchen 2	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Kitchen 3	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Kitchen 4	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Studio 1	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 21	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bathroom 22	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 21	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 22	-	-	-	1.9	-	-	-	-	-	-	N/A
05 Bedroom 23	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 11	-	-	-	1.9	-	-	-	-	-	-	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	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
06 Bathroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 14	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 15	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 16	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 17	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 18	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 19	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 20	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 14	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 15	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 16	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 17	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 18	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 19	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 20	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Kitchen 1	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Kitchen 2	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Kitchen 3	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Kitchen 4	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Studio 1	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 21	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bathroom 22	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 21	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 22	-	-	-	1.9	-	-	-	-	-	-	N/A
06 Bedroom 23	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 4	-	-	-	1.9	-	-	-	-	-	-	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	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
07 Bathroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 14	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 15	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 16	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 17	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 18	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 19	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 20	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 14	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 15	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 16	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 17	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 18	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 19	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 20	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Kitchen 1	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Kitchen 2	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Kitchen 3	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Kitchen 4	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Studio 1	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 21	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bathroom 22	-	-	-	1.9	-	-	-	-	-	-	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	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
07 Bedroom 21	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 22	-	-	-	1.9	-	-	-	-	-	-	N/A
07 Bedroom 23	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 14	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 15	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 16	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 17	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 18	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 19	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 20	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 14	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 15	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 16	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 17	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 18	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 19	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 20	-	-	-	1.9	-	-	-	-	-	-	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	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
08 Kitchen 1	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Kitchen 2	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Kitchen 3	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Kitchen 4	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Studio 1	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 21	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bathroom 22	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 21	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 22	-	-	-	1.9	-	-	-	-	-	-	N/A
08 Bedroom 23	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bathroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bathroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bathroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bathroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bathroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bathroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bathroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bathroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bathroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bathroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bathroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bathroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bathroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bathroom 14	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bathroom 15	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bathroom 16	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bathroom 17	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bedroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bedroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bedroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bedroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bedroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bedroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bedroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bedroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bedroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bedroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bedroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bedroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Bedroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Kitchen 1	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Kitchen 2	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Studio 1	-	-	-	1.9	-	-	-	-	-	-	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	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
09 Studio 2	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Studio 3	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Studio 4	-	-	-	1.9	-	-	-	-	-	-	N/A
09 Studio 5	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bathroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bathroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bathroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bathroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bathroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bathroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bathroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bathroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bathroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bathroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bathroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bathroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bathroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bathroom 14	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bathroom 15	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bathroom 16	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bathroom 17	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bedroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bedroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bedroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bedroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bedroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bedroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bedroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bedroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bedroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bedroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bedroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bedroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Bedroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Kitchen 1	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Kitchen 2	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Studio 1	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Studio 2	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Studio 3	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Studio 4	-	-	-	1.9	-	-	-	-	-	-	N/A
10 Studio 5	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bathroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bathroom 2	-	-	-	1.9	-	-	-	-	-	-	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	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
11 Bathroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bathroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bathroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bathroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bathroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bathroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bathroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bathroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bathroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bathroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bathroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bathroom 14	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bathroom 15	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bathroom 16	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bathroom 17	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bedroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bedroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bedroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bedroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bedroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bedroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bedroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bedroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bedroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bedroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bedroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bedroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Bedroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Kitchen 1	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Kitchen 2	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Studio 1	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Studio 2	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Studio 3	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Studio 4	-	-	-	1.9	-	-	-	-	-	-	N/A
11 Studio 5	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bathroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bathroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bathroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bathroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bathroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bathroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bathroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bathroom 8	-	-	-	1.9	-	-	-	-	-	-	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	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
12 Bathroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bathroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bathroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bathroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bathroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bathroom 14	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bathroom 15	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bathroom 16	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bathroom 17	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bedroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bedroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bedroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bedroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bedroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bedroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bedroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bedroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bedroom 9	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bedroom 10	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bedroom 11	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bedroom 12	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Bedroom 13	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Kitchen 1	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Kitchen 2	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Studio 1	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Studio 2	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Studio 3	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Studio 4	-	-	-	1.9	-	-	-	-	-	-	N/A
12 Studio 5	-	-	-	1.9	-	-	-	-	-	-	N/A
13 Bathroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
13 Bathroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
13 Bathroom 3	-	-	-	1.9	-	-	-	-	-	-	N/A
13 Bathroom 4	-	-	-	1.9	-	-	-	-	-	-	N/A
13 Bathroom 5	-	-	-	1.9	-	-	-	-	-	-	N/A
13 Bathroom 6	-	-	-	1.9	-	-	-	-	-	-	N/A
13 Bathroom 7	-	-	-	1.9	-	-	-	-	-	-	N/A
13 Bathroom 8	-	-	-	1.9	-	-	-	-	-	-	N/A
13 Bedroom 1	-	-	-	1.9	-	-	-	-	-	-	N/A
13 Bedroom 2	-	-	-	1.9	-	-	-	-	-	-	N/A
13 Kitchen 1	-	-	-	1.9	-	-	-	-	-	-	N/A
13 Studio 1	-	-	-	1.9	-	-	-	-	-	-	N/A
13 Studio 2	-	-	-	1.9	-	-	-	-	-	-	N/A
13 Studio 3	-	-	-	1.9	-	-	-	-	-	-	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	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
13 Studio 4	-	-	-	1.9	-	-	-	-	-	-	N/A
13 Studio 5	-	-	-	1.9	-	-	-	-	-	-	N/A
13 Studio 6	-	-	-	1.9	-	-	-	-	-	-	N/A
13 Studio 7	-	-	-	1.9	-	-	-	-	-	-	N/A

General lighting and display lighting

	Luminous efficacy [lm/W]			
Zone name	Luminaire	Lamp	Display lamp	General lighting [W]
Standard value	60	60	22	
-01 Corridor	-	80	-	76
-01 Cycle Store	94	-	-	46
-01 Stair	-	73	-	40
00 Community Hub 1 (Perimeter)	-	80	-	132
00 Community Hub 2 (Perimeter)	-	80	-	99
00 Community Hub 3 (Non-Perimeter)	-	80	-	66
00 Amenity Gym	-	80	-	128
00 Post Boxes	-	80	-	49
00 Bin Store	94	-	-	35
00 Generator Room	94	-	-	97
00 Substation	94	-	-	77
00 L-S S/R	94	-	-	9
00 LV S/R	94	-	-	12
00 Acc WC	-	73	-	44
00 BOH Circulation 1	-	80	-	17
00 Plant	94	-	-	269
00 Lift Lobby	-	80	-	23
00 Hub WC	-	73	-	41
00 Entrance Lobby	-	70	22	258
00 Staff Kitchen	-	80	-	148
00 Staff Acc WC	-	73	-	40
00 Staff Acc Shower	-	73	-	25
00 BOH Circulation 2	-	80	-	68
00 Stair	-	73	-	45
01 Amenity 1 (Perimeter)	-	80	-	138
01 Amenity 2 (Perimeter)	-	80	-	379
01 Amenity 3 (Non-Perimeter)	-	80	-	129
01 Amenity WC	-	73	-	28
01 Laundry	-	94	-	138
01 Cleaners Cupboard	94	-	-	6
01 Corridor	-	80	-	100
01 Cluster Corridor	-	80	-	94
01 Stair	-	73	-	38
01 Bathroom 1	-	73	-	18
01 Bathroom 2	-	73	-	21

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
01 Bathroom 3	-	73	-	20
01 Bathroom 4	-	73	-	21
01 Bathroom 5	-	73	-	19
01 Bathroom 6	-	73	-	20
01 Bathroom 7	-	73	-	21
01 Bathroom 8	-	73	-	17
01 Bathroom 9	-	73	-	20
01 Bathroom 10	-	73	-	31
01 Bathroom 11	-	73	-	22
01 Bathroom 12	-	73	-	22
01 Bedroom 1	-	73	-	26
01 Bedroom 2	-	73	-	26
01 Bedroom 3	-	73	-	26
01 Bedroom 4	-	73	-	26
01 Bedroom 5	-	73	-	26
01 Bedroom 6	-	73	-	26
01 Bedroom 7	-	73	-	26
01 Bedroom 8	-	73	-	26
01 Bedroom 9	-	73	-	26
01 Kitchen 1	-	67	-	165
01 Studio 1	-	73	-	52
01 Studio 2	-	73	-	41
01 Studio 3	-	73	-	45
02 Comms	94	-	-	35
02 Cleaners Cupboard	94	-	-	5
02 Stair	-	73	-	34
02 Corridor	-	80	-	84
02 Cluster Corridor 1	-	80	-	78
02 Cluster Corridor 2	-	80	-	62
02 Bathroom 1	-	73	-	27
02 Bathroom 2	-	73	-	15
02 Bathroom 3	-	73	-	16
02 Bathroom 4	-	73	-	15
02 Bathroom 5	-	73	-	16
02 Bathroom 6	-	73	-	15
02 Bathroom 7	-	73	-	15
02 Bathroom 8	-	73	-	16
02 Bathroom 9	-	73	-	15
02 Bathroom 10	-	73	-	16
02 Bathroom 11	-	73	-	25
02 Bathroom 12	-	73	-	19
02 Bathroom 13	-	73	-	16
02 Bathroom 14	-	73	-	18

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
02 Bathroom 15	-	73	-	15
02 Bathroom 16	-	73	-	15
02 Bathroom 17	-	73	-	15
02 Bathroom 18	-	73	-	15
02 Bathroom 19	-	73	-	15
02 Bathroom 20	-	73	-	15
02 Bedroom 1	-	73	-	21
02 Bedroom 2	-	73	-	21
02 Bedroom 3	-	73	-	21
02 Bedroom 4	-	73	-	21
02 Bedroom 5	-	73	-	21
02 Bedroom 6	-	73	-	21
02 Bedroom 7	-	73	-	21
02 Bedroom 8	-	73	-	21
02 Bedroom 9	-	73	-	21
02 Bedroom 10	-	73	-	21
02 Bedroom 11	-	73	-	19
02 Bedroom 12	-	73	-	18
02 Bedroom 13	-	73	-	18
02 Bedroom 14	-	73	-	17
02 Bedroom 15	-	73	-	17
02 Bedroom 16	-	73	-	24
02 Bedroom 17	-	73	-	24
02 Bedroom 18	-	73	-	23
02 Bedroom 19	-	73	-	23
02 Bedroom 20	-	73	-	23
02 Kitchen 1	-	67	-	161
02 Kitchen 2	-	67	-	127
02 Kitchen 3	-	67	-	120
02 Kitchen 4	-	67	-	122
02 Studio 1	-	73	-	47
02 Bathroom 21	-	73	-	15
02 Bathroom 22	-	73	-	17
02 Bedroom 21	-	73	-	22
02 Bedroom 22	-	73	-	19
02 Bedroom 23	-	73	-	26
03 Amenity	-	80	-	62
03 Cleaners Cupboard	94	-	-	5
03 Stair	-	73	-	34
03 Corridor	-	80	-	84
03 Cluster Corridor 1	-	80	-	78
03 Cluster Corridor 2	-	80	-	62
03 Bathroom 1	-	73	-	27

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
03 Bathroom 2	-	73	-	15
03 Bathroom 3	-	73	-	16
03 Bathroom 4	-	73	-	15
03 Bathroom 5	-	73	-	16
03 Bathroom 6	-	73	-	15
03 Bathroom 7	-	73	-	15
03 Bathroom 8	-	73	-	16
03 Bathroom 9	-	73	-	15
03 Bathroom 10	-	73	-	16
03 Bathroom 11	-	73	-	25
03 Bathroom 12	-	73	-	19
03 Bathroom 13	-	73	-	16
03 Bathroom 14	-	73	-	18
03 Bathroom 15	-	73	-	15
03 Bathroom 16	-	73	-	15
03 Bathroom 17	-	73	-	15
03 Bathroom 18	-	73	-	15
03 Bathroom 19	-	73	-	15
03 Bathroom 20	-	73	-	15
03 Bedroom 1	-	73	-	21
03 Bedroom 2	-	73	-	21
03 Bedroom 3	-	73	-	21
03 Bedroom 4	-	73	-	21
03 Bedroom 5	-	73	-	21
03 Bedroom 6	-	73	-	21
03 Bedroom 7	-	73	-	21
03 Bedroom 8	-	73	-	21
03 Bedroom 9	-	73	-	21
03 Bedroom 10	-	73	-	21
03 Bedroom 11	-	73	-	19
03 Bedroom 12	-	73	-	18
03 Bedroom 13	-	73	-	18
03 Bedroom 14	-	73	-	17
03 Bedroom 15	-	73	-	17
03 Bedroom 16	-	73	-	24
03 Bedroom 17	-	73	-	24
03 Bedroom 18	-	73	-	23
03 Bedroom 19	-	73	-	23
03 Bedroom 20	-	73	-	23
03 Kitchen 1	-	67	-	157
03 Kitchen 2	-	67	-	127
03 Kitchen 3	-	67	-	120
03 Kitchen 4	-	67	-	122

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
03 Studio 1	-	73	-	47
03 Bathroom 21	-	73	-	15
03 Bathroom 22	-	73	-	17
03 Bedroom 21	-	73	-	22
03 Bedroom 22	-	73	-	19
03 Bedroom 23	-	73	-	26
04 Amenity	-	80	-	62
04 Cleaners Cupboard	94	-	-	5
04 Stair	-	73	-	34
04 Corridor	-	80	-	84
04 Cluster Corridor 1	-	80	-	78
04 Cluster Corridor 2	-	80	-	62
04 Bathroom 1	-	73	-	27
04 Bathroom 2	-	73	-	15
04 Bathroom 3	-	73	-	16
04 Bathroom 4	-	73	-	15
04 Bathroom 5	-	73	-	16
04 Bathroom 6	-	73	-	15
04 Bathroom 7	-	73	-	15
04 Bathroom 8	-	73	-	16
04 Bathroom 9	-	73	-	15
04 Bathroom 10	-	73	-	16
04 Bathroom 11	-	73	-	25
04 Bathroom 12	-	73	-	19
04 Bathroom 13	-	73	-	16
04 Bathroom 14	-	73	-	18
04 Bathroom 15	-	73	-	15
04 Bathroom 16	-	73	-	15
04 Bathroom 17	-	73	-	15
04 Bathroom 18	-	73	-	15
04 Bathroom 19	-	73	-	15
04 Bathroom 20	-	73	-	15
04 Bedroom 1	-	73	-	21
04 Bedroom 2	-	73	-	21
04 Bedroom 3	-	73	-	21
04 Bedroom 4	-	73	-	21
04 Bedroom 5	-	73	-	21
04 Bedroom 6	-	73	-	21
04 Bedroom 7	-	73	-	21
04 Bedroom 8	-	73	-	21
04 Bedroom 9	-	73	-	21
04 Bedroom 10	-	73	-	21
04 Bedroom 11	-	73	-	19

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
04 Bedroom 12	-	73	-	18
04 Bedroom 13	-	73	-	18
04 Bedroom 14	-	73	-	17
04 Bedroom 15	-	73	-	17
04 Bedroom 16	-	73	-	24
04 Bedroom 17	-	73	-	24
04 Bedroom 18	-	73	-	23
04 Bedroom 19	-	73	-	23
04 Bedroom 20	-	73	-	23
04 Kitchen 1	-	67	-	157
04 Kitchen 2	-	67	-	127
04 Kitchen 3	-	67	-	120
04 Kitchen 4	-	67	-	122
04 Studio 1	-	73	-	47
04 Bathroom 21	-	73	-	15
04 Bathroom 22	-	73	-	17
04 Bedroom 21	-	73	-	22
04 Bedroom 22	-	73	-	19
04 Bedroom 23	-	73	-	26
05 Amenity	-	80	-	62
05 Cleaners Cupboard	94	-	-	5
05 Stair	-	73	-	34
05 Corridor	-	80	-	84
05 Cluster Corridor 1	-	80	-	78
05 Cluster Corridor 2	-	80	-	62
05 Bathroom 1	-	73	-	27
05 Bathroom 2	-	73	-	15
05 Bathroom 3	-	73	-	16
05 Bathroom 4	-	73	-	15
05 Bathroom 5	-	73	-	16
05 Bathroom 6	-	73	-	15
05 Bathroom 7	-	73	-	15
05 Bathroom 8	-	73	-	16
05 Bathroom 9	-	73	-	15
05 Bathroom 10	-	73	-	16
05 Bathroom 11	-	73	-	25
05 Bathroom 12	-	73	-	19
05 Bathroom 13	-	73	-	16
05 Bathroom 14	-	73	-	18
05 Bathroom 15	-	73	-	15
05 Bathroom 16	-	73	-	15
05 Bathroom 17	-	73	-	15
05 Bathroom 18	-	73	-	15

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
05 Bathroom 19	-	73	-	15
05 Bathroom 20	-	73	-	15
05 Bedroom 1	-	73	-	21
05 Bedroom 2	-	73	-	21
05 Bedroom 3	-	73	-	21
05 Bedroom 4	-	73	-	21
05 Bedroom 5	-	73	-	21
05 Bedroom 6	-	73	-	21
05 Bedroom 7	-	73	-	21
05 Bedroom 8	-	73	-	21
05 Bedroom 9	-	73	-	21
05 Bedroom 10	-	73	-	21
05 Bedroom 11	-	73	-	19
05 Bedroom 12	-	73	-	18
05 Bedroom 13	-	73	-	18
05 Bedroom 14	-	73	-	17
05 Bedroom 15	-	73	-	17
05 Bedroom 16	-	73	-	24
05 Bedroom 17	-	73	-	24
05 Bedroom 18	-	73	-	23
05 Bedroom 19	-	73	-	23
05 Bedroom 20	-	73	-	23
05 Kitchen 1	-	67	-	157
05 Kitchen 2	-	67	-	127
05 Kitchen 3	-	67	-	120
05 Kitchen 4	-	67	-	122
05 Studio 1	-	73	-	47
05 Bathroom 21	-	73	-	15
05 Bathroom 22	-	73	-	17
05 Bedroom 21	-	73	-	22
05 Bedroom 22	-	73	-	19
05 Bedroom 23	-	73	-	26
06 Amenity	-	80	-	62
06 Cleaners Cupboard	94	-	-	5
06 Stair	-	73	-	34
06 Corridor	-	80	-	84
06 Cluster Corridor 1	-	80	-	78
06 Cluster Corridor 2	-	80	-	62
06 Bathroom 1	-	73	-	27
06 Bathroom 2	-	73	-	15
06 Bathroom 3	-	73	-	16
06 Bathroom 4	-	73	-	15
06 Bathroom 5	-	73	-	16

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
06 Bathroom 6	-	73	-	15
06 Bathroom 7	-	73	-	15
06 Bathroom 8	-	73	-	16
06 Bathroom 9	-	73	-	15
06 Bathroom 10	-	73	-	16
06 Bathroom 11	-	73	-	25
06 Bathroom 12	-	73	-	19
06 Bathroom 13	-	73	-	16
06 Bathroom 14	-	73	-	18
06 Bathroom 15	-	73	-	15
06 Bathroom 16	-	73	-	15
06 Bathroom 17	-	73	-	15
06 Bathroom 18	-	73	-	15
06 Bathroom 19	-	73	-	15
06 Bathroom 20	-	73	-	15
06 Bedroom 1	-	73	-	21
06 Bedroom 2	-	73	-	21
06 Bedroom 3	-	73	-	21
06 Bedroom 4	-	73	-	21
06 Bedroom 5	-	73	-	21
06 Bedroom 6	-	73	-	21
06 Bedroom 7	-	73	-	21
06 Bedroom 8	-	73	-	21
06 Bedroom 9	-	73	-	21
06 Bedroom 10	-	73	-	21
06 Bedroom 11	-	73	-	19
06 Bedroom 12	-	73	-	18
06 Bedroom 13	-	73	-	18
06 Bedroom 14	-	73	-	17
06 Bedroom 15	-	73	-	17
06 Bedroom 16	-	73	-	24
06 Bedroom 17	-	73	-	24
06 Bedroom 18	-	73	-	23
06 Bedroom 19	-	73	-	23
06 Bedroom 20	-	73	-	23
06 Kitchen 1	-	67	-	157
06 Kitchen 2	-	67	-	127
06 Kitchen 3	-	67	-	120
06 Kitchen 4	-	67	-	122
06 Studio 1	-	73	-	47
06 Bathroom 21	-	73	-	15
06 Bathroom 22	-	73	-	17
06 Bedroom 21	-	73	-	22

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
06 Bedroom 22	-	73	-	19
06 Bedroom 23	-	73	-	26
07 Amenity	-	80	-	62
07 Cleaners Cupboard	94	-	-	5
07 Stair	-	73	-	34
07 Corridor	-	80	-	84
07 Cluster Corridor 1	-	80	-	78
07 Cluster Corridor 2	-	80	-	62
07 Bathroom 1	-	73	-	27
07 Bathroom 2	-	73	-	15
07 Bathroom 3	-	73	-	16
07 Bathroom 4	-	73	-	15
07 Bathroom 5	-	73	-	16
07 Bathroom 6	-	73	-	15
07 Bathroom 7	-	73	-	15
07 Bathroom 8	-	73	-	16
07 Bathroom 9	-	73	-	15
07 Bathroom 10	-	73	-	16
07 Bathroom 11	-	73	-	25
07 Bathroom 12	-	73	-	19
07 Bathroom 13	-	73	-	16
07 Bathroom 14	-	73	-	18
07 Bathroom 15	-	73	-	15
07 Bathroom 16	-	73	-	15
07 Bathroom 17	-	73	-	15
07 Bathroom 18	-	73	-	15
07 Bathroom 19	-	73	-	15
07 Bathroom 20	-	73	-	15
07 Bedroom 1	-	73	-	21
07 Bedroom 2	-	73	-	21
07 Bedroom 3	-	73	-	21
07 Bedroom 4	-	73	-	21
07 Bedroom 5	-	73	-	21
07 Bedroom 6	-	73	-	21
07 Bedroom 7	-	73	-	21
07 Bedroom 8	-	73	-	21
07 Bedroom 9	-	73	-	21
07 Bedroom 10	-	73	-	21
07 Bedroom 11	-	73	-	19
07 Bedroom 12	-	73	-	18
07 Bedroom 13	-	73	-	18
07 Bedroom 14	-	73	-	17
07 Bedroom 15	-	73	-	17

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
07 Bedroom 16	-	73	-	24
07 Bedroom 17	-	73	-	24
07 Bedroom 18	-	73	-	23
07 Bedroom 19	-	73	-	23
07 Bedroom 20	-	73	-	23
07 Kitchen 1	-	67	-	157
07 Kitchen 2	-	67	-	127
07 Kitchen 3	-	67	-	120
07 Kitchen 4	-	67	-	122
07 Studio 1	-	73	-	47
07 Bathroom 21	-	73	-	15
07 Bathroom 22	-	73	-	17
07 Bedroom 21	-	73	-	22
07 Bedroom 22	-	73	-	19
07 Bedroom 23	-	73	-	26
08 Amenity	-	80	-	62
08 Cleaners Cupboard	94	-	-	5
08 Stair	-	73	-	34
08 Corridor	-	80	-	84
08 Cluster Corridor 1	-	80	-	78
08 Cluster Corridor 2	-	80	-	62
08 Bathroom 1	-	73	-	27
08 Bathroom 2	-	73	-	15
08 Bathroom 3	-	73	-	16
08 Bathroom 4	-	73	-	15
08 Bathroom 5	-	73	-	16
08 Bathroom 6	-	73	-	15
08 Bathroom 7	-	73	-	15
08 Bathroom 8	-	73	-	16
08 Bathroom 9	-	73	-	15
08 Bathroom 10	-	73	-	16
08 Bathroom 11	-	73	-	25
08 Bathroom 12	-	73	-	19
08 Bathroom 13	-	73	-	16
08 Bathroom 14	-	73	-	18
08 Bathroom 15	-	73	-	15
08 Bathroom 16	-	73	-	15
08 Bathroom 17	-	73	-	15
08 Bathroom 18	-	73	-	15
08 Bathroom 19	-	73	-	15
08 Bathroom 20	-	73	-	15
08 Bedroom 1	-	73	-	21
08 Bedroom 2	-	73	-	21

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
08 Bedroom 3	-	73	-	21
08 Bedroom 4	-	73	-	21
08 Bedroom 5	-	73	-	21
08 Bedroom 6	-	73	-	21
08 Bedroom 7	-	73	-	21
08 Bedroom 8	-	73	-	21
08 Bedroom 9	-	73	-	21
08 Bedroom 10	-	73	-	21
08 Bedroom 11	-	73	-	19
08 Bedroom 12	-	73	-	18
08 Bedroom 13	-	73	-	18
08 Bedroom 14	-	73	-	17
08 Bedroom 15	-	73	-	17
08 Bedroom 16	-	73	-	24
08 Bedroom 17	-	73	-	24
08 Bedroom 18	-	73	-	23
08 Bedroom 19	-	73	-	23
08 Bedroom 20	-	73	-	23
08 Kitchen 1	-	67	-	157
08 Kitchen 2	-	67	-	127
08 Kitchen 3	-	67	-	120
08 Kitchen 4	-	67	-	122
08 Studio 1	-	73	-	47
08 Bathroom 21	-	73	-	15
08 Bathroom 22	-	73	-	17
08 Bedroom 21	-	73	-	22
08 Bedroom 22	-	73	-	19
08 Bedroom 23	-	73	-	26
09 Stair	-	73	-	34
09 Cleaners Cupboard	94	-	-	5
09 Corridor	-	80	-	69
09 Cluster Corridor	-	80	-	90
09 Bathroom 1	-	73	-	15
09 Bathroom 2	-	73	-	15
09 Bathroom 3	-	73	-	15
09 Bathroom 4	-	73	-	15
09 Bathroom 5	-	73	-	15
09 Bathroom 6	-	73	-	15
09 Bathroom 7	-	73	-	15
09 Bathroom 8	-	73	-	15
09 Bathroom 9	-	73	-	15
09 Bathroom 10	-	73	-	15
09 Bathroom 11	-	73	-	16

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
09 Bathroom 12	-	73	-	16
09 Bathroom 13	-	73	-	16
09 Bathroom 14	-	73	-	16
09 Bathroom 15	-	73	-	16
09 Bathroom 16	-	73	-	17
09 Bathroom 17	-	73	-	16
09 Bedroom 1	-	73	-	28
09 Bedroom 2	-	73	-	21
09 Bedroom 3	-	73	-	21
09 Bedroom 4	-	73	-	21
09 Bedroom 5	-	73	-	21
09 Bedroom 6	-	73	-	21
09 Bedroom 7	-	73	-	21
09 Bedroom 8	-	73	-	21
09 Bedroom 9	-	73	-	21
09 Bedroom 10	-	73	-	21
09 Bedroom 11	-	73	-	18
09 Bedroom 12	-	73	-	17
09 Bedroom 13	-	73	-	17
09 Kitchen 1	-	67	-	141
09 Kitchen 2	-	67	-	106
09 Studio 1	-	73	-	37
09 Studio 2	-	73	-	28
09 Studio 3	-	73	-	28
09 Studio 4	-	73	-	28
09 Studio 5	-	73	-	28
10 Stair	-	73	-	34
10 Cleaners Cupboard	94	-	-	5
10 Corridor	-	80	-	71
10 Cluster Corridor	-	80	-	90
10 Bathroom 1	-	73	-	15
10 Bathroom 2	-	73	-	15
10 Bathroom 3	-	73	-	15
10 Bathroom 4	-	73	-	15
10 Bathroom 5	-	73	-	15
10 Bathroom 6	-	73	-	15
10 Bathroom 7	-	73	-	15
10 Bathroom 8	-	73	-	15
10 Bathroom 9	-	73	-	15
10 Bathroom 10	-	73	-	15
10 Bathroom 11	-	73	-	16
10 Bathroom 12	-	73	-	16
10 Bathroom 13	-	73	-	16

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
10 Bathroom 14	-	73	-	16
10 Bathroom 15	-	73	-	16
10 Bathroom 16	-	73	-	17
10 Bathroom 17	-	73	-	16
10 Bedroom 1	-	73	-	28
10 Bedroom 2	-	73	-	21
10 Bedroom 3	-	73	-	21
10 Bedroom 4	-	73	-	21
10 Bedroom 5	-	73	-	21
10 Bedroom 6	-	73	-	21
10 Bedroom 7	-	73	-	21
10 Bedroom 8	-	73	-	21
10 Bedroom 9	-	73	-	21
10 Bedroom 10	-	73	-	21
10 Bedroom 11	-	73	-	18
10 Bedroom 12	-	73	-	17
10 Bedroom 13	-	73	-	17
10 Kitchen 1	-	67	-	141
10 Kitchen 2	-	67	-	106
10 Studio 1	-	73	-	37
10 Studio 2	-	73	-	28
10 Studio 3	-	73	-	28
10 Studio 4	-	73	-	28
10 Studio 5	-	73	-	28
11 Stair	-	73	-	34
11 Cleaners Cupboard	94	-	-	5
11 Corridor	-	80	-	71
11 Cluster Corridor	-	80	-	90
11 Bathroom 1	-	73	-	15
11 Bathroom 2	-	73	-	15
11 Bathroom 3	-	73	-	15
11 Bathroom 4	-	73	-	15
11 Bathroom 5	-	73	-	15
11 Bathroom 6	-	73	-	15
11 Bathroom 7	-	73	-	15
11 Bathroom 8	-	73	-	15
11 Bathroom 9	-	73	-	15
11 Bathroom 10	-	73	-	15
11 Bathroom 11	-	73	-	16
11 Bathroom 12	-	73	-	16
11 Bathroom 13	-	73	-	16
11 Bathroom 14	-	73	-	16
11 Bathroom 15	-	73	-	16

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
11 Bathroom 16	-	73	-	17
11 Bathroom 17	-	73	-	16
11 Bedroom 1	-	73	-	28
11 Bedroom 2	-	73	-	21
11 Bedroom 3	-	73	-	21
11 Bedroom 4	-	73	-	21
11 Bedroom 5	-	73	-	21
11 Bedroom 6	-	73	-	21
11 Bedroom 7	-	73	-	21
11 Bedroom 8	-	73	-	21
11 Bedroom 9	-	73	-	21
11 Bedroom 10	-	73	-	21
11 Bedroom 11	-	73	-	18
11 Bedroom 12	-	73	-	17
11 Bedroom 13	-	73	-	17
11 Kitchen 1	-	67	-	141
11 Kitchen 2	-	67	-	106
11 Studio 1	-	73	-	37
11 Studio 2	-	73	-	28
11 Studio 3	-	73	-	28
11 Studio 4	-	73	-	28
11 Studio 5	-	73	-	28
12 Stair	-	73	-	35
12 Cleaners Cupboard	94	-	-	5
12 Corridor	-	80	-	72
12 Cluster Corridor	-	80	-	93
12 Bathroom 1	-	73	-	16
12 Bathroom 2	-	73	-	16
12 Bathroom 3	-	73	-	16
12 Bathroom 4	-	73	-	16
12 Bathroom 5	-	73	-	16
12 Bathroom 6	-	73	-	16
12 Bathroom 7	-	73	-	16
12 Bathroom 8	-	73	-	16
12 Bathroom 9	-	73	-	16
12 Bathroom 10	-	73	-	16
12 Bathroom 11	-	73	-	16
12 Bathroom 12	-	73	-	17
12 Bathroom 13	-	73	-	17
12 Bathroom 14	-	73	-	17
12 Bathroom 15	-	73	-	17
12 Bathroom 16	-	73	-	17
12 Bathroom 17	-	73	-	16

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
12 Bedroom 1	-	73	-	28
12 Bedroom 2	-	73	-	22
12 Bedroom 3	-	73	-	21
12 Bedroom 4	-	73	-	21
12 Bedroom 5	-	73	-	22
12 Bedroom 6	-	73	-	21
12 Bedroom 7	-	73	-	21
12 Bedroom 8	-	73	-	22
12 Bedroom 9	-	73	-	22
12 Bedroom 10	-	73	-	22
12 Bedroom 11	-	73	-	19
12 Bedroom 12	-	73	-	18
12 Bedroom 13	-	73	-	17
12 Kitchen 1	-	67	-	143
12 Kitchen 2	-	67	-	108
12 Studio 1	-	73	-	38
12 Studio 2	-	73	-	29
12 Studio 3	-	73	-	28
12 Studio 4	-	73	-	29
12 Studio 5	-	73	-	28
13 Stair	-	73	-	33
13 Cleaners Cupboard	94	-	-	4
13 Corridor	-	80	-	89
13 Bathroom 1	-	73	-	14
13 Bathroom 2	-	73	-	14
13 Bathroom 3	-	73	-	13
13 Bathroom 4	-	73	-	14
13 Bathroom 5	-	73	-	17
13 Bathroom 6	-	73	-	18
13 Bathroom 7	-	73	-	16
13 Bathroom 8	-	73	-	16
13 Bedroom 1	-	73	-	19
13 Bedroom 2	-	73	-	21
13 Kitchen 1	-	67	-	83
13 Studio 1	-	73	-	46
13 Studio 2	-	73	-	30
13 Studio 3	-	73	-	30
13 Studio 4	-	73	-	31
13 Studio 5	-	73	-	35
13 Studio 6	-	73	-	28
13 Studio 7	-	73	-	28

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?
00 Community Hub 1 (Perimeter)	NO (-20%)	NO
00 Community Hub 2 (Perimeter)	NO (-4%)	NO
00 Community Hub 3 (Non-Perimeter)	NO (-69%)	NO
00 Amenity Gym	YES (+3%)	NO
00 Entrance Lobby	NO (-24%)	NO
00 Staff Kitchen	NO (-42%)	NO
01 Amenity 1 (Perimeter)	NO (-65%)	NO
01 Amenity 2 (Perimeter)	NO (-65%)	NO
01 Amenity 3 (Non-Perimeter)	NO (-80%)	NO
01 Bedroom 1	NO (-62%)	NO
01 Bedroom 2	NO (-61%)	NO
01 Bedroom 3	NO (-61%)	NO
01 Bedroom 4	NO (-62%)	NO
01 Bedroom 5	NO (-60%)	NO
01 Bedroom 6	NO (-60%)	NO
01 Bedroom 7	NO (-61%)	NO
01 Bedroom 8	NO (-61%)	NO
01 Bedroom 9	NO (-62%)	NO
01 Studio 1	NO (-93%)	NO
01 Studio 2	NO (-67%)	NO
01 Studio 3	NO (-91%)	NO
02 Comms	N/A	N/A
02 Bedroom 1	NO (-59%)	NO
02 Bedroom 2	NO (-58%)	NO
02 Bedroom 3	NO (-58%)	NO
02 Bedroom 4	NO (-59%)	NO
02 Bedroom 5	NO (-57%)	NO
02 Bedroom 6	NO (-58%)	NO
02 Bedroom 7	NO (-58%)	NO
02 Bedroom 8	NO (-58%)	NO
02 Bedroom 9	NO (-59%)	NO
02 Bedroom 10	NO (-84%)	NO
02 Bedroom 11	NO (-54%)	NO
02 Bedroom 12	NO (-53%)	NO
02 Bedroom 13	NO (-53%)	NO
02 Bedroom 14	NO (-53%)	NO
02 Bedroom 15	NO (-55%)	NO
02 Bedroom 16	NO (-53%)	NO
02 Bedroom 17	NO (-54%)	NO
02 Bedroom 18	NO (-53%)	NO
02 Bedroom 19	NO (-53%)	NO
02 Bedroom 20	NO (-57%)	NO
02 Studio 1	NO (-93%)	NO
02 Bedroom 21	NO (-55%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
02 Bedroom 22	NO (-54%)	NO
02 Bedroom 23	NO (-52%)	NO
03 Amenity	N/A	N/A
03 Bedroom 1	NO (-60%)	NO
03 Bedroom 2	NO (-59%)	NO
03 Bedroom 3	NO (-58%)	NO
03 Bedroom 4	NO (-60%)	NO
03 Bedroom 5	NO (-58%)	NO
03 Bedroom 6	NO (-58%)	NO
03 Bedroom 7	NO (-59%)	NO
03 Bedroom 8	NO (-59%)	NO
03 Bedroom 9	NO (-60%)	NO
03 Bedroom 10	NO (-84%)	NO
03 Bedroom 11	NO (-53%)	NO
03 Bedroom 12	NO (-53%)	NO
03 Bedroom 13	NO (-53%)	NO
03 Bedroom 14	NO (-53%)	NO
03 Bedroom 15	NO (-55%)	NO
03 Bedroom 16	NO (-52%)	NO
03 Bedroom 17	NO (-53%)	NO
03 Bedroom 18	NO (-53%)	NO
03 Bedroom 19	NO (-52%)	NO
03 Bedroom 20	NO (-56%)	NO
03 Studio 1	NO (-93%)	NO
03 Bedroom 21	NO (-55%)	NO
03 Bedroom 22	NO (-53%)	NO
03 Bedroom 23	NO (-52%)	NO
04 Amenity	N/A	N/A
04 Bedroom 1	NO (-59%)	NO
04 Bedroom 2	NO (-58%)	NO
04 Bedroom 3	NO (-58%)	NO
04 Bedroom 4	NO (-59%)	NO
04 Bedroom 5	NO (-57%)	NO
04 Bedroom 6	NO (-58%)	NO
04 Bedroom 7	NO (-58%)	NO
04 Bedroom 8	NO (-58%)	NO
04 Bedroom 9	NO (-59%)	NO
04 Bedroom 10	NO (-84%)	NO
04 Bedroom 11	NO (-53%)	NO
04 Bedroom 12	NO (-53%)	NO
04 Bedroom 13	NO (-53%)	NO
04 Bedroom 14	NO (-53%)	NO
04 Bedroom 15	NO (-54%)	NO
04 Bedroom 16	NO (-52%)	NO
04 Bedroom 17	NO (-53%)	NO
04 Bedroom 18	NO (-53%)	NO
04 Bedroom 19	NO (-52%)	NO
04 Bedroom 20	NO (-56%)	NO
04 Studio 1	NO (-93%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
04 Bedroom 21	NO (-54%)	NO
04 Bedroom 22	NO (-53%)	NO
04 Bedroom 23	NO (-52%)	NO
05 Amenity	N/A	N/A
05 Bedroom 1	NO (-60%)	NO
05 Bedroom 2	NO (-59%)	NO
05 Bedroom 3	NO (-58%)	NO
05 Bedroom 4	NO (-60%)	NO
05 Bedroom 5	NO (-58%)	NO
05 Bedroom 6	NO (-58%)	NO
05 Bedroom 7	NO (-59%)	NO
05 Bedroom 8	NO (-59%)	NO
05 Bedroom 9	NO (-60%)	NO
05 Bedroom 10	NO (-84%)	NO
05 Bedroom 11	NO (-53%)	NO
05 Bedroom 12	NO (-52%)	NO
05 Bedroom 13	NO (-52%)	NO
05 Bedroom 14	NO (-52%)	NO
05 Bedroom 15	NO (-54%)	NO
05 Bedroom 16	NO (-52%)	NO
05 Bedroom 17	NO (-53%)	NO
05 Bedroom 18	NO (-52%)	NO
05 Bedroom 19	NO (-52%)	NO
05 Bedroom 20	NO (-56%)	NO
05 Studio 1	NO (-93%)	NO
05 Bedroom 21	NO (-54%)	NO
05 Bedroom 22	NO (-53%)	NO
05 Bedroom 23	NO (-52%)	NO
06 Amenity	N/A	N/A
06 Bedroom 1	NO (-59%)	NO
06 Bedroom 2	NO (-58%)	NO
06 Bedroom 3	NO (-58%)	NO
06 Bedroom 4	NO (-59%)	NO
06 Bedroom 5	NO (-57%)	NO
06 Bedroom 6	NO (-58%)	NO
06 Bedroom 7	NO (-58%)	NO
06 Bedroom 8	NO (-58%)	NO
06 Bedroom 9	NO (-59%)	NO
06 Bedroom 10	NO (-84%)	NO
06 Bedroom 11	NO (-53%)	NO
06 Bedroom 12	NO (-52%)	NO
06 Bedroom 13	NO (-52%)	NO
06 Bedroom 14	NO (-52%)	NO
06 Bedroom 15	NO (-54%)	NO
06 Bedroom 16	NO (-52%)	NO
06 Bedroom 17	NO (-53%)	NO
06 Bedroom 18	NO (-52%)	NO
06 Bedroom 19	NO (-52%)	NO
06 Bedroom 20	NO (-56%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
06 Studio 1	NO (-93%)	NO
06 Bedroom 21	NO (-54%)	NO
06 Bedroom 22	NO (-53%)	NO
06 Bedroom 23	NO (-52%)	NO
07 Amenity	N/A	N/A
07 Bedroom 1	NO (-60%)	NO
07 Bedroom 2	NO (-59%)	NO
07 Bedroom 3	NO (-58%)	NO
07 Bedroom 4	NO (-60%)	NO
07 Bedroom 5	NO (-58%)	NO
07 Bedroom 6	NO (-58%)	NO
07 Bedroom 7	NO (-59%)	NO
07 Bedroom 8	NO (-59%)	NO
07 Bedroom 9	NO (-60%)	NO
07 Bedroom 10	NO (-84%)	NO
07 Bedroom 11	NO (-53%)	NO
07 Bedroom 12	NO (-52%)	NO
07 Bedroom 13	NO (-52%)	NO
07 Bedroom 14	NO (-52%)	NO
07 Bedroom 15	NO (-54%)	NO
07 Bedroom 16	NO (-52%)	NO
07 Bedroom 17	NO (-53%)	NO
07 Bedroom 18	NO (-52%)	NO
07 Bedroom 19	NO (-52%)	NO
07 Bedroom 20	NO (-56%)	NO
07 Studio 1	NO (-93%)	NO
07 Bedroom 21	NO (-54%)	NO
07 Bedroom 22	NO (-53%)	NO
07 Bedroom 23	NO (-52%)	NO
08 Amenity	N/A	N/A
08 Bedroom 1	NO (-59%)	NO
08 Bedroom 2	NO (-58%)	NO
08 Bedroom 3	NO (-58%)	NO
08 Bedroom 4	NO (-59%)	NO
08 Bedroom 5	NO (-57%)	NO
08 Bedroom 6	NO (-58%)	NO
08 Bedroom 7	NO (-58%)	NO
08 Bedroom 8	NO (-58%)	NO
08 Bedroom 9	NO (-59%)	NO
08 Bedroom 10	NO (-84%)	NO
08 Bedroom 11	NO (-52%)	NO
08 Bedroom 12	NO (-51%)	NO
08 Bedroom 13	NO (-51%)	NO
08 Bedroom 14	NO (-51%)	NO
08 Bedroom 15	NO (-53%)	NO
08 Bedroom 16	NO (-51%)	NO
08 Bedroom 17	NO (-52%)	NO
08 Bedroom 18	NO (-51%)	NO
08 Bedroom 19	NO (-51%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
08 Bedroom 20	NO (-55%)	NO
08 Studio 1	NO (-93%)	NO
08 Bedroom 21	NO (-53%)	NO
08 Bedroom 22	NO (-53%)	NO
08 Bedroom 23	NO (-52%)	NO
09 Bedroom 1	NO (-60%)	NO
09 Bedroom 2	NO (-60%)	NO
09 Bedroom 3	NO (-59%)	NO
09 Bedroom 4	NO (-58%)	NO
09 Bedroom 5	NO (-60%)	NO
09 Bedroom 6	NO (-58%)	NO
09 Bedroom 7	NO (-58%)	NO
09 Bedroom 8	NO (-59%)	NO
09 Bedroom 9	NO (-59%)	NO
09 Bedroom 10	NO (-60%)	NO
09 Bedroom 11	NO (-54%)	NO
09 Bedroom 12	NO (-60%)	NO
09 Bedroom 13	NO (-55%)	NO
09 Studio 1	NO (-88%)	NO
09 Studio 2	NO (-55%)	NO
09 Studio 3	NO (-54%)	NO
09 Studio 4	NO (-54%)	NO
09 Studio 5	NO (-54%)	NO
10 Bedroom 1	NO (-58%)	NO
10 Bedroom 2	NO (-60%)	NO
10 Bedroom 3	NO (-58%)	NO
10 Bedroom 4	NO (-58%)	NO
10 Bedroom 5	NO (-59%)	NO
10 Bedroom 6	NO (-58%)	NO
10 Bedroom 7	NO (-58%)	NO
10 Bedroom 8	NO (-58%)	NO
10 Bedroom 9	NO (-58%)	NO
10 Bedroom 10	NO (-59%)	NO
10 Bedroom 11	NO (-50%)	NO
10 Bedroom 12	NO (-56%)	NO
10 Bedroom 13	NO (-51%)	NO
10 Studio 1	NO (-87%)	NO
10 Studio 2	NO (-51%)	NO
10 Studio 3	NO (-50%)	NO
10 Studio 4	NO (-51%)	NO
10 Studio 5	NO (-50%)	NO
11 Bedroom 1	NO (-58%)	NO
11 Bedroom 2	NO (-60%)	NO
11 Bedroom 3	NO (-59%)	NO
11 Bedroom 4	NO (-59%)	NO
11 Bedroom 5	NO (-60%)	NO
11 Bedroom 6	NO (-58%)	NO
11 Bedroom 7	NO (-59%)	NO
11 Bedroom 8	NO (-59%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
11 Bedroom 9	NO (-59%)	NO
11 Bedroom 10	NO (-60%)	NO
11 Bedroom 11	NO (-50%)	NO
11 Bedroom 12	NO (-57%)	NO
11 Bedroom 13	NO (-51%)	NO
11 Studio 1	NO (-87%)	NO
11 Studio 2	NO (-51%)	NO
11 Studio 3	NO (-50%)	NO
11 Studio 4	NO (-51%)	NO
11 Studio 5	NO (-50%)	NO
12 Bedroom 1	NO (-57%)	NO
12 Bedroom 2	NO (-59%)	NO
12 Bedroom 3	NO (-57%)	NO
12 Bedroom 4	NO (-57%)	NO
12 Bedroom 5	NO (-58%)	NO
12 Bedroom 6	NO (-57%)	NO
12 Bedroom 7	NO (-57%)	NO
12 Bedroom 8	NO (-58%)	NO
12 Bedroom 9	NO (-57%)	NO
12 Bedroom 10	NO (-59%)	NO
12 Bedroom 11	NO (-49%)	NO
12 Bedroom 12	NO (-55%)	NO
12 Bedroom 13	NO (-50%)	NO
12 Studio 1	NO (-87%)	NO
12 Studio 2	NO (-50%)	NO
12 Studio 3	NO (-48%)	NO
12 Studio 4	NO (-49%)	NO
12 Studio 5	NO (-48%)	NO
13 Bedroom 1	NO (-59%)	NO
13 Bedroom 2	NO (-59%)	NO
13 Studio 1	NO (-71%)	NO
13 Studio 2	NO (-61%)	NO
13 Studio 3	NO (-69%)	NO
13 Studio 4	NO (-69%)	NO
13 Studio 5	NO (-75%)	NO
13 Studio 6	NO (-77%)	NO
13 Studio 7	NO (-44%)	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?	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]	6396	6396
External area [m_2]	5140	5140
Weather	MAN	MAN
Infiltration [m_3/hm_2@ 50Pa]	5	3
Average conductance [W/K]	2350	2920
Average U-value [W/m_2K]	0.46	0.57
Alpha value* [%]	29.75	29.75

* 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/m_2]

	Actual	Notional
Heating	6.6	7.65
Cooling	1.21	1.24
Auxiliary	11.52	7.62
Lighting	8.47	11.16
Hot water	29.01	32.21
Equipment*	27.4	27.4
TOTAL**	**56.82**	**59.88**

* 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	1.28	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0

Energy & CO_2 Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m_2]	41.22	41.54
Primary energy* [kWh/m_2]	170.09	165.04
Total emissions [kg/m_2]	28.1	28.9

* 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 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	5	0	1.4	0	12.1	1	0	1	0
	Notional	1.1	0	0.4	0	11.4	0.82	0	----	----
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	23.6	119.8	1.8	9.3	17.5	3.6	3.6	4	4
	Notional	13.5	131.3	1.5	10.1	8.6	2.43	3.6	----	----
[ST] Other local room heater - unfanned, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	17.3	0	4.8	0	0	1	0	1	0
	Notional	14.6	0	5	0	0	0.82	0	----	----
[ST] Other local room heater - unfanned, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	29.9	0	8.3	0	14.8	1	0	1	0
	Notional	31	0	10.5	0	10.7	0.82	0	----	----
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	0	1572	0	121.3	0	0	3.6	0	4
	Notional	0	1606	0	123.9	0	0	3.6	----	----
[ST] Other local room heater - unfanned, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	0	0	0	0	8.2	0	0	0	0
	Notional	0	0	0	0	4.8	0	0	----	----

Key to terms

Heat dem [MJ/m2] = Heating energy demand
Cool dem [MJ/m2] = Cooling energy demand
Heat con [kWh/m2] = Heating energy consumption
Cool con [kWh/m2] = Cooling energy consumption
Aux con [kWh/m2] = Auxiliary energy consumption
Heat SSEFF = Heating system seasonal efficiency (for notional building, value depends on activity glazing class)
Cool SSEER = Cooling system seasonal energy efficiency ratio
Heat gen SSEFF = Heating generator seasonal efficiency
Cool gen SSEER = Cooling generator seasonal energy efficiency ratio
ST = System type
HS = Heat source
HFT = Heating fuel type
CFT = Cooling fuel type

Key Features

The Building Control Body is advised to give particular attention to items whose specifications are better than typically expected.

Building fabric

Element	$U_{i\text{-}Typ}$	$U_{i\text{-}Min}$	Surface where the minimum value occurs*
Wall	0.23	0.15	Opaque Glazed Wall
Floor	0.2	0.2	Exposed Floor
Roof	0.15	0.15	Roof (915 - Top Floor)
Windows, roof windows, and rooflights	1.5	1.4	W02 - Fixed Glazing
Personnel doors	1.5	2.2	D06 - Louvre Over Door
Vehicle access & similar large doors	1.5	-	No vehicle doors in project
High usage entrance doors	1.5	-	No high usage entrance doors in project
$U_{i\text{-}Typ}$ = Typical individual element U-values [W/(m²K)] * There might be more than one surface where the m		inimum U-	$U_{i\text{-}Min}$ = Minimum individual element U-values [W/(m²K)] urs.

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