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No.1 Reading, 29 – 35 Station Road

Energy Statement

On behalf of **Station Road Dev Co Ltd**

Project Ref: 43102/2502 | Rev: P3 | Date: October 2018



Document Control Sheet

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Project Ref: 43102

Report Title: Energy Statement

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Date: 26/10/2018

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For and on behalf of Peter Brett Associates LLP				

Revision	Date	Description	Prepared	Reviewed	Approved
P1	12/10/2018	Draft	AP	RF	SM
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1 Executive Summary

1.1 Introduction

- 1.1.1 This report forms part of a planning application for No.1 Reading, 29 -35 Station Road and is intended to demonstrate that energy has been considered in accordance with planning policy.

1.2 Demand reduction

- 1.2.1 Energy efficiency design measures include the following.

- Non-dwellings
 - Insulated building fabric with low air permeability.
 - Glazing with suitable U-value, g-value and daylight transmittance.
 - Low energy lighting.
 - Mechanical Ventilation with Heat Recovery.
 - Power Factor Correction.
 - Building Energy Management and Monitoring Systems.

1.3 Low / Zero Carbon Energy Generation

- 1.3.1 A Combined Heat and Power (CHP) system has been proposed to supply 20kWe / 39kWth. This CHP will provide the base hot water demand for the hotel throughout the year.

1.4 Conclusion

- 1.4.1 The energy strategy for the proposed development follows the energy hierarchy set out in Section 4 of this report. Table 1 shows the CO₂ emissions at each stage.

Table 1: CO₂ emissions after each stage of the energy hierarchy

Stage	Regulated CO ₂ emissions (t/yr)	Unregulated CO ₂ emissions (t/yr)
Baseline (Part L 2013 compliant)	378.7	102.1
Demand Reduction	368.7	102.1
Low / Zero Carbon Energy Generation	328.2	102.1

2 Introduction

2.1 Description of the project

2.1.1 Demolition of existing building and erection of replacement mixed use building comprised of hotel (Class C1), office (Class B1a) and flexible ground floor retail use (Classes A1, A2, A3 or A4 use), with associated servicing from Garrard Street.

2.1.2 The key drivers for the energy strategy are as follows.

- Development control
 - Planning authority: Reading Borough Council
 - Development Type: Major
 - Building control
 - Relevant guidance (non-dwellings): Approved Document L2A (2013 edition)
 - Energy performance certification
 - Non-dwellings: 3 x Energy performance certification for Retail, Office and Hotel zones respectively
 - Environmental assessment
 - BREEAM: 3 x BREEAM 2014 Retail, Office and Hotel zones respectively
- 2.1.3 This report demonstrates Part L2A compliance and additionally considers measures for improving the energy and carbon reduction performance beyond the policy levels of Part L statutory thresholds to attain enhanced BREEAM credits for energy. This information is included for information only and the improvements over and above the Part L2A compliance level will be affirmed through detailed design development.

3 Planning policy context

3.1 Planning policy context

3.1.1 The planning policy relevant to the proposed development is summarised below.

- National – Department for Communities and Local Government
 - The revised National Planning Policy Framework (NPPF) was published by the Ministry for Housing, Communities and Local Government in July 2018. This revised Framework replaces the previous NPPF published in March 2012. It sets out the Government's planning policies for England and how these should be applied. The NPPF is a material consideration in planning decisions.
 - In terms of low carbon development, the NPPF states that:
 - *New development should be planned for in ways that:*
 - a) avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure; and*
 - b) can help to reduce greenhouse gas emissions through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards.*
 - *To help increase the use and supply of renewable and low carbon energy and heat, plans should:*
 - a) provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts);*
 - b) consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and*
 - c) identify opportunities where development can draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers.*
 - *In determining planning applications, local planning authorities should expect new developments to:*
 - a) comply with any development plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and*
 - b) take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption."*

3.2 Local – Reading Borough Council

3.2.1 The Reading Borough LDF Core Strategy was adopted in January 2008 with alterations adopted on 27th January 2015. The document sets out the Council's planning strategy for the Borough. It explains how planning and development will achieve the Reading 2020 Vision for the town, and provides a framework for how Reading can grow in a sustainable way in the future. The key relevant strategies relating to energy in this document are:

- Demonstrate how consideration has been given to securing energy for the development from a decentralised energy source, including Combined Heat and Power (CHP), biomass-fuelled heating or another form of decentralised energy (unless demonstrated that the scheme is not suitable or feasible for this form of energy provision);
- Link to existing decentralised energy provision (including a CHP plant or a district energy network) within the vicinity of the site where they exist or demonstrate why this is not feasible; and
- Maximise the use of energy-efficiency and energy conservation measures in the development's design, layout and orientation.
- Non-residential development to achieve a minimum of 50% BREEAM 'Excellent' rating and the remainder BREEAM 'Very Good';

3.2.2 The Sustainable Design and Construction SPD supplementary Planning Document adopted July 2011 states that, where the above split i.e. 50% Very Good and 50% excellent is not appropriate, major non-residential development should achieve a BREEAM rating of Very Good with an area weighted average score $\geq 62.5\%$.

3.2.3 While a BREEAM Very Good rating has no mandatory requirements for energy / CO₂ emissions, as part of the Sustainability Strategy, the project is targeting the following number of Ene 01 – Reduction of emissions points, in order to achieve the area-weighted BREEAM score $\geq 62.5\%$.

- Retail: No. 2 x Ene01 points
- Office: No. 4 x Ene01 points
- Hotel: No. 8 x Ene01 points

3.2.4 The SPD clarifies that, due to subsequent changes in the Building Regulations, which improve energy performance, the requirement in policy CS1 to offset at least 20 % of predicted carbon dioxide emissions from the estimated energy usage of the completed and occupied development.

3.2.5 Therefore, while planning policy does not directly set any quantitative targets with respect to energy and CO₂ emissions, in this case, the building's energy performance could significantly exceed that required under Part L 2013, as part of the strategy for meeting the BREEAM policy requirements.

4 Methodology

4.1 Approach

4.1.1 No. 1 Reading, 29 – 35 Station Street seeks to maximise energy efficiency through careful consideration of the masterplan design, high performance fabric and efficient building services, in accordance with Reading Borough Council Core Strategy.

4.1.2 No. 1 Reading, 29 – 35 Station Street is designed in accordance with following Energy Hierarchy:

- Reducing energy demand in the first instance.
- Low / Zero Carbon Energy Generation.

4.1.3 The Energy Hierarchy is illustrated in Figure 1 below.

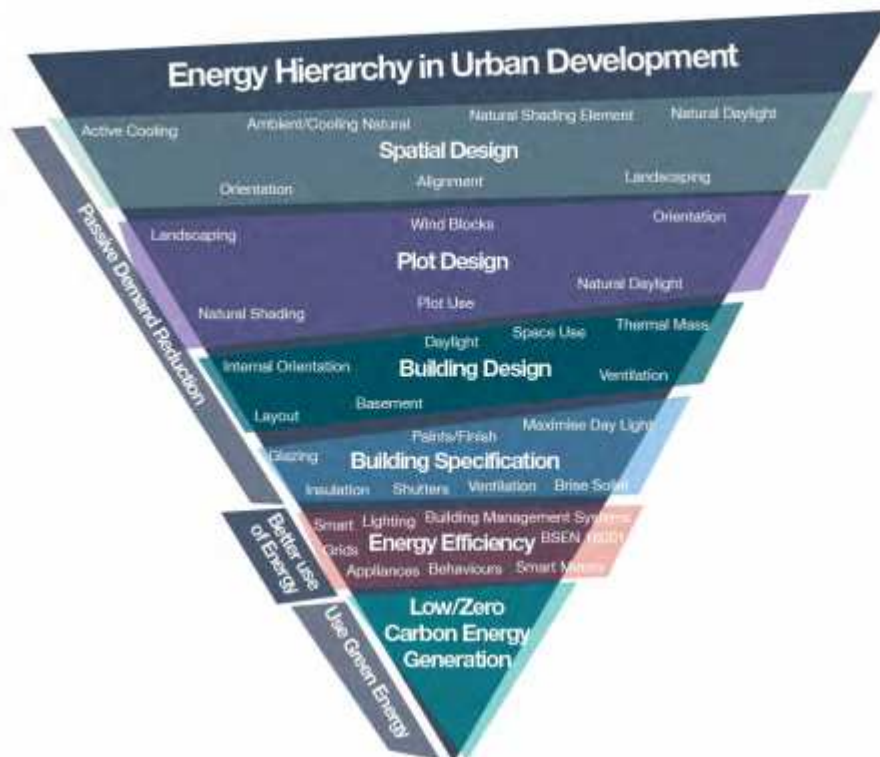


Figure 1: The Energy Hierarchy in Urban Development

4.2 Calculations

4.2.1 The calculations for No.1 Reading, 29 -35 Station Road are based on the methodology outlined below.

- Geometry
- Based on general arrangement (GA) drawings provided by the architect Broadway Malyan,
- Calculation methodology

- Non-dwellings: Approved Document L2A (2013 edition) – Level 5 calculation
- Software
 - IES Virtual Environment 2018
 - Sunlight: SunCast module
 - VE Compliance (UK and Ireland) model: Apache Sim Compliance
- End uses of energy
 - Regulated: basis of compliance calculations in this report
 - Unregulated: reported for information only

4.2.2 The purpose of the calculations is to demonstrate compliance. The approved calculation methodologies prescribe design parameters for inputs such as occupancy, weather, internal temperatures and equipment usage. Therefore, the calculations presented in this energy statement should not be taken as a prediction of expected energy consumption and CO₂ emissions.

5 Demand Reduction

5.1 Introduction

- 5.1.1 Demand reduction is typically a more cost-effective means of achieving carbon savings than providing low / zero carbon energy generation technologies. This is particularly true of passive measures (the architecture), which are simpler and have greater longevity than active systems (the building services). However, managing energy demand is only one of many design drivers of site layout and building form.

5.2 Passive Design

- 5.2.1 Criterion 3 of Part L 2013 of the Building Regulations relates to limiting the effects of heat gains in summer. For non-domestic buildings, this is implemented through a specific test in SBEM and other approved Building Regulation compliance tools and summarised in the BRUKL output report.
- 5.2.2 The results of the criterion 3 tests are summarised in Table 2

Table 2: Part L criterion 3 compliance results

Description	Sample rate	Compliance rate for sample	Projected compliance rate
Non-dwellings	100 %	100 %	100 %

5.3 Energy efficiency

New buildings other than dwellings

- 5.3.1 The proposed development incorporates energy efficiency measures sufficient to achieve compliance with *Approved Document L2A (2013 edition)*, without reliance on low and zero carbon technologies. These include the following; refer to Appendix A for more details
- Insulated building fabric with low air permeability.
 - Glazing with suitable U-value, g-value and daylight transmittance.
 - Low energy lighting.
 - Mechanical Ventilation with Heat Recovery.
 - Power Factor Correction.
 - Building Energy Management and Monitoring Systems.

5.4 Calculations

- 5.4.1 Table 3 shows that the energy efficiency measures achieve an improvement of over the minimum Part L2A compliance rating where the Building Emissions Rate $\leq$ Target Emissions Rate.

Table 3: CO₂ emissions for the demand reduction strategies

Description	Baseline (Part L2A Target emissions) – regulated (kgCO ₂ /yr)	Building emissions – regulated (kgCO ₂ /yr)	Improvement over Part L (%)	Building emissions – unregulated (kgCO ₂ /yr)
Office	32,442	29,542	8.9%	36,769
Retail	6,177	4,961	19.7%	2,097
Hotel	340,116	334,242	1.7%	63,230
Total	378,735	368,745	2.6%	102,096

5.4.2 Figure 2 shows how CO₂ emissions for the entire development are split between the regulated end uses of energy. It demonstrates that the hot water load for the building contributes a significant part of the buildings CO₂ emissions.

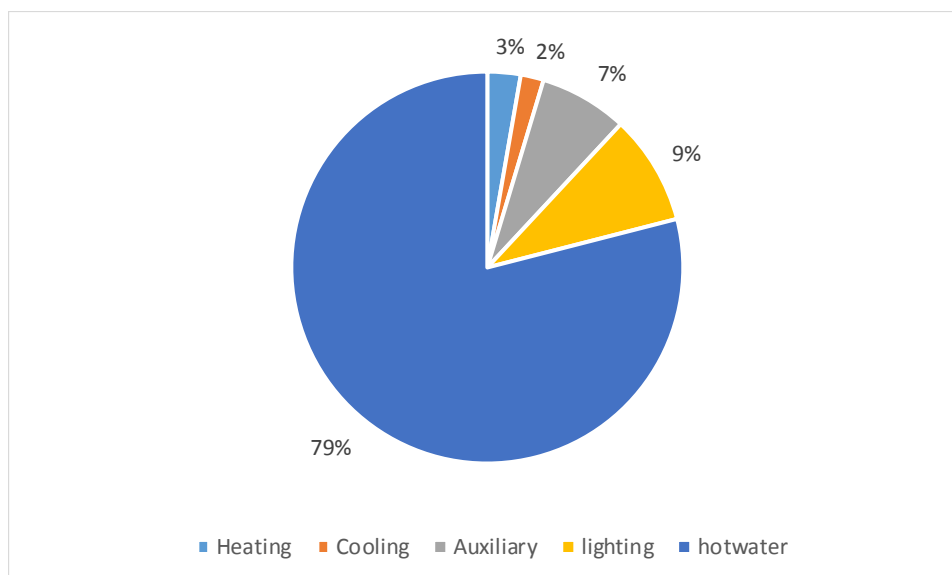


Figure 2: Annual CO₂ emissions by regulated end use

6 Low / Zero Carbon Energy Generation

6.1 Introduction

- 6.1.1 The appropriateness to the proposed development of the low and zero carbon energy technologies is summarised in Table 4.

Table 4: Appropriate low and zero carbon technologies

Technology	Appropriate	Comments
Connection to existing heating or cooling networks	No	No viable existing heating or cooling networks in the vicinity
Biomass heating, cooling and electricity	No	Site lies in air quality management area (AQMA)
Photovoltaics	No	Not feasible due to no available roof area
Solar water heating	No	Not feasible due to no available roof area
Wind	No	Building-integrated wind turbines and wind turbines sited in urban areas perform poorly due to unfavourable wind microclimate
Heat pumps	Yes	Heat pumps are incorporated as part of the demand reduction measures
CHP	Yes	Investigate feasibility

6.2 Combined heat and power

- 6.2.1 Economic viability of CHP engines is predicated on long periods of operation at constant output. Daily fluctuates in demand can be attenuated by the use of thermal storage, resulting in more uniform demand throughout the day. It is rarely practical to store high-grade heat, such as that produced by CHP units, for more than 24 hours, as the size of the store becomes excessively large.
- 6.2.2 A grid-connected installation allows surplus generation to be exported to the grid. However, there is no floor price or feed-in tariff payment, so the price paid is typically very low and based on the spot price. Between 00:00 and 07:00, electricity is available from the national grid at very low tariffs. Therefore, it is rarely economically viable to operate a CHP engine overnight or when its electrical supply exceeds onsite demand.
- 6.2.3 The heating and cooling strategy for this building is to use a VRF system which is not compatible with a CHP therefore the feasibility of a CHP is based on its capability to serve the hotel areas DHW demand.
- 6.2.4 The annual power and DHW demand profile for the hotel is shown in Figure 3.

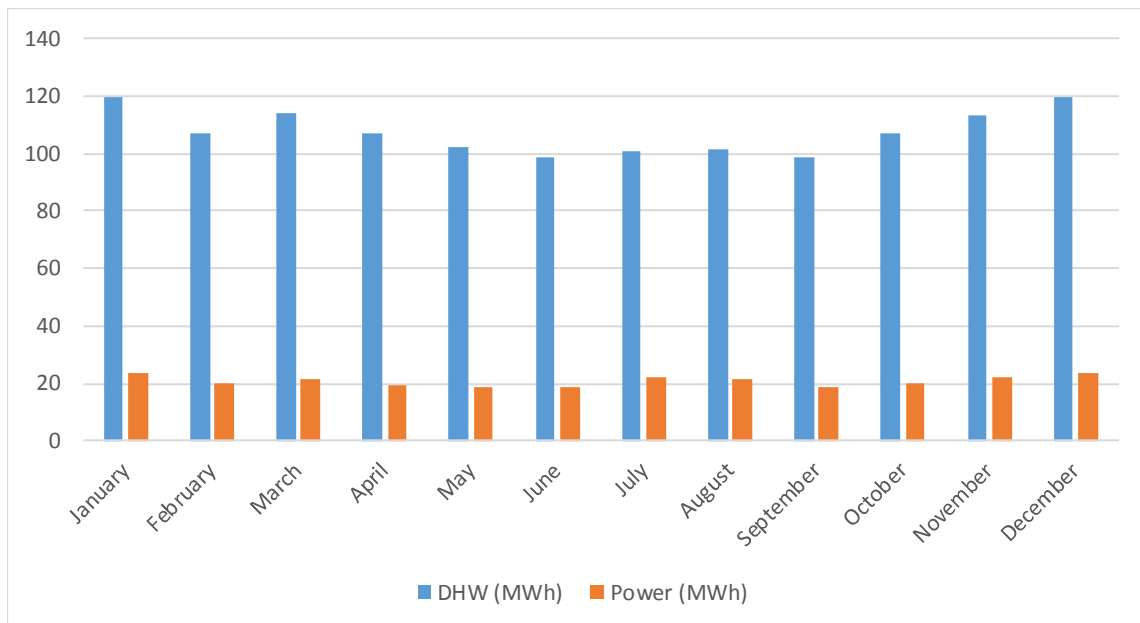


Figure 3: Monthly energy demand for the hotel

6.2.5 The proposed energy strategy for No.1 Reading, 29 – 35 Station Road is to serve the DHW for the hotel with a CHP with thermal storage.

6.2.6 Based upon the profile and the BREEAM ENE-1 credit targets a CHP has been proposed to supply 20kW_e / 39kW_{th}. This CHP will provide the base hot water demand throughout the year.

6.3 Calculations

6.3.1 The combined reduction in CO₂ emissions from the demand reduction strategies listed in Section 5 and the CHP system connected to the Hotel is outlined in Table 5.

6.3.2 The Office and Retail Building Emissions Rate is the same as Table 3 as these are not connected to the CHP system.

6.3.3 The total reduction in CO₂ emissions due to the Low / Zero Carbon Energy Generation is 19%.

Table 5: CO₂ emissions for the Hotel from Low / Zero Carbon Energy Generation and demand reduction

Description	Baseline (Part L2A Target emissions) – regulated (kgCO ₂ /yr)	Building emissions – regulated (kgCO ₂ /yr)	Improvement over Part L (%)	Building/ dwelling emissions – unregulated (kgCO ₂ /yr)
Hotel	340,116	293,710	13.6%	63,230
Office	32,442	29,542	8.9%	36,769
Retail	6,177	4,961	19.7%	2,097
Total	378,735	328,213	13.3%	102,096

7 Conclusion

7.1 Compliance

7.1.1 Figure 4 illustrates the hierarchical approach to energy strategy adopted and the resultant reduction in overall CO₂ emissions.

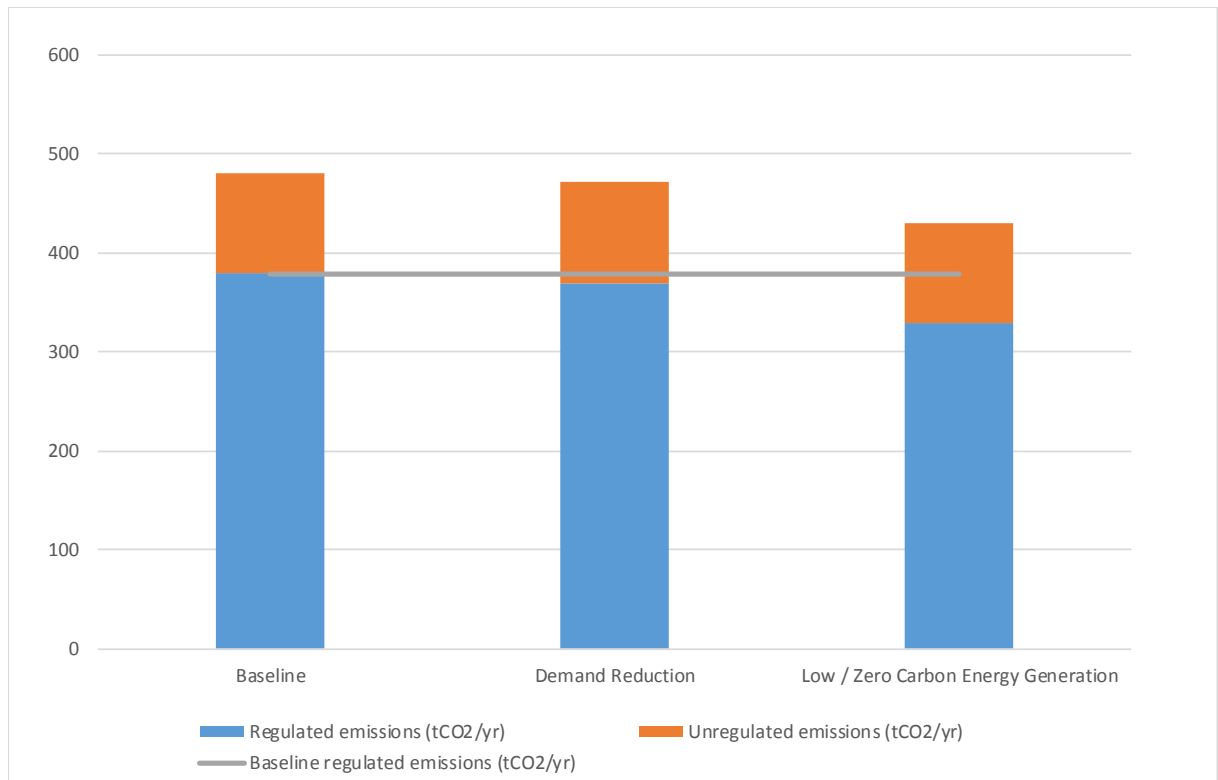


Figure 4: Hierarchical approach to reducing CO₂ emissions

7.1.2 The key metrics for regulated emissions are listed below.

- The total carbon saving attributable to demand reduction measures: 2.6%
- The carbon saving attributable to low / zero carbon energy generation: 10.7 %
- The proposed development's overall improvement over the baseline: 13.3 %

7.1.3 The proposed development would comply with the Building Regulations by following the guidance set out in Approved Document L1A (2013 edition) and Approved Document L2A (2013 edition).

7.1.4 The proposed development would meet The Reading Borough LDF Core Strategy by:

- Including the proposal to install a Combined Heat and Power (CHP) scheme to provide the base DHW load for the hotel.
- The feasibility to link to existing decentralised energy provision (including a CHP plant or a district energy network) within the vicinity of the site where they exist has been investigated.
- The inclusion of energy demand measures and low / zero carbon energy generation to assist the development achieve a BREEAM rating of Very Good with an area weighted average score $\geq$ 62.5%.

- Note: the Sustainable Design and Construction SPD clarifies that, due to subsequent changes in the Building Regulations, which improve energy performance, the requirement in policy CS1 to offset at least 20 % of predicted carbon dioxide emissions from the estimated energy usage of the completed and occupied development.
- 7.1.5 Individual BRUKL documents for the Retail, Office and Hotel areas have been generated and included within Appendix C of this report.

Appendix A Energy efficiency measures

A.1.1 The energy performance specification at the lean stage, i.e. including energy efficiency measures but excluding low and zero carbon technologies, is summarised in Table 6 for non-dwellings.

Table 6: Energy efficiency measures for new non-dwellings

Energy efficiency measure	Baseline - ADL2A (2010) 2013 edition incorporating 2016 amendments	Proposals
Building fabric		
Roofs	U-value 0.18 W/m ² K; thermal capacity 21.8 kJ/m ² K (1.40 kJ/m ² K if metal clad)	U-value 0.18 W/m ² K; thermal capacity 99kJ/m ² K
Walls	U-value 0.26 W/m ² K; thermal capacity 88.3 kJ/m ² K (1.40 kJ/m ² K if metal clad)	U-value 0.26W/m ² K; thermal capacity 22 kJ/m ² K
Ground and exposed floors	U-value ≤ 0.22 W/m ² K	U-value 0.22 W/m ² K
Windows, roof windows and rooflights	Windows: U-value 1.80 W/m ² K; g-value 0.40; visible light transmittance 0.71	Windows: U-value 1.6 W/m ² K; g-value 0.35; frame factor 10 %; visible light transmittance 0.71
Internal wall	U-value 1.80 W/m ² K; thermal capacity 8.8 kJ/m ² K	Internal 100mm - U-value 1.80 W/m ² K; thermal capacity 8.8 kJ/m ² K
Internal floor/ceiling	U-value 1.0 W/m ² K; thermal capacity 71.8 kJ/m ² K from above, 66.6 kJ/m ² K from below	U-value 1.0 W/m ² K; thermal capacity 95 kJ/m ² K
Air permeability	5.0 m ³ /hr/m ² @ 50 Pa	5 m ³ /hr/m ² @ 50 Pa
Fixed building services		
Central System - VRF		
UK NCM system type	Dependent on NCM system type	Split or Multi Split system
Heat recovery	Dependent on mechanical supply and extract ventilation provision Sensible efficiency 70 %, where appropriate	Thermal Wheel – seasonal efficiency 73 %,
Cooling system	Dependent on NCM system type and fuel	5.9

Heating system	Dependent on NCM activity and heating fuel Gas (non-radiant), SCoP 0.7920-0.8100	4.4
Auxiliary Energy Value (AEV)	Dependent on NCM activity and NCM HVAC system	Specific fan power (zonal) 0.9 W/(l/s)
Demand control of ventilation	None	Demand control based on speed control
General Services		
Domestic Hot Water	Dependent on NCM activity and heating fuel Gas (non-radiant), SCoP 0.836-0.855	Gas Boiler SCoP 0.95
Management features	Electric power factor > 0.95	Electric power factor > 0.95
Metering provision	Automatic monitoring and targeting with alarms for out of range values	Automatic monitoring and targeting with alarms for out of range values
Lighting power density for Hotel	Lamp efficacy of 55 luminaire lumens per circuit-watt	General lighting: dependent on room geometry Hotel - based on lamp efficacy of using LED lights at lamp efficacy of 100lm/W Retail and Office- based on lamp efficacy of using LED lights at lamp efficacy of 60lm/W
Display Lighting	Lamp efficacy of 22 luminaire lumens per circuit-watt	General lighting: dependent on room geometry and based on lamp efficacy of using LED lights at lamp efficacy of 40lm/W
Lighting controls	Dependent on NCM activity and applicable to general lighting only (not display lighting)	Local manual switching with photoelectric dimming and time switch control with continuous parasitic power of 0.1 W/m ²)

Appendix B CHP costs

B.1.1 This appendix sets out indicative costs to allow a lifecycle cost analysis of the proposed CHP system to be developed with the cost consultant.

- All costs quoted exclude value added tax (VAT).
- All costs in parentheses are negative.
- Lifecycle cost analysis requires estimates of inflation for the various costs.
- Lifecycle cost analysis requires discount rate to be agreed with client.
- CHP is not eligible for feed-in tariff or renewable heat incentive payments.

B.1.2 In the case of CHP, the lifecycle cost should be compared to that of the baseline alternative.

Table 7: indicative life expectancy for major items of equipment

Item	Indicative life (years)	Source
gas fired CHP	20	CIBSE Guide M

Table 8: indicative capital cost for major items of equipment

Item	Size/rating	Indicative cost (£)	Source
gas fired CHP (supply only)	20.0 kW _e 39.0 kW _t	TBC	TBC

Table 9: indicative annual operational cost for major items of equipment

Item	Rate	Indicative cost (£/yr)	Source
Maintenance	1.6 p/kWh _e	803	Carbon Trust GPG388
Fuel (gas input)	(2.375) p/kWh	780	DECC QEP table 3.4.2 (Q2 2017 - small consumer, excluding CCL)
Fuel (gas displaced)	(2.523) p/kWh	(510)	DECC QEP table 3.4.2 (Q2 2017 - small consumer)
Fuel (electricity displaced)	(13.31) p/kWh	(1,360)	DECC QEP table 3.4.2 (Q2 2017 - small consumer)

Appendix C BRUKL Documents

C.1.1 There are four BRUKL output documents attached.

- Retail
- Offices
- Hotel
- Hotel – Including CHP

C.1.2 These documents provide the outline energy performance specification for the building.

Project name

43102 - No.1 Reading Retail 181016**As designed****Date:** Tue Oct 16 12:10:57 2018

Administrative information

Building Details

Address: 29-35 Station Road, Reading, RG1

Certification tool

Calculation engine: Apache**Calculation engine version:** 7.0.10**Interface to calculation engine:** IES Virtual Environment**Interface to calculation engine version:** 7.0.10**BRUKL compliance check version:** v5.4.b.0

Owner Details

Name: Name**Telephone number:** Phone**Address:** Street Address, City, Postcode

Certifier details

Name: Name**Telephone number:** Phone**Address:** Street Address, City, PostcodeCriterion 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	31.5
Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	31.5
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	25.3
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	0.26	0.26	GF000003:Surf[5]
Floor	0.25	0.22	0.22	GF000003:Surf[9]
Roof	0.25	-	-	UNKNOWN
Windows***, roof windows, and rooflights	2.2	1.6	1.6	GF000003:Surf[0]
Personnel doors	2.2	-	-	No Personnel doors in building
Vehicle access & similar large doors	1.5	-	-	No Vehicle access doors in building
High usage entrance doors	3.5	-	-	No High usage entrance doors in building
U _{a-Limit} = Limiting area-weighted average U-values [W/(m ² K)] U _{a-Calc} = Calculated area-weighted average U-values [W/(m ² K)] U _{i-Calc} = Calculated maximum individual element U-values [W/(m ² K)] * There might be more than one surface where the maximum U-value occurs. ** Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows. *** Display windows and similar glazing are excluded from the U-value check. N.B.: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.				

Air Permeability	Worst acceptable standard	This building
m ³ /(h.m ²) at 50 Pa	10	5

Building services

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

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	YES
Whole building electric power factor achieved by power factor correction	>0.95

1- Hotel system

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.4	5.9	0	0	0.73
Standard value	2.5*	3.2	N/A	N/A	0.65
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards.					

1- hot water office and Retail

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

Local mechanical ventilation, exhaust, and terminal units

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

Zone name	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			
GF Retail	-	0.9	0	-	-	-	-	-	-	-	-	N/A

General lighting and display lighting

		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
Standard value		60	60	22	
GF Retail		-	60	40	4150

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?
GF Retail	NO (-62.5%)	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?	YES
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]	196.1	196.1
External area [m ²]	328.1	328.1
Weather	SWI	SWI
Infiltration [m ³ /hm ² @ 50Pa]	5	3
Average conductance [W/K]	146.13	130.48
Average U-value [W/m ² K]	0.45	0.4
Alpha value* [%]	10	10

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

Building Use

% Area Building Type

100	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
	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	3.59	3.72
Cooling	2.72	4.73
Auxiliary	3.06	3.06
Lighting	38.88	49.54
Hot water	1.7	1.86
Equipment*	20.26	20.26
TOTAL **	49.95	62.91

* Energy used by equipment does not count towards the total for consumption or calculating emissions.

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

Energy Production by Technology [kWh/m²]

	Actual	Notional
Photovoltaic systems	0	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	96.95	98.74
Primary energy* [kWh/m ²]	160.25	195.89
Total emissions [kg/m ²]	25.3	31.5

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

HVAC Systems Performance										
System Type	Heat dem MJ/m2	Cool dem MJ/m2	Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEFF	Cool SSEER	Heat gen SEFF	Cool gen SEER	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	54.5	42.4	3.6	2.7	3.1	4.22	4.33	4.4	5.9
	Notional	0	0	0	0	0	0	0	----	----
[ST] No Heating or Cooling										
	Actual	0	0	0	0	0	0	0	0	0
	Notional	34.2	64.5	3.7	4.7	3.1	2.56	3.79	----	----

Key to terms

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

Key Features

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

Building fabric

Element	U _{i-Typ}	U _{i-Min}	Surface where the minimum value occurs*
Wall	0.23	0.26	GF000003:Surf[5]
Floor	0.2	0.22	GF000003:Surf[9]
Roof	0.15	-	UNKNOWN
Windows, roof windows, and rooflights	1.5	1.6	GF000003:Surf[0]
Personnel doors	1.5	-	No Personnel doors in building
Vehicle access & similar large doors	1.5	-	No Vehicle access doors in building
High usage entrance doors	1.5	-	No High usage entrance doors in building
U _{i-Typ} = Typical individual element U-values [W/(m²K)]		U _{i-Min} = Minimum individual element U-values [W/(m²K)]	
* There might be more than one surface where the minimum U-value occurs.			

Air Permeability	Typical value	This building
m³/(h.m²) at 50 Pa	5	5

Project name

43102 - No.1 Reading Office 181016**As designed****Date:** Tue Oct 16 11:04:14 2018

Administrative information

Building Details

Address: 29-35 Station Road, Reading, RG1

Certification tool

Calculation engine: Apache**Calculation engine version:** 7.0.10**Interface to calculation engine:** IES Virtual Environment**Interface to calculation engine version:** 7.0.10**BRUKL compliance check version:** v5.4.b.0

Owner Details

Name: Name**Telephone number:** Phone**Address:** Street Address, City, Postcode

Certifier details

Name: Name**Telephone number:** Phone**Address:** Street Address, City, PostcodeCriterion 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	17.9
Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	17.9
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	16.3
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	0.26	0.26	4F00000A:Surf[3]
Floor	0.25	-	-	UNKNOWN
Roof	0.25	0.18	0.18	20000000:Surf[0]
Windows***, roof windows, and rooflights	2.2	1.6	1.6	4F00000A:Surf[0]
Personnel doors	2.2	-	-	No Personnel doors in building
Vehicle access & similar large doors	1.5	-	-	No Vehicle access doors in building
High usage entrance doors	3.5	-	-	No High usage entrance doors in building
U _a -Limit = Limiting area-weighted average U-values [W/(m ² K)] U _a -Calc = Calculated area-weighted average U-values [W/(m ² K)] U _i -Calc = Calculated maximum individual element U-values [W/(m ² K)] * There might be more than one surface where the maximum U-value occurs. ** Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows. *** Display windows and similar glazing are excluded from the U-value check. N.B.: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.				

Air Permeability	Worst acceptable standard	This building
m ³ /(h.m ²) at 50 Pa	10	5

Building services

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

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	YES
Whole building electric power factor achieved by power factor correction	>0.95

1- Hotel system

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.4	5.9	0	0	0.73
Standard value	2.5*	3.2	N/A	N/A	0.65
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards.					

1- hot water office and Retail

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

Local mechanical ventilation, exhaust, and terminal units

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

Zone name	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		
#17F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#17F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#17F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#17F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#19F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#19F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#19F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#19F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#18F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#18F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#18F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#18F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#20F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#20F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#20F North Stairs	-	0.9	0	-	-	-	-	-	-	-	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
#20F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#21F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#21F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#21F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#21F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#21F Office Space South	-	0.9	0	-	-	-	-	-	-	-	N/A
#21F Office Space Center	-	0.9	0	-	-	-	-	-	-	-	N/A
#21F Office Space West	-	0.9	0	-	-	-	-	-	-	-	N/A
#21F Office Space North	-	0.9	0	-	-	-	-	-	-	-	N/A
#21F Office Space NE	-	0.9	0	-	-	-	-	-	-	-	N/A
#21F Office Space East	-	0.9	0	-	-	-	-	-	-	-	N/A
#21F Office Space SE	-	0.9	0	-	-	-	-	-	-	-	N/A
#20F Office Space South	-	0.9	0	-	-	-	-	-	-	-	N/A
#20F Office Space Center	-	0.9	0	-	-	-	-	-	-	-	N/A
#20F Office Space West	-	0.9	0	-	-	-	-	-	-	-	N/A
#20F Office Space North	-	0.9	0	-	-	-	-	-	-	-	N/A
#20F Office Space NE	-	0.9	0	-	-	-	-	-	-	-	N/A
#20F Office Space East	-	0.9	0	-	-	-	-	-	-	-	N/A
#20F Office Space SE	-	0.9	0	-	-	-	-	-	-	-	N/A
#19F Office Space South	-	0.9	0	-	-	-	-	-	-	-	N/A
#19F Office Space Center	-	0.9	0	-	-	-	-	-	-	-	N/A
#19F Office Space West	-	0.9	0	-	-	-	-	-	-	-	N/A
#19F Office Space North	-	0.9	0	-	-	-	-	-	-	-	N/A
#19F Office Space NE	-	0.9	0	-	-	-	-	-	-	-	N/A
#19F Office Space East	-	0.9	0	-	-	-	-	-	-	-	N/A
#19F Office Space SE	-	0.9	0	-	-	-	-	-	-	-	N/A
#18F Office Space NE	-	0.9	0	-	-	-	-	-	-	-	N/A
#18F Office Space North	-	0.9	0	-	-	-	-	-	-	-	N/A
#18F Office Space South	-	0.9	0	-	-	-	-	-	-	-	N/A
#18F Office Space East	-	0.9	0	-	-	-	-	-	-	-	N/A
#18F Office Space SE	-	0.9	0	-	-	-	-	-	-	-	N/A
#18F Office Space Center	-	0.9	0	-	-	-	-	-	-	-	N/A
#18F Office Space West	-	0.9	0	-	-	-	-	-	-	-	N/A
#17F Office Space NE	-	0.9	0	-	-	-	-	-	-	-	N/A
#17F Office Space North	-	0.9	0	-	-	-	-	-	-	-	N/A
#17F Office Space South	-	0.9	0	-	-	-	-	-	-	-	N/A
#17F Office Space East	-	0.9	0	-	-	-	-	-	-	-	N/A
#17F Office Space SE	-	0.9	0	-	-	-	-	-	-	-	N/A
#17F Office Space Center	-	0.9	0	-	-	-	-	-	-	-	N/A
#17F Office Space West	-	0.9	0	-	-	-	-	-	-	-	N/A

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#17F South Stairs		-	60	-	75

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#17F South Lifts and risers		-	60	-	66
#17F North Stairs		-	60	-	65
#17F Lobby		-	60	-	74
#19F South Stairs		-	60	-	75
#19F South Lifts and risers		-	60	-	66
#19F North Stairs		-	60	-	65
#19F Lobby		-	60	-	74
#18F South Stairs		-	60	-	75
#18F South Lifts and risers		-	60	-	66
#18F North Stairs		-	60	-	65
#18F Lobby		-	60	-	74
#20F South Stairs		-	60	-	75
#20F South Lifts and risers		-	60	-	66
#20F North Stairs		-	60	-	65
#20F Lobby		-	60	-	74
#21F South Stairs		-	60	-	75
#21F South Lifts and risers		-	60	-	66
#21F North Stairs		-	60	-	65
#21F Lobby		-	60	-	74
#21F Office Space South		60	-	-	145
#21F Office Space Center		60	-	-	824
#21F Office Space West		60	-	-	535
#21F Office Space North		60	-	-	225
#21F Office Space NE		60	-	-	248
#21F Office Space East		60	-	-	668
#21F Office Space SE		60	-	-	159
#20F Office Space South		60	-	-	145
#20F Office Space Center		60	-	-	824
#20F Office Space West		60	-	-	535
#20F Office Space North		60	-	-	225
#20F Office Space NE		60	-	-	248
#20F Office Space East		60	-	-	668
#20F Office Space SE		60	-	-	159
#19F Office Space South		60	-	-	145
#19F Office Space Center		60	-	-	824
#19F Office Space West		60	-	-	535
#19F Office Space North		60	-	-	225
#19F Office Space NE		60	-	-	248
#19F Office Space East		60	-	-	668
#19F Office Space SE		60	-	-	159
#18F Office Space NE		60	-	-	246
#18F Office Space North		60	-	-	227
#18F Office Space South		60	-	-	146

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	Luminaire	Lamp	Display lamp	General lighting [W]
Standard value	60	60	22	
#18F Office Space East	60	-	-	663
#18F Office Space SE	60	-	-	158
#18F Office Space Center	60	-	-	920
#18F Office Space West	60	-	-	445
#17F Office Space NE	60	-	-	246
#17F Office Space North	60	-	-	227
#17F Office Space South	60	-	-	146
#17F Office Space East	60	-	-	663
#17F Office Space SE	60	-	-	158
#17F Office Space Center	60	-	-	920
#17F Office Space West	60	-	-	445

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?
#17F South Stairs	NO (-60.2%)	NO
#17F South Lifts and risers	N/A	N/A
#17F North Stairs	NO (-67.2%)	NO
#17F Lobby	NO (-61.6%)	NO
#19F South Stairs	NO (-78.2%)	NO
#19F South Lifts and risers	N/A	N/A
#19F North Stairs	NO (-69.7%)	NO
#19F Lobby	NO (-43.6%)	NO
#18F South Stairs	NO (-60.2%)	NO
#18F South Lifts and risers	N/A	N/A
#18F North Stairs	NO (-67.2%)	NO
#18F Lobby	NO (-61.6%)	NO
#20F South Stairs	NO (-78.2%)	NO
#20F South Lifts and risers	N/A	N/A
#20F North Stairs	NO (-69.7%)	NO
#20F Lobby	NO (-43.6%)	NO
#21F South Stairs	NO (-78.2%)	NO
#21F South Lifts and risers	N/A	N/A
#21F North Stairs	NO (-69.7%)	NO
#21F Lobby	NO (-43.6%)	NO
#21F Office Space South	NO (-33.6%)	NO
#21F Office Space Center	NO (-54.6%)	NO
#21F Office Space West	NO (-24.1%)	NO
#21F Office Space North	NO (-22.8%)	NO
#21F Office Space NE	NO (-41.5%)	NO
#21F Office Space East	NO (-27.8%)	NO
#21F Office Space SE	NO (-38.5%)	NO
#20F Office Space South	NO (-33.6%)	NO
#20F Office Space Center	NO (-54.6%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
#20F Office Space West	NO (-24.2%)	NO
#20F Office Space North	NO (-22.8%)	NO
#20F Office Space NE	NO (-41.6%)	NO
#20F Office Space East	NO (-27.8%)	NO
#20F Office Space SE	NO (-38.5%)	NO
#19F Office Space South	NO (-33.6%)	NO
#19F Office Space Center	NO (-54.6%)	NO
#19F Office Space West	NO (-24.2%)	NO
#19F Office Space North	NO (-22.8%)	NO
#19F Office Space NE	NO (-41.6%)	NO
#19F Office Space East	NO (-27.9%)	NO
#19F Office Space SE	NO (-38.5%)	NO
#18F Office Space NE	NO (-45.3%)	NO
#18F Office Space North	NO (-41%)	NO
#18F Office Space South	NO (-30.8%)	NO
#18F Office Space East	NO (-32.4%)	NO
#18F Office Space SE	NO (-41.7%)	NO
#18F Office Space Center	NO (-67.7%)	NO
#18F Office Space West	NO (-37.3%)	NO
#17F Office Space NE	NO (-45.3%)	NO
#17F Office Space North	NO (-41%)	NO
#17F Office Space South	NO (-30.8%)	NO
#17F Office Space East	NO (-32.4%)	NO
#17F Office Space SE	NO (-41.7%)	NO
#17F Office Space Center	NO (-67.7%)	NO
#17F Office Space West	NO (-37.3%)	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?	NO

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Area [m ²]	1812.4	1812.4
External area [m ²]	1672.2	1672.2
Weather	SWI	SWI
Infiltration [m ³ /hm ² @ 50Pa]	5	3
Average conductance [W/K]	1282.2	1084.34
Average U-value [W/m ² K]	0.77	0.65
Alpha value* [%]	10.05	10

* 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
99	B1 Offices and Workshop businesses
	B2 to B7 General Industrial and Special Industrial Groups
	B8 Storage or Distribution
1	C1 Hotels
	C2 Residential Institutions: Hospitals and Care Homes
	C2 Residential Institutions: Residential schools
	C2 Residential Institutions: Universities and colleges
	C2A Secure Residential Institutions
	Residential spaces
	D1 Non-residential Institutions: Community/Day Centre
	D1 Non-residential Institutions: Libraries, Museums, and Galleries
	D1 Non-residential Institutions: Education
	D1 Non-residential Institutions: Primary Health Care Building
	D1 Non-residential Institutions: Crown and County Courts
	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	3.74	3.67
Cooling	5.95	8.74
Auxiliary	2.13	2.13
Lighting	18.14	19.22
Hot water	2.23	2.45
Equipment*	34.09	34.09
TOTAL **	32.18	36.2

* Energy used by equipment does not count towards the total for consumption or calculating emissions.

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

Energy Production by Technology [kWh/m²]

	Actual	Notional
Photovoltaic systems	0	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	149.56	152.95
Primary energy* [kWh/m ²]	107.52	114.72
Total emissions [kg/m ²]	16.3	17.9

* 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 SSEFF	Cool SSEER	Heat gen SEFF	Cool gen SEER	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	56.8	92.8	3.7	5.9	2.1	4.22	4.33	4.4	5.9
	Notional	0	0	0	0	0	0	0	----	----
[ST] No Heating or Cooling										
	Actual	0	0	0	0	0	0	0	0	0
	Notional	33.8	119.2	3.7	8.7	2.1	2.56	3.79	----	----

Key to terms

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

Key Features

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

Building fabric

Element	U _{i-Typ}	U _{i-Min}	Surface where the minimum value occurs*
Wall	0.23	0.26	4F00000A:Surf[3]
Floor	0.2	-	UNKNOWN
Roof	0.15	0.18	20000000:Surf[0]
Windows, roof windows, and rooflights	1.5	1.6	4F00000A:Surf[0]
Personnel doors	1.5	-	No Personnel doors in building
Vehicle access & similar large doors	1.5	-	No Vehicle access doors in building
High usage entrance doors	1.5	-	No High usage entrance doors in building
U _{i-Typ} = Typical individual element U-values [W/(m²K)]		U _{i-Min} = Minimum individual element U-values [W/(m²K)]	
* There might be more than one surface where the minimum U-value occurs.			

Air Permeability	Typical value	This building
m³/(h.m²) at 50 Pa	5	5

Project name

43102 - No.1 Reading Hotel**As designed****Date:** Wed Oct 03 13:03:15 2018**Administrative information****Building Details****Address:** 29-35 Station Road, Reading, RG1**Owner Details****Name:** Name**Telephone number:** Phone**Address:** Street Address, City, Postcode**Certification tool****Calculation engine:** Apache**Calculation engine version:** 7.0.10**Interface to calculation engine:** IES Virtual Environment**Interface to calculation engine version:** 7.0.10**BRUKL compliance check version:** v5.4.b.0**Certifier details****Name:** Name**Telephone number:** Phone**Address:** Street Address, City, Postcode**Criterion 1: The calculated CO₂ emission rate for the building must not exceed the target**

CO ₂ emission rate from the notional building, kgCO ₂ /m ² .annum	57.9
Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	57.9
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	56.9
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	0.25	0.26	GF000000:Surf[1]
Floor	0.25	0.13	0.22	GF000000:Surf[0]
Roof	0.25	0.18	0.18	GF000005:Surf[1]
Windows***, roof windows, and rooflights	2.2	1.6	1.6	GF000005:Surf[3]
Personnel doors	2.2	-	-	No Personnel doors in building
Vehicle access & similar large doors	1.5	-	-	No Vehicle access doors in building
High usage entrance doors	3.5	-	-	No High usage entrance doors in building
U _a -Limit = Limiting area-weighted average U-values [W/(m ² K)] U _a -Calc = Calculated area-weighted average U-values [W/(m ² K)] U _i -Calc = Calculated maximum individual element U-values [W/(m ² K)]				
* There might be more than one surface where the maximum U-value occurs. ** Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows. *** Display windows and similar glazing are excluded from the U-value check. N.B.: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.				

Air Permeability	Worst acceptable standard	This building
m ³ /(h.m ²) at 50 Pa	10	5

Building services

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

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	YES
Whole building electric power factor achieved by power factor correction	>0.95

1- Hotel system

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.4	5.9	0	0	0.73
Standard value	2.5*	3.2	N/A	N/A	0.65
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types ≤12 kW output, refer to EN 14825 for limiting standards.					

1- hot water Hotel

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	0.95	0.003
Standard value	0.8	N/A

Local mechanical ventilation, exhaust, and terminal units

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

Zone name	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			
GF South Stairs	-	0.9	0	-	-	-	-	-	-	-	-	N/A
GF South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	-	N/A
GF Lobby	-	0.9	0	-	-	-	-	-	-	-	-	N/A
GF North Stairs	-	0.9	0	-	-	-	-	-	-	-	-	N/A
#1F South Stairs	-	0.9	0	-	-	-	-	-	-	-	-	N/A
#1F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	-	N/A
#1F North Stairs	-	0.9	0	-	-	-	-	-	-	-	-	N/A
#1F Lobby	-	0.9	0	-	-	-	-	-	-	-	-	N/A
#1F Lobby	-	0.9	0	-	-	-	-	-	-	-	-	N/A
#2F South Stairs	-	0.9	0	-	-	-	-	-	-	-	-	N/A
#2F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	-	N/A
#2F North Stairs	-	0.9	0	-	-	-	-	-	-	-	-	N/A
#2F Lobby	-	0.9	0	-	-	-	-	-	-	-	-	N/A
#2F Resturant	-	0.9	0	-	-	-	-	-	-	-	-	N/A
#2F Toilets	-	0.9	0	-	-	-	-	-	-	-	-	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
#2F Store	-	0.9	0	-	-	-	-	-	-	-	N/A
#2F Kitchen	-	0.9	0	-	-	-	-	-	-	-	N/A
#2F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#3F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#3F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#3F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#3F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
GF plant /gen	-	0.9	0	-	-	-	-	-	-	-	N/A
#1F Bar Lounge	-	0.9	0	-	-	-	-	-	-	-	N/A
#1FStaff Office	-	0.9	0	-	-	-	-	-	-	-	N/A
#1F Staff Office	-	0.9	0	-	-	-	-	-	-	-	N/A
#1F Toilets	-	0.9	0	-	-	-	-	-	-	-	N/A
#1F Acc Hotel Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#1F Hotel Acc Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#1F Hotel Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#1F Hotel Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#1F Reception	-	0.9	0	-	-	-	-	-	-	-	N/A
#2F Toilets	-	0.9	0	-	-	-	-	-	-	-	N/A
#2F Hotel Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#2F Hotel Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#2F Hotel Acc Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#2F Hotel Acc Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	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	
#4F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#4F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#4F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#4F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#4F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#4F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#4F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#4F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#4F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#4F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A	
#4F Hotel Acc Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#4F Hotel Acc Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#4F Hotel ##12 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#4F Hotel ##12 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#4F Hotel ##11 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#4F Hotel ##11 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#4F Hotel Store	-	0.9	0	-	-	-	-	-	-	-	N/A	
#4F Hotel Circ	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	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	
#5F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#5F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#6F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A	
#7F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A	
#7F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A	
#7F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A	
#7F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A	
#7F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#7F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	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
#7F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	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		
#8F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	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
#9F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#10F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A
#11F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#11F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#11F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#11F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#11F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#11F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#11F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#11F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#11F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#11F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#11F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	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	
#11F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	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	
#12F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#13F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A	
#14F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A	
#14F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A	
#14F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A	
#14F Lobby	-	0.9	0	-	-	-	-	-	-	-	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
#14F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	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
#15F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	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
#15F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
GF South Stairs	-	-	100	-	77
GF South Lifts and risers	-	-	100	-	71
GF Lobby	-	-	100	100	253
GF North Stairs	-	-	100	-	70
#1F South Stairs	-	-	100	-	65
#1F South Lifts and risers	-	-	100	-	57
#1F North Stairs	-	-	100	-	56
#1F Lobby	-	-	100	-	66
#1F Lobby	-	-	100	-	64
#2F South Stairs	-	-	100	-	65
#2F South Lifts and risers	-	-	100	-	57
#2F North Stairs	-	-	100	-	56
#2F Lobby	-	-	100	-	66
#2F Resturant	-	-	100	100	633
#2F Toilets	-	75	-	-	17
#2F Store	-	75	-	-	15
#2F Kitchen	-	-	100	-	607
#2F Lobby	-	-	100	-	64
#3F South Stairs	-	-	100	-	72
#3F South Lifts and risers	-	-	100	-	65
#3F North Stairs	-	-	100	-	64
#3F Lobby	-	-	100	-	76
GF plant /gen	-	75	-	-	155
#1F Bar Lounge	-	-	100	100	230
#1FStaff Office	-	75	-	-	522
#1F Staff Office	-	75	-	-	622
#1F Toilets	-	-	100	-	102
#1F Acc Hotel Bathroom	-	-	100	-	44
#1F Hotel Acc Bedroom	-	-	100	-	54
#1F Hotel Bedroom	-	-	100	-	32
#1F Hotel Bathroom	-	-	100	-	63
#1F Reception	-	-	100	100	148
#2F Toilets	-	-	100	-	102
#2F Hotel Bedroom	-	-	100	-	52
#2F Hotel Bathroom	-	-	100	-	26
#2F Hotel Acc Bathroom	-	-	100	-	29

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#2F Hotel Acc Bedroom		-	100	-	54
#4F South Stairs		-	100	-	59
#4F South Lifts and risers		-	100	-	51
#4F North Stairs		-	100	-	50
#4F Lobby		-	100	-	56
#4F Corridor Cub		75	-	-	7
#4F Room ##1 Bedroom		-	100	-	38
#4F Corridor Cub		75	-	-	7
#4F Room ##2 Bathroom		-	100	-	20
#4F Room ##2 Bedroom		-	100	-	37
#4F Room ##3 Bedroom		-	100	-	37
#4F Room ##4 Bathroom		-	100	-	20
#4F Room ##4 Bedroom		-	100	-	38
#4F Room ##5 Bathroom		-	100	-	21
#4F Room ##5 Bedroom		-	100	-	37
#4F Room ##6 Bathroom		-	100	-	20
#4F Room ##6 Bedroom		-	100	-	38
#4F Room ##7 Bathroom		-	100	-	20
#4F Room ##7 Bedroom		-	100	-	40
#4F Room ##9 Bedroom		-	100	-	38
#4F Room ##9 Bathroom		-	100	-	21
#4F Room ##8 Bathroom		-	100	-	20
#4F Room ##8 Bedroom		-	100	-	37
#4F ##1 bathroom		-	100	-	20
#4F Corr Cub		75	-	-	4
#4F ##3 Bathroom		-	100	-	21
#4F Corr Cub		75	-	-	7
#4F Corr Cub		75	-	-	7
#4F Room ##10 Bathroom		-	100	-	23
#4F Room ##10 Bedroom		-	100	-	40
#4F Corr Cub		75	-	-	3
#4F Corridor		-	100	-	142
#4F Hotel Acc Bathroom		-	100	-	23
#4F Hotel Acc Bedroom		-	100	-	44
#4F Hotel ##12 Bedroom		-	100	-	37
#4F Hotel ##12 Bathroom		-	100	-	20
#4F Hotel ##11 Bathroom		-	100	-	20
#4F Hotel ##11 Bedroom		-	100	-	38
#4F Hotel Store		75	-	-	10
#4F Hotel Circ		-	100	-	35
#5F South Stairs		-	100	-	59
#5F South Lifts and risers		-	100	-	51
#5F North Stairs		-	100	-	50

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#5F Lobby		-	100	-	56
#5F Corridor Cub		75	-	-	7
#5F Room ##1 Bedroom		-	100	-	38
#5F Corridor Cub		75	-	-	7
#5F Room ##2 Bathroom		-	100	-	20
#5F Room ##2 Bedroom		-	100	-	37
#5F Room ##3 Bedroom		-	100	-	37
#5F Room ##4 Bathroom		-	100	-	20
#5F Room ##4 Bedroom		-	100	-	38
#5F Room ##5 Bathroom		-	100	-	21
#5F Room ##5 Bedroom		-	100	-	37
#5F Room ##6 Bathroom		-	100	-	20
#5F Room ##6 Bedroom		-	100	-	38
#5F Room ##7 Bathroom		-	100	-	20
#5F Room ##7 Bedroom		-	100	-	40
#5F Room ##9 Bedroom		-	100	-	38
#5F Room ##9 Bathroom		-	100	-	21
#5F Room ##8 Bathroom		-	100	-	20
#5F Room ##8 Bedroom		-	100	-	37
#5F ##1 bathroom		-	100	-	20
#5F Corr Cub		75	-	-	4
#5F ##3 Bathroom		-	100	-	21
#5F Corr Cub		75	-	-	7
#5F Corr Cub		75	-	-	7
#5F Room ##10 Bathroom		-	100	-	23
#5F Room ##10 Bedroom		-	100	-	40
#5F Corr Cub		75	-	-	3
#5F Corridor		-	100	-	142
#6F South Stairs		-	100	-	59
#6F South Lifts and risers		-	100	-	51
#6F North Stairs		-	100	-	50
#6F Lobby		-	100	-	56
#6F Corridor Cub		75	-	-	7
#6F Room ##1 Bedroom		-	100	-	38
#6F Corridor Cub		75	-	-	7
#6F Room ##2 Bathroom		-	100	-	20
#6F Room ##2 Bedroom		-	100	-	37
#6F Room ##3 Bedroom		-	100	-	37
#6F Room ##4 Bathroom		-	100	-	20
#6F Room ##4 Bedroom		-	100	-	38
#6F Room ##5 Bathroom		-	100	-	21
#6F Room ##5 Bedroom		-	100	-	37
#6F Room ##6 Bathroom		-	100	-	20

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#6F Room ##6 Bedroom		-	100	-	38
#6F Room ##7 Bathroom		-	100	-	20
#6F Room ##7 Bedroom		-	100	-	40
#6F Room ##9 Bedroom		-	100	-	38
#6F Room ##9 Bathroom		-	100	-	21
#6F Room ##8 Bathroom		-	100	-	20
#6F Room ##8 Bedroom		-	100	-	37
#6F ##1 bathroom		-	100	-	20
#6F Corr Cub		75	-	-	4
#6F ##3 Bathroom		-	100	-	21
#6F Corr Cub		75	-	-	7
#6F Corr Cub		75	-	-	7
#6F Room ##10 Bathroom		-	100	-	23
#6F Room ##10 Bedroom		-	100	-	40
#6F Corr Cub		75	-	-	3
#6F Corridor		-	100	-	142
#7F South Stairs		-	100	-	59
#7F South Lifts and risers		-	100	-	51
#7F North Stairs		-	100	-	50
#7F Lobby		-	100	-	56
#7F Corridor Cub		75	-	-	7
#7F Room ##1 Bedroom		-	100	-	38
#7F Corridor Cub		75	-	-	7
#7F Room ##2 Bathroom		-	100	-	20
#7F Room ##2 Bedroom		-	100	-	37
#7F Room ##3 Bedroom		-	100	-	37
#7F Room ##4 Bathroom		-	100	-	20
#7F Room ##4 Bedroom		-	100	-	38
#7F Room ##5 Bathroom		-	100	-	21
#7F Room ##5 Bedroom		-	100	-	37
#7F Room ##6 Bathroom		-	100	-	20
#7F Room ##6 Bedroom		-	100	-	38
#7F Room ##7 Bathroom		-	100	-	20
#7F Room ##7 Bedroom		-	100	-	40
#7F Room ##9 Bedroom		-	100	-	38
#7F Room ##9 Bathroom		-	100	-	21
#7F Room ##8 Bathroom		-	100	-	20
#7F Room ##8 Bedroom		-	100	-	37
#7F ##1 bathroom		-	100	-	20
#7F Corr Cub		75	-	-	4
#7F ##3 Bathroom		-	100	-	21
#7F Corr Cub		75	-	-	7
#7F Corr Cub		75	-	-	7

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#7F Room ##10 Bathroom		-	100	-	23
#7F Room ##10 Bedroom		-	100	-	40
#7F Corr Cub		75	-	-	3
#7F Corridor		-	100	-	142
#8F South Stairs		-	100	-	59
#8F South Lifts and risers		-	100	-	51
#8F North Stairs		-	100	-	50
#8F Lobby		-	100	-	56
#8F Corridor Cub		75	-	-	7
#8F Room ##1 Bedroom		-	100	-	38
#8F Corridor Cub		75	-	-	7
#8F Room ##2 Bathroom		-	100	-	20
#8F Room ##2 Bedroom		-	100	-	37
#8F Room ##3 Bedroom		-	100	-	37
#8F Room ##4 Bathroom		-	100	-	20
#8F Room ##4 Bedroom		-	100	-	38
#8F Room ##5 Bathroom		-	100	-	21
#8F Room ##5 Bedroom		-	100	-	37
#8F Room ##6 Bathroom		-	100	-	20
#8F Room ##6 Bedroom		-	100	-	38
#8F Room ##7 Bathroom		-	100	-	20
#8F Room ##7 Bedroom		-	100	-	40
#8F Room ##9 Bedroom		-	100	-	38
#8F Room ##9 Bathroom		-	100	-	21
#8F Room ##8 Bathroom		-	100	-	20
#8F Room ##8 Bedroom		-	100	-	37
#8F ##1 bathroom		-	100	-	20
#8F Corr Cub		75	-	-	4
#8F ##3 Bathroom		-	100	-	21
#8F Corr Cub		75	-	-	7
#8F Corr Cub		75	-	-	7
#8F Room ##10 Bathroom		-	100	-	23
#8F Room ##10 Bedroom		-	100	-	40
#8F Corr Cub		75	-	-	3
#8F Corridor		-	100	-	142
#9F South Stairs		-	100	-	59
#9F South Lifts and risers		-	100	-	51
#9F North Stairs		-	100	-	50
#9F Lobby		-	100	-	56
#9F Corridor Cub		75	-	-	7
#9F Room ##1 Bedroom		-	100	-	38
#9F Corridor Cub		75	-	-	7
#9F Room ##2 Bathroom		-	100	-	20

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#9F Room ##2 Bedroom		-	100	-	37
#9F Room ##3 Bedroom		-	100	-	37
#9F Room ##4 Bathroom		-	100	-	20
#9F Room ##4 Bedroom		-	100	-	38
#9F Room ##5 Bathroom		-	100	-	21
#9F Room ##5 Bedroom		-	100	-	37
#9F Room ##6 Bathroom		-	100	-	20
#9F Room ##6 Bedroom		-	100	-	38
#9F Room ##7 Bathroom		-	100	-	20
#9F Room ##7 Bedroom		-	100	-	40
#9F Room ##9 Bedroom		-	100	-	38
#9F Room ##9 Bathroom		-	100	-	21
#9F Room ##8 Bathroom		-	100	-	20
#9F Room ##8 Bedroom		-	100	-	37
#9F ##1 bathroom		-	100	-	20
#9F Corr Cub		75	-	-	4
#9F ##3 Bathroom		-	100	-	21
#9F Corr Cub		75	-	-	7
#9F Corr Cub		75	-	-	7
#9F Room ##10 Bathroom		-	100	-	23
#9F Room ##10 Bedroom		-	100	-	40
#9F Corr Cub		75	-	-	3
#9F Corridor		-	100	-	142
#10F South Stairs		-	100	-	59
#10F South Lifts and risers		-	100	-	51
#10F North Stairs		-	100	-	50
#10F Lobby		-	100	-	56
#10F Corridor Cub		75	-	-	7
#10F Room ##1 Bedroom		-	100	-	38
#10F Corridor Cub		75	-	-	7
#10F Room ##2 Bathroom		-	100	-	20
#10F Room ##2 Bedroom		-	100	-	37
#10F Room ##3 Bedroom		-	100	-	37
#10F Room ##4 Bathroom		-	100	-	20
#10F Room ##4 Bedroom		-	100	-	38
#10F Room ##5 Bathroom		-	100	-	21
#10F Room ##5 Bedroom		-	100	-	37
#10F Room ##6 Bathroom		-	100	-	20
#10F Room ##6 Bedroom		-	100	-	38
#10F Room ##7 Bathroom		-	100	-	20
#10F Room ##7 Bedroom		-	100	-	40
#10F Room ##9 Bedroom		-	100	-	38
#10F Room ##9 Bathroom		-	100	-	21

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#10F Room ##8 Bathroom		-	100	-	20
#10F Room ##8 Bedroom		-	100	-	37
#10F ##1 bathroom		-	100	-	20
#10F Corr Cub		75	-	-	4
#10F ##3 Bathroom		-	100	-	21
#10F Corr Cub		75	-	-	7
#10F Corr Cub		75	-	-	7
#10F Room ##10 Bathroom		-	100	-	23
#10F Room ##10 Bedroom		-	100	-	40
#10F Corr Cub		75	-	-	3
#10F Corridor		-	100	-	142
#11F South Stairs		-	100	-	59
#11F South Lifts and risers		-	100	-	51
#11F North Stairs		-	100	-	50
#11F Lobby		-	100	-	56
#11F Corridor Cub		75	-	-	7
#11F Room ##1 Bedroom		-	100	-	38
#11F Corridor Cub		75	-	-	7
#11F Room ##2 Bathroom		-	100	-	20
#11F Room ##2 Bedroom		-	100	-	37
#11F Room ##3 Bedroom		-	100	-	37
#11F Room ##4 Bathroom		-	100	-	20
#11F Room ##4 Bedroom		-	100	-	38
#11F Room ##5 Bathroom		-	100	-	21
#11F Room ##5 Bedroom		-	100	-	37
#11F Room ##6 Bathroom		-	100	-	20
#11F Room ##6 Bedroom		-	100	-	38
#11F Room ##7 Bathroom		-	100	-	20
#11F Room ##7 Bedroom		-	100	-	40
#11F Room ##9 Bedroom		-	100	-	38
#11F Room ##9 Bathroom		-	100	-	21
#11F Room ##8 Bathroom		-	100	-	20
#11F Room ##8 Bedroom		-	100	-	37
#11F ##1 bathroom		-	100	-	20
#11F Corr Cub		75	-	-	4
#11F ##3 Bathroom		-	100	-	21
#11F Corr Cub		75	-	-	7
#11F Corr Cub		75	-	-	7
#11F Room ##10 Bathroom		-	100	-	23
#11F Room ##10 Bedroom		-	100	-	40
#11F Corr Cub		75	-	-	3
#11F Corridor		-	100	-	142
#12F South Stairs		-	100	-	59

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#12F South Lifts and risers		-	100	-	51
#12F North Stairs		-	100	-	50
#12F Lobby		-	100	-	56
#12F Corridor Cub		75	-	-	7
#12F Room ##1 Bedroom		-	100	-	38
#12F Corridor Cub		75	-	-	7
#12F Room ##2 Bathroom		-	100	-	20
#12F Room ##2 Bedroom		-	100	-	37
#12F Room ##3 Bedroom		-	100	-	37
#12F Room ##4 Bathroom		-	100	-	20
#12F Room ##4 Bedroom		-	100	-	38
#12F Room ##5 Bathroom		-	100	-	21
#12F Room ##5 Bedroom		-	100	-	37
#12F Room ##6 Bathroom		-	100	-	20
#12F Room ##6 Bedroom		-	100	-	38
#12F Room ##7 Bathroom		-	100	-	20
#12F Room ##7 Bedroom		-	100	-	40
#12F Room ##9 Bedroom		-	100	-	38
#12F Room ##9 Bathroom		-	100	-	21
#12F Room ##8 Bathroom		-	100	-	20
#12F Room ##8 Bedroom		-	100	-	37
#12F ##1 bathroom		-	100	-	20
#12F Corr Cub		75	-	-	4
#12F ##3 Bathroom		-	100	-	21
#12F Corr Cub		75	-	-	7
#12F Corr Cub		75	-	-	7
#12F Room ##10 Bathroom		-	100	-	23
#12F Room ##10 Bedroom		-	100	-	40
#12F Corr Cub		75	-	-	3
#12F Corridor		-	100	-	142
#13F South Stairs		-	100	-	59
#13F South Lifts and risers		-	100	-	51
#13F North Stairs		-	100	-	50
#13F Lobby		-	100	-	56
#13F Corridor Cub		75	-	-	7
#13F Room ##1 Bedroom		-	100	-	38
#13F Corridor Cub		75	-	-	7
#13F Room ##2 Bathroom		-	100	-	20
#13F Room ##2 Bedroom		-	100	-	37
#13F Room ##3 Bedroom		-	100	-	37
#13F Room ##4 Bathroom		-	100	-	20
#13F Room ##4 Bedroom		-	100	-	38
#13F Room ##5 Bathroom		-	100	-	21

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#13F Room ##5 Bedroom		-	100	-	37
#13F Room ##6 Bathroom		-	100	-	20
#13F Room ##6 Bedroom		-	100	-	38
#13F Room ##7 Bathroom		-	100	-	20
#13F Room ##7 Bedroom		-	100	-	40
#13F Room ##9 Bedroom		-	100	-	38
#13F Room ##9 Bathroom		-	100	-	21
#13F Room ##8 Bathroom		-	100	-	20
#13F Room ##8 Bedroom		-	100	-	37
#13F ##1 bathroom		-	100	-	20
#13F Corr Cub		75	-	-	4
#13F ##3 Bathroom		-	100	-	21
#13F Corr Cub		75	-	-	7
#13F Corr Cub		75	-	-	7
#13F Room ##10 Bathroom		-	100	-	23
#13F Room ##10 Bedroom		-	100	-	40
#13F Corr Cub		75	-	-	3
#13F Corridor		-	100	-	142
#14F South Stairs		-	100	-	59
#14F South Lifts and risers		-	100	-	51
#14F North Stairs		-	100	-	50
#14F Lobby		-	100	-	56
#14F Corridor Cub		75	-	-	7
#14F Room ##1 Bedroom		-	100	-	38
#14F Corridor Cub		75	-	-	7
#14F Room ##2 Bathroom		-	100	-	20
#14F Room ##2 Bedroom		-	100	-	37
#14F Room ##3 Bedroom		-	100	-	37
#14F Room ##4 Bathroom		-	100	-	20
#14F Room ##4 Bedroom		-	100	-	38
#14F Room ##5 Bathroom		-	100	-	21
#14F Room ##5 Bedroom		-	100	-	37
#14F Room ##6 Bathroom		-	100	-	20
#14F Room ##6 Bedroom		-	100	-	38
#14F Room ##7 Bathroom		-	100	-	20
#14F Room ##7 Bedroom		-	100	-	40
#14F Room ##9 Bedroom		-	100	-	38
#14F Room ##9 Bathroom		-	100	-	21
#14F Room ##8 Bathroom		-	100	-	20
#14F Room ##8 Bedroom		-	100	-	37
#14F ##1 bathroom		-	100	-	20
#14F Corr Cub		75	-	-	4
#14F ##3 Bathroom		-	100	-	21

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#14F Corr Cub		75	-	-	7
#14F Corr Cub		75	-	-	7
#14F Room ##10 Bathroom		-	100	-	23
#14F Room ##10 Bedroom		-	100	-	40
#14F Corr Cub		75	-	-	3
#14F Corridor		-	100	-	142
#15F South Stairs		-	100	-	59
#15F South Lifts and risers		-	100	-	51
#15F North Stairs		-	100	-	50
#15F Lobby		-	100	-	56
#15F Corridor Cub		75	-	-	7
#15F Room ##1 Bedroom		-	100	-	38
#15F Corridor Cub		75	-	-	7
#15F Room ##2 Bathroom		-	100	-	20
#15F Room ##2 Bedroom		-	100	-	37
#15F Room ##3 Bedroom		-	100	-	37
#15F Room ##4 Bathroom		-	100	-	20
#15F Room ##4 Bedroom		-	100	-	38
#15F Room ##5 Bathroom		-	100	-	21
#15F Room ##5 Bedroom		-	100	-	37
#15F Room ##6 Bathroom		-	100	-	20
#15F Room ##6 Bedroom		-	100	-	38
#15F Room ##7 Bathroom		-	100	-	20
#15F Room ##7 Bedroom		-	100	-	40
#15F Room ##9 Bedroom		-	100	-	38
#15F Room ##9 Bathroom		-	100	-	21
#15F Room ##8 Bathroom		-	100	-	20
#15F Room ##8 Bedroom		-	100	-	37
#15F ##1 bathroom		-	100	-	20
#15F Corr Cub		75	-	-	4
#15F ##3 Bathroom		-	100	-	21
#15F Corr Cub		75	-	-	7
#15F Corr Cub		75	-	-	7
#15F Room ##10 Bathroom		-	100	-	23
#15F Room ##10 Bedroom		-	100	-	40
#15F Corr Cub		75	-	-	3
#15F Corridor		-	100	-	142
#15F South Stairs		-	100	-	59
#15F South Lifts and risers		-	100	-	51
#15F North Stairs		-	100	-	50
#15F Lobby		-	100	-	56
#15F Corridor Cub		75	-	-	7
#15F Room ##1 Bedroom		-	100	-	38

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#15F Corridor Cub		75	-	-	7
#15F Room ##2 Bathroom		-	100	-	20
#15F Room ##2 Bedroom		-	100	-	37
#15F Room ##3 Bedroom		-	100	-	37
#15F Room ##4 Bathroom		-	100	-	20
#15F Room ##4 Bedroom		-	100	-	38
#15F Room ##5 Bathroom		-	100	-	21
#15F Room ##5 Bedroom		-	100	-	37
#15F Room ##6 Bathroom		-	100	-	20
#15F Room ##6 Bedroom		-	100	-	38
#15F Room ##7 Bathroom		-	100	-	20
#15F Room ##7 Bedroom		-	100	-	40
#15F Room ##9 Bedroom		-	100	-	38
#15F Room ##9 Bathroom		-	100	-	21
#15F Room ##8 Bathroom		-	100	-	20
#15F Room ##8 Bedroom		-	100	-	37
#15F ##1 bathroom		-	100	-	20
#15F Corr Cub		75	-	-	4
#15F ##3 Bathroom		-	100	-	21
#15F Corr Cub		75	-	-	7
#15F Corr Cub		75	-	-	7
#15F Room ##10 Bathroom		-	100	-	23
#15F Room ##10 Bedroom		-	100	-	40
#15F Corr Cub		75	-	-	3
#15F Corridor		-	100	-	142

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?
GF South Stairs	N/A	N/A
GF South Lifts and risers	N/A	N/A
GF Lobby	NO (-48.9%)	NO
GF North Stairs	NO (-70%)	NO
#1F South Stairs	NO (-28.6%)	NO
#1F South Lifts and risers	N/A	N/A
#1F North Stairs	NO (-92.5%)	NO
#1F Lobby	N/A	N/A
#1F Lobby	NO (-68.9%)	NO
#2F South Stairs	NO (-24.2%)	NO
#2F South Lifts and risers	N/A	N/A
#2F North Stairs	NO (-85.4%)	NO
#2F Lobby	N/A	N/A
#2F Restaurant	NO (-38.4%)	NO
#2F Toilets	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
#2F Store	N/A	N/A
#2F Kitchen	NO (-51.7%)	NO
#2F Lobby	NO (-67.2%)	NO
#3F South Stairs	N/A	N/A
#3F South Lifts and risers	N/A	N/A
#3F North Stairs	N/A	N/A
#3F Lobby	N/A	N/A
GF plant /gen	N/A	N/A
#1F Bar Lounge	NO (-48.3%)	NO
#1F Staff Office	NO (-46.3%)	NO
#1F Staff Office	NO (-54.2%)	NO
#1F Toilets	NO (-93.9%)	NO
#1F Acc Hotel Bathroom	N/A	N/A
#1F Hotel Acc Bedroom	NO (-79.6%)	NO
#1F Hotel Bedroom	NO (-92.2%)	NO
#1F Hotel Bathroom	N/A	N/A
#1F Reception	NO (-56.8%)	NO
#2F Toilets	NO (-93.9%)	NO
#2F Hotel Bedroom	NO (-92.2%)	NO
#2F Hotel Bathroom	N/A	N/A
#2F Hotel Acc Bathroom	N/A	N/A
#2F Hotel Acc Bedroom	NO (-78.4%)	NO
#4F South Stairs	NO (-54.4%)	NO
#4F South Lifts and risers	N/A	N/A
#4F North Stairs	NO (-86.5%)	NO
#4F Lobby	N/A	N/A
#4F Corridor Cub	N/A	N/A
#4F Room ##1 Bedroom	NO (-66.6%)	NO
#4F Corridor Cub	N/A	N/A
#4F Room ##2 Bathroom	N/A	N/A
#4F Room ##2 Bedroom	NO (-69.9%)	NO
#4F Room ##3 Bedroom	NO (-70.3%)	NO
#4F Room ##4 Bathroom	N/A	N/A
#4F Room ##4 Bedroom	NO (-70.7%)	NO
#4F Room ##5 Bathroom	N/A	N/A
#4F Room ##5 Bedroom	NO (-70.3%)	NO
#4F Room ##6 Bathroom	N/A	N/A
#4F Room ##6 Bedroom	NO (-70.8%)	NO
#4F Room ##7 Bathroom	N/A	N/A
#4F Room ##7 Bedroom	NO (-46.9%)	NO
#4F Room ##9 Bedroom	NO (-64.7%)	NO
#4F Room ##9 Bathroom	N/A	N/A
#4F Room ##8 Bathroom	N/A	N/A
#4F Room ##8 Bedroom	N/A	N/A
#4F ##1 bathroom	N/A	N/A
#4F Corr Cub	N/A	N/A
#4F ##3 Bathroom	N/A	N/A
#4F Corr Cub	N/A	N/A
#4F Corr Cub	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
#4F Room ##10 Bathroom	N/A	N/A
#4F Room ##10 Bedroom	NO (-79.5%)	NO
#4F Corr Cub	N/A	N/A
#4F Corridor	NO (-79.7%)	NO
#4F Hotel Acc Bathroom	NO (-90.2%)	NO
#4F Hotel Acc Bedroom	NO (-94.6%)	NO
#4F Hotel ##12 Bedroom	NO (-81.7%)	NO
#4F Hotel ##12 Bathroom	N/A	N/A
#4F Hotel ##11 Bathroom	N/A	N/A
#4F Hotel ##11 Bedroom	NO (-83.3%)	NO
#4F Hotel Store	N/A	N/A
#4F Hotel Circ	N/A	N/A
#5F South Stairs	NO (-51.5%)	NO
#5F South Lifts and risers	N/A	N/A
#5F North Stairs	NO (-77.8%)	NO
#5F Lobby	N/A	N/A
#5F Corridor Cub	N/A	N/A
#5F Room ##1 Bedroom	NO (-66%)	NO
#5F Corridor Cub	N/A	N/A
#5F Room ##2 Bathroom	N/A	N/A
#5F Room ##2 Bedroom	NO (-68.9%)	NO
#5F Room ##3 Bedroom	NO (-68.9%)	NO
#5F Room ##4 Bathroom	N/A	N/A
#5F Room ##4 Bedroom	NO (-69.4%)	NO
#5F Room ##5 Bathroom	N/A	N/A
#5F Room ##5 Bedroom	NO (-69%)	NO
#5F Room ##6 Bathroom	N/A	N/A
#5F Room ##6 Bedroom	NO (-69.4%)	NO
#5F Room ##7 Bathroom	N/A	N/A
#5F Room ##7 Bedroom	NO (-50.3%)	NO
#5F Room ##9 Bedroom	NO (-77.2%)	NO
#5F Room ##9 Bathroom	N/A	N/A
#5F Room ##8 Bathroom	N/A	N/A
#5F Room ##8 Bedroom	NO (-78.4%)	NO
#5F ##1 bathroom	N/A	N/A
#5F Corr Cub	N/A	N/A
#5F ##3 Bathroom	N/A	N/A
#5F Corr Cub	N/A	N/A
#5F Corr Cub	N/A	N/A
#5F Room ##10 Bathroom	N/A	N/A
#5F Room ##10 Bedroom	NO (-77.4%)	NO
#5F Corr Cub	N/A	N/A
#5F Corridor	NO (-79.6%)	NO
#6F South Stairs	NO (-46.1%)	NO
#6F South Lifts and risers	N/A	N/A
#6F North Stairs	NO (-75.8%)	NO
#6F Lobby	N/A	N/A
#6F Corridor Cub	N/A	N/A
#6F Room ##1 Bedroom	NO (-65.9%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
#6F Corridor Cub	N/A	N/A
#6F Room ##2 Bathroom	N/A	N/A
#6F Room ##2 Bedroom	NO (-68.9%)	NO
#6F Room ##3 Bedroom	NO (-68.9%)	NO
#6F Room ##4 Bathroom	N/A	N/A
#6F Room ##4 Bedroom	NO (-69.4%)	NO
#6F Room ##5 Bathroom	N/A	N/A
#6F Room ##5 Bedroom	NO (-69%)	NO
#6F Room ##6 Bathroom	N/A	N/A
#6F Room ##6 Bedroom	NO (-69.4%)	NO
#6F Room ##7 Bathroom	N/A	N/A
#6F Room ##7 Bedroom	NO (-46.2%)	NO
#6F Room ##9 Bedroom	NO (-72.5%)	NO
#6F Room ##9 Bathroom	N/A	N/A
#6F Room ##8 Bathroom	N/A	N/A
#6F Room ##8 Bedroom	NO (-71.9%)	NO
#6F ##1 bathroom	N/A	N/A
#6F Corr Cub	N/A	N/A
#6F ##3 Bathroom	N/A	N/A
#6F Corr Cub	N/A	N/A
#6F Corr Cub	N/A	N/A
#6F Room ##10 Bathroom	N/A	N/A
#6F Room ##10 Bedroom	NO (-74.6%)	NO
#6F Corr Cub	N/A	N/A
#6F Corridor	NO (-79.6%)	NO
#7F South Stairs	NO (-56.4%)	NO
#7F South Lifts and risers	N/A	N/A
#7F North Stairs	NO (-75.7%)	NO
#7F Lobby	N/A	N/A
#7F Corridor Cub	N/A	N/A
#7F Room ##1 Bedroom	NO (-65.7%)	NO
#7F Corridor Cub	N/A	N/A
#7F Room ##2 Bathroom	N/A	N/A
#7F Room ##2 Bedroom	NO (-68.9%)	NO
#7F Room ##3 Bedroom	NO (-68.9%)	NO
#7F Room ##4 Bathroom	N/A	N/A
#7F Room ##4 Bedroom	NO (-69.4%)	NO
#7F Room ##5 Bathroom	N/A	N/A
#7F Room ##5 Bedroom	NO (-69%)	NO
#7F Room ##6 Bathroom	N/A	N/A
#7F Room ##6 Bedroom	NO (-69.4%)	NO
#7F Room ##7 Bathroom	N/A	N/A
#7F Room ##7 Bedroom	NO (-52.3%)	NO
#7F Room ##9 Bedroom	NO (-72.5%)	NO
#7F Room ##9 Bathroom	N/A	N/A
#7F Room ##8 Bathroom	N/A	N/A
#7F Room ##8 Bedroom	NO (-71.8%)	NO
#7F ##1 bathroom	N/A	N/A
#7F Corr Cub	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
#7F ##3 Bathroom	N/A	N/A
#7F Corr Cub	N/A	N/A
#7F Corr Cub	N/A	N/A
#7F Room ##10 Bathroom	N/A	N/A
#7F Room ##10 Bedroom	NO (-74.6%)	NO
#7F Corr Cub	N/A	N/A
#7F Corridor	NO (-67.9%)	NO
#8F South Stairs	NO (-56.4%)	NO
#8F South Lifts and risers	N/A	N/A
#8F North Stairs	NO (-75.5%)	NO
#8F Lobby	N/A	N/A
#8F Corridor Cub	N/A	N/A
#8F Room ##1 Bedroom	NO (-65.6%)	NO
#8F Corridor Cub	N/A	N/A
#8F Room ##2 Bathroom	N/A	N/A
#8F Room ##2 Bedroom	NO (-68.9%)	NO
#8F Room ##3 Bedroom	NO (-68.9%)	NO
#8F Room ##4 Bathroom	N/A	N/A
#8F Room ##4 Bedroom	NO (-69.4%)	NO
#8F Room ##5 Bathroom	N/A	N/A
#8F Room ##5 Bedroom	NO (-69%)	NO
#8F Room ##6 Bathroom	N/A	N/A
#8F Room ##6 Bedroom	NO (-69.4%)	NO
#8F Room ##7 Bathroom	N/A	N/A
#8F Room ##7 Bedroom	NO (-52.3%)	NO
#8F Room ##9 Bedroom	NO (-72.5%)	NO
#8F Room ##9 Bathroom	N/A	N/A
#8F Room ##8 Bathroom	N/A	N/A
#8F Room ##8 Bedroom	NO (-71.6%)	NO
#8F ##1 bathroom	N/A	N/A
#8F Corr Cub	N/A	N/A
#8F ##3 Bathroom	N/A	N/A
#8F Corr Cub	N/A	N/A
#8F Corr Cub	N/A	N/A
#8F Room ##10 Bathroom	N/A	N/A
#8F Room ##10 Bedroom	NO (-74.5%)	NO
#8F Corr Cub	N/A	N/A
#8F Corridor	NO (-67.8%)	NO
#9F South Stairs	NO (-56.3%)	NO
#9F South Lifts and risers	N/A	N/A
#9F North Stairs	NO (-75.5%)	NO
#9F Lobby	N/A	N/A
#9F Corridor Cub	N/A	N/A
#9F Room ##1 Bedroom	NO (-65.6%)	NO
#9F Corridor Cub	N/A	N/A
#9F Room ##2 Bathroom	N/A	N/A
#9F Room ##2 Bedroom	NO (-68.9%)	NO
#9F Room ##3 Bedroom	NO (-68.9%)	NO
#9F Room ##4 Bathroom	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
#9F Room ##4 Bedroom	NO (-69.4%)	NO
#9F Room ##5 Bathroom	N/A	N/A
#9F Room ##5 Bedroom	NO (-69%)	NO
#9F Room ##6 Bathroom	N/A	N/A
#9F Room ##6 Bedroom	NO (-69.4%)	NO
#9F Room ##7 Bathroom	N/A	N/A
#9F Room ##7 Bedroom	NO (-52.3%)	NO
#9F Room ##9 Bedroom	NO (-72.4%)	NO
#9F Room ##9 Bathroom	N/A	N/A
#9F Room ##8 Bathroom	N/A	N/A
#9F Room ##8 Bedroom	NO (-71.6%)	NO
#9F ##1 bathroom	N/A	N/A
#9F Corr Cub	N/A	N/A
#9F ##3 Bathroom	N/A	N/A
#9F Corr Cub	N/A	N/A
#9F Corr Cub	N/A	N/A
#9F Room ##10 Bathroom	N/A	N/A
#9F Room ##10 Bedroom	NO (-74.4%)	NO
#9F Corr Cub	N/A	N/A
#9F Corridor	NO (-67.8%)	NO
#10F South Stairs	NO (-56.3%)	NO
#10F South Lifts and risers	N/A	N/A
#10F North Stairs	NO (-75.5%)	NO
#10F Lobby	N/A	N/A
#10F Corridor Cub	N/A	N/A
#10F Room ##1 Bedroom	NO (-65.4%)	NO
#10F Corridor Cub	N/A	N/A
#10F Room ##2 Bathroom	N/A	N/A
#10F Room ##2 Bedroom	NO (-68.9%)	NO
#10F Room ##3 Bedroom	NO (-68.9%)	NO
#10F Room ##4 Bathroom	N/A	N/A
#10F Room ##4 Bedroom	NO (-69.4%)	NO
#10F Room ##5 Bathroom	N/A	N/A
#10F Room ##5 Bedroom	NO (-69%)	NO
#10F Room ##6 Bathroom	N/A	N/A
#10F Room ##6 Bedroom	NO (-69.4%)	NO
#10F Room ##7 Bathroom	N/A	N/A
#10F Room ##7 Bedroom	NO (-52.3%)	NO
#10F Room ##9 Bedroom	NO (-72.2%)	NO
#10F Room ##9 Bathroom	N/A	N/A
#10F Room ##8 Bathroom	N/A	N/A
#10F Room ##8 Bedroom	NO (-71.5%)	NO
#10F ##1 bathroom	N/A	N/A
#10F Corr Cub	N/A	N/A
#10F ##3 Bathroom	N/A	N/A
#10F Corr Cub	N/A	N/A
#10F Corr Cub	N/A	N/A
#10F Room ##10 Bathroom	N/A	N/A
#10F Room ##10 Bedroom	NO (-74.3%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
#10F Corr Cub	N/A	N/A
#10F Corridor	NO (-67.8%)	NO
#11F South Stairs	NO (-56.3%)	NO
#11F South Lifts and risers	N/A	N/A
#11F North Stairs	NO (-75.1%)	NO
#11F Lobby	N/A	N/A
#11F Corridor Cub	N/A	N/A
#11F Room ##1 Bedroom	NO (-65.2%)	NO
#11F Corridor Cub	N/A	N/A
#11F Room ##2 Bathroom	N/A	N/A
#11F Room ##2 Bedroom	NO (-68.9%)	NO
#11F Room ##3 Bedroom	NO (-68.9%)	NO
#11F Room ##4 Bathroom	N/A	N/A
#11F Room ##4 Bedroom	NO (-69.4%)	NO
#11F Room ##5 Bathroom	N/A	N/A
#11F Room ##5 Bedroom	NO (-69%)	NO
#11F Room ##6 Bathroom	N/A	N/A
#11F Room ##6 Bedroom	NO (-69.4%)	NO
#11F Room ##7 Bathroom	N/A	N/A
#11F Room ##7 Bedroom	NO (-52.3%)	NO
#11F Room ##9 Bedroom	NO (-72.1%)	NO
#11F Room ##9 Bathroom	N/A	N/A
#11F Room ##8 Bathroom	N/A	N/A
#11F Room ##8 Bedroom	NO (-71.3%)	NO
#11F ##1 bathroom	N/A	N/A
#11F Corr Cub	N/A	N/A
#11F ##3 Bathroom	N/A	N/A
#11F Corr Cub	N/A	N/A
#11F Corr Cub	N/A	N/A
#11F Room ##10 Bathroom	N/A	N/A
#11F Room ##10 Bedroom	NO (-74.2%)	NO
#11F Corr Cub	N/A	N/A
#11F Corridor	NO (-67.6%)	NO
#12F South Stairs	NO (-56.2%)	NO
#12F South Lifts and risers	N/A	N/A
#12F North Stairs	NO (-74.6%)	NO
#12F Lobby	N/A	N/A
#12F Corridor Cub	N/A	N/A
#12F Room ##1 Bedroom	NO (-64.8%)	NO
#12F Corridor Cub	N/A	N/A
#12F Room ##2 Bathroom	N/A	N/A
#12F Room ##2 Bedroom	NO (-69%)	NO
#12F Room ##3 Bedroom	NO (-68.9%)	NO
#12F Room ##4 Bathroom	N/A	N/A
#12F Room ##4 Bedroom	NO (-69.4%)	NO
#12F Room ##5 Bathroom	N/A	N/A
#12F Room ##5 Bedroom	NO (-69%)	NO
#12F Room ##6 Bathroom	N/A	N/A
#12F Room ##6 Bedroom	NO (-69.4%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
#12F Room ##7 Bathroom	N/A	N/A
#12F Room ##7 Bedroom	NO (-52.3%)	NO
#12F Room ##9 Bedroom	NO (-72%)	NO
#12F Room ##9 Bathroom	N/A	N/A
#12F Room ##8 Bathroom	N/A	N/A
#12F Room ##8 Bedroom	NO (-71.2%)	NO
#12F ##1 bathroom	N/A	N/A
#12F Corr Cub	N/A	N/A
#12F ##3 Bathroom	N/A	N/A
#12F Corr Cub	N/A	N/A
#12F Corr Cub	N/A	N/A
#12F Room ##10 Bathroom	N/A	N/A
#12F Room ##10 Bedroom	NO (-74.1%)	NO
#12F Corr Cub	N/A	N/A
#12F Corridor	NO (-67.3%)	NO
#13F South Stairs	NO (-56.1%)	NO
#13F South Lifts and risers	N/A	N/A
#13F North Stairs	NO (-74.1%)	NO
#13F Lobby	N/A	N/A
#13F Corridor Cub	N/A	N/A
#13F Room ##1 Bedroom	NO (-64.4%)	NO
#13F Corridor Cub	N/A	N/A
#13F Room ##2 Bathroom	N/A	N/A
#13F Room ##2 Bedroom	NO (-69%)	NO
#13F Room ##3 Bedroom	NO (-69%)	NO
#13F Room ##4 Bathroom	N/A	N/A
#13F Room ##4 Bedroom	NO (-69.4%)	NO
#13F Room ##5 Bathroom	N/A	N/A
#13F Room ##5 Bedroom	NO (-69%)	NO
#13F Room ##6 Bathroom	N/A	N/A
#13F Room ##6 Bedroom	NO (-69.4%)	NO
#13F Room ##7 Bathroom	N/A	N/A
#13F Room ##7 Bedroom	NO (-52.3%)	NO
#13F Room ##9 Bedroom	NO (-71.8%)	NO
#13F Room ##9 Bathroom	N/A	N/A
#13F Room ##8 Bathroom	N/A	N/A
#13F Room ##8 Bedroom	NO (-71%)	NO
#13F ##1 bathroom	N/A	N/A
#13F Corr Cub	N/A	N/A
#13F ##3 Bathroom	N/A	N/A
#13F Corr Cub	N/A	N/A
#13F Corr Cub	N/A	N/A
#13F Room ##10 Bathroom	N/A	N/A
#13F Room ##10 Bedroom	NO (-73.9%)	NO
#13F Corr Cub	N/A	N/A
#13F Corridor	NO (-67.1%)	NO
#14F South Stairs	NO (-56.1%)	NO
#14F South Lifts and risers	N/A	N/A
#14F North Stairs	NO (-73.2%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
#14F Lobby	N/A	N/A
#14F Corridor Cub	N/A	N/A
#14F Room ##1 Bedroom	NO (-63.9%)	NO
#14F Corridor Cub	N/A	N/A
#14F Room ##2 Bathroom	N/A	N/A
#14F Room ##2 Bedroom	NO (-69%)	NO
#14F Room ##3 Bedroom	NO (-69%)	NO
#14F Room ##4 Bathroom	N/A	N/A
#14F Room ##4 Bedroom	NO (-69.4%)	NO
#14F Room ##5 Bathroom	N/A	N/A
#14F Room ##5 Bedroom	NO (-69%)	NO
#14F Room ##6 Bathroom	N/A	N/A
#14F Room ##6 Bedroom	NO (-69.4%)	NO
#14F Room ##7 Bathroom	N/A	N/A
#14F Room ##7 Bedroom	NO (-52.3%)	NO
#14F Room ##9 Bedroom	NO (-71.7%)	NO
#14F Room ##9 Bathroom	N/A	N/A
#14F Room ##8 Bathroom	N/A	N/A
#14F Room ##8 Bedroom	NO (-70.7%)	NO
#14F ##1 bathroom	N/A	N/A
#14F Corr Cub	N/A	N/A
#14F ##3 Bathroom	N/A	N/A
#14F Corr Cub	N/A	N/A
#14F Corr Cub	N/A	N/A
#14F Room ##10 Bathroom	N/A	N/A
#14F Room ##10 Bedroom	NO (-73.8%)	NO
#14F Corr Cub	N/A	N/A
#14F Corridor	NO (-66.6%)	NO
#15F South Stairs	NO (-56%)	NO
#15F South Lifts and risers	N/A	N/A
#15F North Stairs	NO (-71.7%)	NO
#15F Lobby	N/A	N/A
#15F Corridor Cub	N/A	N/A
#15F Room ##1 Bedroom	NO (-63.1%)	NO
#15F Corridor Cub	N/A	N/A
#15F Room ##2 Bathroom	N/A	N/A
#15F Room ##2 Bedroom	NO (-69%)	NO
#15F Room ##3 Bedroom	NO (-69%)	NO
#15F Room ##4 Bathroom	N/A	N/A
#15F Room ##4 Bedroom	NO (-69.4%)	NO
#15F Room ##5 Bathroom	N/A	N/A
#15F Room ##5 Bedroom	NO (-69.1%)	NO
#15F Room ##6 Bathroom	N/A	N/A
#15F Room ##6 Bedroom	NO (-69.5%)	NO
#15F Room ##7 Bathroom	N/A	N/A
#15F Room ##7 Bedroom	NO (-52.3%)	NO
#15F Room ##9 Bedroom	NO (-71.5%)	NO
#15F Room ##9 Bathroom	N/A	N/A
#15F Room ##8 Bathroom	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
#15F Room ##8 Bedroom	NO (-70.6%)	NO
#15F ##1 bathroom	N/A	N/A
#15F Corr Cub	N/A	N/A
#15F ##3 Bathroom	N/A	N/A
#15F Corr Cub	N/A	N/A
#15F Corr Cub	N/A	N/A
#15F Room ##10 Bathroom	N/A	N/A
#15F Room ##10 Bedroom	NO (-73.6%)	NO
#15F Corr Cub	N/A	N/A
#15F Corridor	NO (-65.8%)	NO
#15F South Stairs	NO (-56%)	NO
#15F South Lifts and risers	N/A	N/A
#15F North Stairs	NO (-69.6%)	NO
#15F Lobby	N/A	N/A
#15F Corridor Cub	N/A	N/A
#15F Room ##1 Bedroom	NO (-62.1%)	NO
#15F Corridor Cub	N/A	N/A
#15F Room ##2 Bathroom	N/A	N/A
#15F Room ##2 Bedroom	NO (-69.1%)	NO
#15F Room ##3 Bedroom	NO (-69%)	NO
#15F Room ##4 Bathroom	N/A	N/A
#15F Room ##4 Bedroom	NO (-69.5%)	NO
#15F Room ##5 Bathroom	N/A	N/A
#15F Room ##5 Bedroom	NO (-69.1%)	NO
#15F Room ##6 Bathroom	N/A	N/A
#15F Room ##6 Bedroom	NO (-69.6%)	NO
#15F Room ##7 Bathroom	N/A	N/A
#15F Room ##7 Bedroom	NO (-52.4%)	NO
#15F Room ##9 Bedroom	NO (-71.1%)	NO
#15F Room ##9 Bathroom	N/A	N/A
#15F Room ##8 Bathroom	N/A	N/A
#15F Room ##8 Bedroom	NO (-70.2%)	NO
#15F ##1 bathroom	N/A	N/A
#15F Corr Cub	N/A	N/A
#15F ##3 Bathroom	N/A	N/A
#15F Corr Cub	N/A	N/A
#15F Corr Cub	N/A	N/A
#15F Room ##10 Bathroom	N/A	N/A
#15F Room ##10 Bedroom	NO (-73.4%)	NO
#15F Corr Cub	N/A	N/A
#15F Corridor	NO (-64.8%)	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?	YES
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]	5874.2	5874.2
External area [m ²]	4415.8	4415.8
Weather	SWI	SWI
Infiltration [m ³ /hm ² @ 50Pa]	5	3
Average conductance [W/K]	2532.89	2787.15
Average U-value [W/m ² K]	0.57	0.63
Alpha value* [%]	10.35	10

* 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
100 C1 Hotels
C2 Residential Institutions: Hospitals and Care Homes
C2 Residential Institutions: Residential schools
C2 Residential Institutions: Universities and colleges
C2A Secure Residential Institutions
Residential spaces
D1 Non-residential Institutions: Community/Day Centre
D1 Non-residential Institutions: Libraries, Museums, and Galleries
D1 Non-residential Institutions: Education
D1 Non-residential Institutions: Primary Health Care Building
D1 Non-residential Institutions: Crown and County Courts
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	3.88	6.16
Cooling	2.24	4.77
Auxiliary	7.41	3.68
Lighting	8.07	14.49
Hot water	212.95	199.8
Equipment*	20.74	20.74
TOTAL **	234.54	228.91

* Energy used by equipment does not count towards the total for consumption or calculating emissions.

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

Energy Production by Technology [kWh/m²]

	Actual	Notional
Photovoltaic systems	0	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	93.92	121.77
Primary energy* [kWh/m ²]	336.06	349.31
Total emissions [kg/m ²]	56.9	57.9

* 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 SSEFF	Cool SSEER	Heat gen SEFF	Cool gen SEER	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	58.9	35	3.9	2.2	3.7	4.22	4.33	4.4	5.9
	Notional	0	0	0	0	0	0	0	----	----
[ST] No Heating or Cooling										
	Actual	0	0	0	0	0	0	0	0	0
	Notional	56.7	65	6.2	4.8	3.7	2.56	3.79	----	----

Key to terms

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

Key Features

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

Building fabric

Element	U _{i-Typ}	U _{i-Min}	Surface where the minimum value occurs*
Wall	0.23	0.09	3F000000:Surf[4]
Floor	0.2	0.06	10000005:Surf[0]
Roof	0.15	0.18	GF000005:Surf[1]
Windows, roof windows, and rooflights	1.5	1.6	GF000005:Surf[3]
Personnel doors	1.5	-	No Personnel doors in building
Vehicle access & similar large doors	1.5	-	No Vehicle access doors in building
High usage entrance doors	1.5	-	No High usage entrance doors in building
U _{i-Typ} = Typical individual element U-values [W/(m²K)]		U _{i-Min} = Minimum individual element U-values [W/(m²K)]	
* There might be more than one surface where the minimum U-value occurs.			

Air Permeability	Typical value	This building
m³/(h.m²) at 50 Pa	5	5

Project name

**43102 - No.1 Reading Hotel_with 39T
CHP**

As designed

Date: Wed Oct 10 12:49:22 2018

Administrative information

Building Details

Address: 29-35 Station Road, Reading, RG1

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.10

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.10

BRUKL compliance check version: v5.4.b.0

Owner Details

Name: Name

Telephone number: Phone

Address: Street Address, City, Postcode

Certifier details

Name: Name

Telephone number: Phone

Address: Street Address, City, Postcode

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

CO ₂ emission rate from the notional building, kgCO ₂ /m ² .annum	57.9
Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	57.9
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	50
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	0.25	0.26	GF000000:Surf[1]
Floor	0.25	0.13	0.22	GF000000:Surf[0]
Roof	0.25	0.18	0.18	GF000005:Surf[1]
Windows***, roof windows, and rooflights	2.2	1.6	1.6	GF000005:Surf[3]
Personnel doors	2.2	-	-	No Personnel doors in building
Vehicle access & similar large doors	1.5	-	-	No Vehicle access doors in building
High usage entrance doors	3.5	-	-	No High usage entrance doors in building
U _a -Limit = Limiting area-weighted average U-values [W/(m ² K)] U _a -Calc = Calculated area-weighted average U-values [W/(m ² K)] U _i -Calc = Calculated maximum individual element U-values [W/(m ² K)]				
* There might be more than one surface where the maximum U-value occurs. ** Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows. *** Display windows and similar glazing are excluded from the U-value check. N.B.: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.				

Air Permeability	Worst acceptable standard	This building
m ³ /(h.m ²) at 50 Pa	10	5

Building services

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

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	YES
Whole building electric power factor achieved by power factor correction	>0.95

1- Hotel system

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.4	5.9	0	0	0.73
Standard value	2.5*	3.2	N/A	N/A	0.65
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards.					

1- hot water Hotel

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	0.95	0.003
Standard value	0.8	N/A

1- CHECK2-CHP

	CHPQA quality index	CHP electrical efficiency
This building	105	0.32
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			
GF South Stairs	-	0.9	0	-	-	-	-	-	-	-	-	N/A
GF South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	-	N/A
GF Lobby	-	0.9	0	-	-	-	-	-	-	-	-	N/A
GF North Stairs	-	0.9	0	-	-	-	-	-	-	-	-	N/A
#1F South Stairs	-	0.9	0	-	-	-	-	-	-	-	-	N/A
#1F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	-	N/A
#1F North Stairs	-	0.9	0	-	-	-	-	-	-	-	-	N/A
#1F Lobby	-	0.9	0	-	-	-	-	-	-	-	-	N/A
#1F Lobby	-	0.9	0	-	-	-	-	-	-	-	-	N/A
#2F South Stairs	-	0.9	0	-	-	-	-	-	-	-	-	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		
#2F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#2F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#2F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#2F Resturant	-	0.9	0	-	-	-	-	-	-	-	N/A
#2F Toilets	-	0.9	0	-	-	-	-	-	-	-	N/A
#2F Store	-	0.9	0	-	-	-	-	-	-	-	N/A
#2F Kitchen	-	0.9	0	-	-	-	-	-	-	-	N/A
#2F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#3F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#3F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#3F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#3F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
GF plant /gen	-	0.9	0	-	-	-	-	-	-	-	N/A
#1F Bar Lounge	-	0.9	0	-	-	-	-	-	-	-	N/A
#1FStaff Office	-	0.9	0	-	-	-	-	-	-	-	N/A
#1F Staff Office	-	0.9	0	-	-	-	-	-	-	-	N/A
#1F Toilets	-	0.9	0	-	-	-	-	-	-	-	N/A
#1F Acc Hotel Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#1F Hotel Acc Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#1F Hotel Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#1F Hotel Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#1F Reception	-	0.9	0	-	-	-	-	-	-	-	N/A
#2F Toilets	-	0.9	0	-	-	-	-	-	-	-	N/A
#2F Hotel Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#2F Hotel Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#2F Hotel Acc Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#2F Hotel Acc Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	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		
#4F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Hotel Acc Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Hotel Acc Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Hotel ##12 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Hotel ##12 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Hotel ##11 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Hotel ##11 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Hotel Store	-	0.9	0	-	-	-	-	-	-	-	N/A
#4F Hotel Circ	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	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
#5F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#5F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#6F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F South Stairs	-	0.9	0	-	-	-	-	-	-	-	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		
#7F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#7F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	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		
#8F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#8F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#9F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	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	
#9F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#9F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#9F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#9F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#9F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#9F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#10F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	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	
#11F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#11F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A	
#12F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	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		
#12F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#12F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#12F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#12F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#12F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#12F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#12F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#12F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#12F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#12F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#12F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#12F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#12F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#13F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	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		
#13F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#14F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	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		
#15F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F South Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F South Lifts and risers	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F North Stairs	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Lobby	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##1 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corridor Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##2 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##2 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##3 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##4 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##4 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##5 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##5 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##6 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##6 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##7 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##7 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##9 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##9 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##8 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##8 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F ##1 bathroom	-	0.9	0	-	-	-	-	-	-	-	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
#15F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F ##3 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##10 Bathroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Room ##10 Bedroom	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corr Cub	-	0.9	0	-	-	-	-	-	-	-	N/A
#15F Corridor	-	0.9	0	-	-	-	-	-	-	-	N/A

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
GF South Stairs	-	-	100	-	77
GF South Lifts and risers	-	-	100	-	71
GF Lobby	-	-	100	100	253
GF North Stairs	-	-	100	-	70
#1F South Stairs	-	-	100	-	65
#1F South Lifts and risers	-	-	100	-	57
#1F North Stairs	-	-	100	-	56
#1F Lobby	-	-	100	-	66
#1F Lobby	-	-	100	-	64
#2F South Stairs	-	-	100	-	65
#2F South Lifts and risers	-	-	100	-	57
#2F North Stairs	-	-	100	-	56
#2F Lobby	-	-	100	-	66
#2F Resturant	-	-	100	100	633
#2F Toilets	-	75	-	-	17
#2F Store	-	75	-	-	15
#2F Kitchen	-	-	100	-	607
#2F Lobby	-	-	100	-	64
#3F South Stairs	-	-	100	-	72
#3F South Lifts and risers	-	-	100	-	65
#3F North Stairs	-	-	100	-	64
#3F Lobby	-	-	100	-	76
GF plant /gen	-	75	-	-	155
#1F Bar Lounge	-	-	100	100	230
#1FStaff Office	-	75	-	-	522
#1F Staff Office	-	75	-	-	622
#1F Toilets	-	-	100	-	102
#1F Acc Hotel Bathroom	-	-	100	-	44
#1F Hotel Acc Bedroom	-	-	100	-	54
#1F Hotel Bedroom	-	-	100	-	32
#1F Hotel Bathroom	-	-	100	-	63

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#1F Reception		-	100	100	148
#2F Toilets		-	100	-	102
#2F Hotel Bedroom		-	100	-	52
#2F Hotel Bathroom		-	100	-	26
#2F Hotel Acc Bathroom		-	100	-	29
#2F Hotel Acc Bedroom		-	100	-	54
#4F South Stairs		-	100	-	59
#4F South Lifts and risers		-	100	-	51
#4F North Stairs		-	100	-	50
#4F Lobby		-	100	-	56
#4F Corridor Cub		75	-	-	7
#4F Room ##1 Bedroom		-	100	-	38
#4F Corridor Cub		75	-	-	7
#4F Room ##2 Bathroom		-	100	-	20
#4F Room ##2 Bedroom		-	100	-	37
#4F Room ##3 Bedroom		-	100	-	37
#4F Room ##4 Bathroom		-	100	-	20
#4F Room ##4 Bedroom		-	100	-	38
#4F Room ##5 Bathroom		-	100	-	21
#4F Room ##5 Bedroom		-	100	-	37
#4F Room ##6 Bathroom		-	100	-	20
#4F Room ##6 Bedroom		-	100	-	38
#4F Room ##7 Bathroom		-	100	-	20
#4F Room ##7 Bedroom		-	100	-	40
#4F Room ##9 Bedroom		-	100	-	38
#4F Room ##9 Bathroom		-	100	-	21
#4F Room ##8 Bathroom		-	100	-	20
#4F Room ##8 Bedroom		-	100	-	37
#4F ##1 bathroom		-	100	-	20
#4F Corr Cub		75	-	-	4
#4F ##3 Bathroom		-	100	-	21
#4F Corr Cub		75	-	-	7
#4F Corr Cub		75	-	-	7
#4F Room ##10 Bathroom		-	100	-	23
#4F Room ##10 Bedroom		-	100	-	40
#4F Corr Cub		75	-	-	3
#4F Corridor		-	100	-	142
#4F Hotel Acc Bathroom		-	100	-	23
#4F Hotel Acc Bedroom		-	100	-	44
#4F Hotel ##12 Bedroom		-	100	-	37
#4F Hotel ##12 Bathroom		-	100	-	20
#4F Hotel ##11 Bathroom		-	100	-	20
#4F Hotel ##11 Bedroom		-	100	-	38

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#4F Hotel Store		75	-	-	10
#4F Hotel Circ		-	100	-	35
#5F South Stairs		-	100	-	59
#5F South Lifts and risers		-	100	-	51
#5F North Stairs		-	100	-	50
#5F Lobby		-	100	-	56
#5F Corridor Cub		75	-	-	7
#5F Room ##1 Bedroom		-	100	-	38
#5F Corridor Cub		75	-	-	7
#5F Room ##2 Bathroom		-	100	-	20
#5F Room ##2 Bedroom		-	100	-	37
#5F Room ##3 Bedroom		-	100	-	37
#5F Room ##4 Bathroom		-	100	-	20
#5F Room ##4 Bedroom		-	100	-	38
#5F Room ##5 Bathroom		-	100	-	21
#5F Room ##5 Bedroom		-	100	-	37
#5F Room ##6 Bathroom		-	100	-	20
#5F Room ##6 Bedroom		-	100	-	38
#5F Room ##7 Bathroom		-	100	-	20
#5F Room ##7 Bedroom		-	100	-	40
#5F Room ##9 Bedroom		-	100	-	38
#5F Room ##9 Bathroom		-	100	-	21
#5F Room ##8 Bathroom		-	100	-	20
#5F Room ##8 Bedroom		-	100	-	37
#5F ##1 bathroom		-	100	-	20
#5F Corr Cub		75	-	-	4
#5F ##3 Bathroom		-	100	-	21
#5F Corr Cub		75	-	-	7
#5F Corr Cub		75	-	-	7
#5F Room ##10 Bathroom		-	100	-	23
#5F Room ##10 Bedroom		-	100	-	40
#5F Corr Cub		75	-	-	3
#5F Corridor		-	100	-	142
#6F South Stairs		-	100	-	59
#6F South Lifts and risers		-	100	-	51
#6F North Stairs		-	100	-	50
#6F Lobby		-	100	-	56
#6F Corridor Cub		75	-	-	7
#6F Room ##1 Bedroom		-	100	-	38
#6F Corridor Cub		75	-	-	7
#6F Room ##2 Bathroom		-	100	-	20
#6F Room ##2 Bedroom		-	100	-	37
#6F Room ##3 Bedroom		-	100	-	37

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#6F Room ##4 Bathroom		-	100	-	20
#6F Room ##4 Bedroom		-	100	-	38
#6F Room ##5 Bathroom		-	100	-	21
#6F Room ##5 Bedroom		-	100	-	37
#6F Room ##6 Bathroom		-	100	-	20
#6F Room ##6 Bedroom		-	100	-	38
#6F Room ##7 Bathroom		-	100	-	20
#6F Room ##7 Bedroom		-	100	-	40
#6F Room ##9 Bedroom		-	100	-	38
#6F Room ##9 Bathroom		-	100	-	21
#6F Room ##8 Bathroom		-	100	-	20
#6F Room ##8 Bedroom		-	100	-	37
#6F ##1 bathroom		-	100	-	20
#6F Corr Cub		75	-	-	4
#6F ##3 Bathroom		-	100	-	21
#6F Corr Cub		75	-	-	7
#6F Corr Cub		75	-	-	7
#6F Room ##10 Bathroom		-	100	-	23
#6F Room ##10 Bedroom		-	100	-	40
#6F Corr Cub		75	-	-	3
#6F Corridor		-	100	-	142
#7F South Stairs		-	100	-	59
#7F South Lifts and risers		-	100	-	51
#7F North Stairs		-	100	-	50
#7F Lobby		-	100	-	56
#7F Corridor Cub		75	-	-	7
#7F Room ##1 Bedroom		-	100	-	38
#7F Corridor Cub		75	-	-	7
#7F Room ##2 Bathroom		-	100	-	20
#7F Room ##2 Bedroom		-	100	-	37
#7F Room ##3 Bedroom		-	100	-	37
#7F Room ##4 Bathroom		-	100	-	20
#7F Room ##4 Bedroom		-	100	-	38
#7F Room ##5 Bathroom		-	100	-	21
#7F Room ##5 Bedroom		-	100	-	37
#7F Room ##6 Bathroom		-	100	-	20
#7F Room ##6 Bedroom		-	100	-	38
#7F Room ##7 Bathroom		-	100	-	20
#7F Room ##7 Bedroom		-	100	-	40
#7F Room ##9 Bedroom		-	100	-	38
#7F Room ##9 Bathroom		-	100	-	21
#7F Room ##8 Bathroom		-	100	-	20
#7F Room ##8 Bedroom		-	100	-	37

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#7F ##1 bathroom		-	100	-	20
#7F Corr Cub		75	-	-	4
#7F ##3 Bathroom		-	100	-	21
#7F Corr Cub		75	-	-	7
#7F Corr Cub		75	-	-	7
#7F Room ##10 Bathroom		-	100	-	23
#7F Room ##10 Bedroom		-	100	-	40
#7F Corr Cub		75	-	-	3
#7F Corridor		-	100	-	142
#8F South Stairs		-	100	-	59
#8F South Lifts and risers		-	100	-	51
#8F North Stairs		-	100	-	50
#8F Lobby		-	100	-	56
#8F Corridor Cub		75	-	-	7
#8F Room ##1 Bedroom		-	100	-	38
#8F Corridor Cub		75	-	-	7
#8F Room ##2 Bathroom		-	100	-	20
#8F Room ##2 Bedroom		-	100	-	37
#8F Room ##3 Bedroom		-	100	-	37
#8F Room ##4 Bathroom		-	100	-	20
#8F Room ##4 Bedroom		-	100	-	38
#8F Room ##5 Bathroom		-	100	-	21
#8F Room ##5 Bedroom		-	100	-	37
#8F Room ##6 Bathroom		-	100	-	20
#8F Room ##6 Bedroom		-	100	-	38
#8F Room ##7 Bathroom		-	100	-	20
#8F Room ##7 Bedroom		-	100	-	40
#8F Room ##9 Bedroom		-	100	-	38
#8F Room ##9 Bathroom		-	100	-	21
#8F Room ##8 Bathroom		-	100	-	20
#8F Room ##8 Bedroom		-	100	-	37
#8F ##1 bathroom		-	100	-	20
#8F Corr Cub		75	-	-	4
#8F ##3 Bathroom		-	100	-	21
#8F Corr Cub		75	-	-	7
#8F Corr Cub		75	-	-	7
#8F Room ##10 Bathroom		-	100	-	23
#8F Room ##10 Bedroom		-	100	-	40
#8F Corr Cub		75	-	-	3
#8F Corridor		-	100	-	142
#9F South Stairs		-	100	-	59
#9F South Lifts and risers		-	100	-	51
#9F North Stairs		-	100	-	50

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#9F Lobby		-	100	-	56
#9F Corridor Cub		75	-	-	7
#9F Room ##1 Bedroom		-	100	-	38
#9F Corridor Cub		75	-	-	7
#9F Room ##2 Bathroom		-	100	-	20
#9F Room ##2 Bedroom		-	100	-	37
#9F Room ##3 Bedroom		-	100	-	37
#9F Room ##4 Bathroom		-	100	-	20
#9F Room ##4 Bedroom		-	100	-	38
#9F Room ##5 Bathroom		-	100	-	21
#9F Room ##5 Bedroom		-	100	-	37
#9F Room ##6 Bathroom		-	100	-	20
#9F Room ##6 Bedroom		-	100	-	38
#9F Room ##7 Bathroom		-	100	-	20
#9F Room ##7 Bedroom		-	100	-	40
#9F Room ##9 Bedroom		-	100	-	38
#9F Room ##9 Bathroom		-	100	-	21
#9F Room ##8 Bathroom		-	100	-	20
#9F Room ##8 Bedroom		-	100	-	37
#9F ##1 bathroom		-	100	-	20
#9F Corr Cub		75	-	-	4
#9F ##3 Bathroom		-	100	-	21
#9F Corr Cub		75	-	-	7
#9F Corr Cub		75	-	-	7
#9F Room ##10 Bathroom		-	100	-	23
#9F Room ##10 Bedroom		-	100	-	40
#9F Corr Cub		75	-	-	3
#9F Corridor		-	100	-	142
#10F South Stairs		-	100	-	59
#10F South Lifts and risers		-	100	-	51
#10F North Stairs		-	100	-	50
#10F Lobby		-	100	-	56
#10F Corridor Cub		75	-	-	7
#10F Room ##1 Bedroom		-	100	-	38
#10F Corridor Cub		75	-	-	7
#10F Room ##2 Bathroom		-	100	-	20
#10F Room ##2 Bedroom		-	100	-	37
#10F Room ##3 Bedroom		-	100	-	37
#10F Room ##4 Bathroom		-	100	-	20
#10F Room ##4 Bedroom		-	100	-	38
#10F Room ##5 Bathroom		-	100	-	21
#10F Room ##5 Bedroom		-	100	-	37
#10F Room ##6 Bathroom		-	100	-	20

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#10F Room ##6 Bedroom		-	100	-	38
#10F Room ##7 Bathroom		-	100	-	20
#10F Room ##7 Bedroom		-	100	-	40
#10F Room ##9 Bedroom		-	100	-	38
#10F Room ##9 Bathroom		-	100	-	21
#10F Room ##8 Bathroom		-	100	-	20
#10F Room ##8 Bedroom		-	100	-	37
#10F ##1 bathroom		-	100	-	20
#10F Corr Cub		75	-	-	4
#10F ##3 Bathroom		-	100	-	21
#10F Corr Cub		75	-	-	7
#10F Corr Cub		75	-	-	7
#10F Room ##10 Bathroom		-	100	-	23
#10F Room ##10 Bedroom		-	100	-	40
#10F Corr Cub		75	-	-	3
#10F Corridor		-	100	-	142
#11F South Stairs		-	100	-	59
#11F South Lifts and risers		-	100	-	51
#11F North Stairs		-	100	-	50
#11F Lobby		-	100	-	56
#11F Corridor Cub		75	-	-	7
#11F Room ##1 Bedroom		-	100	-	38
#11F Corridor Cub		75	-	-	7
#11F Room ##2 Bathroom		-	100	-	20
#11F Room ##2 Bedroom		-	100	-	37
#11F Room ##3 Bedroom		-	100	-	37
#11F Room ##4 Bathroom		-	100	-	20
#11F Room ##4 Bedroom		-	100	-	38
#11F Room ##5 Bathroom		-	100	-	21
#11F Room ##5 Bedroom		-	100	-	37
#11F Room ##6 Bathroom		-	100	-	20
#11F Room ##6 Bedroom		-	100	-	38
#11F Room ##7 Bathroom		-	100	-	20
#11F Room ##7 Bedroom		-	100	-	40
#11F Room ##9 Bedroom		-	100	-	38
#11F Room ##9 Bathroom		-	100	-	21
#11F Room ##8 Bathroom		-	100	-	20
#11F Room ##8 Bedroom		-	100	-	37
#11F ##1 bathroom		-	100	-	20
#11F Corr Cub		75	-	-	4
#11F ##3 Bathroom		-	100	-	21
#11F Corr Cub		75	-	-	7
#11F Corr Cub		75	-	-	7

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#11F Room ##10 Bathroom		-	100	-	23
#11F Room ##10 Bedroom		-	100	-	40
#11F Corr Cub		75	-	-	3
#11F Corridor		-	100	-	142
#12F South Stairs		-	100	-	59
#12F South Lifts and risers		-	100	-	51
#12F North Stairs		-	100	-	50
#12F Lobby		-	100	-	56
#12F Corridor Cub		75	-	-	7
#12F Room ##1 Bedroom		-	100	-	38
#12F Corridor Cub		75	-	-	7
#12F Room ##2 Bathroom		-	100	-	20
#12F Room ##2 Bedroom		-	100	-	37
#12F Room ##3 Bedroom		-	100	-	37
#12F Room ##4 Bathroom		-	100	-	20
#12F Room ##4 Bedroom		-	100	-	38
#12F Room ##5 Bathroom		-	100	-	21
#12F Room ##5 Bedroom		-	100	-	37
#12F Room ##6 Bathroom		-	100	-	20
#12F Room ##6 Bedroom		-	100	-	38
#12F Room ##7 Bathroom		-	100	-	20
#12F Room ##7 Bedroom		-	100	-	40
#12F Room ##9 Bedroom		-	100	-	38
#12F Room ##9 Bathroom		-	100	-	21
#12F Room ##8 Bathroom		-	100	-	20
#12F Room ##8 Bedroom		-	100	-	37
#12F ##1 bathroom		-	100	-	20
#12F Corr Cub		75	-	-	4
#12F ##3 Bathroom		-	100	-	21
#12F Corr Cub		75	-	-	7
#12F Corr Cub		75	-	-	7
#12F Room ##10 Bathroom		-	100	-	23
#12F Room ##10 Bedroom		-	100	-	40
#12F Corr Cub		75	-	-	3
#12F Corridor		-	100	-	142
#13F South Stairs		-	100	-	59
#13F South Lifts and risers		-	100	-	51
#13F North Stairs		-	100	-	50
#13F Lobby		-	100	-	56
#13F Corridor Cub		75	-	-	7
#13F Room ##1 Bedroom		-	100	-	38
#13F Corridor Cub		75	-	-	7
#13F Room ##2 Bathroom		-	100	-	20

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#13F Room ##2 Bedroom		-	100	-	37
#13F Room ##3 Bedroom		-	100	-	37
#13F Room ##4 Bathroom		-	100	-	20
#13F Room ##4 Bedroom		-	100	-	38
#13F Room ##5 Bathroom		-	100	-	21
#13F Room ##5 Bedroom		-	100	-	37
#13F Room ##6 Bathroom		-	100	-	20
#13F Room ##6 Bedroom		-	100	-	38
#13F Room ##7 Bathroom		-	100	-	20
#13F Room ##7 Bedroom		-	100	-	40
#13F Room ##9 Bedroom		-	100	-	38
#13F Room ##9 Bathroom		-	100	-	21
#13F Room ##8 Bathroom		-	100	-	20
#13F Room ##8 Bedroom		-	100	-	37
#13F ##1 bathroom		-	100	-	20
#13F Corr Cub		75	-	-	4
#13F ##3 Bathroom		-	100	-	21
#13F Corr Cub		75	-	-	7
#13F Corr Cub		75	-	-	7
#13F Room ##10 Bathroom		-	100	-	23
#13F Room ##10 Bedroom		-	100	-	40
#13F Corr Cub		75	-	-	3
#13F Corridor		-	100	-	142
#14F South Stairs		-	100	-	59
#14F South Lifts and risers		-	100	-	51
#14F North Stairs		-	100	-	50
#14F Lobby		-	100	-	56
#14F Corridor Cub		75	-	-	7
#14F Room ##1 Bedroom		-	100	-	38
#14F Corridor Cub		75	-	-	7
#14F Room ##2 Bathroom		-	100	-	20
#14F Room ##2 Bedroom		-	100	-	37
#14F Room ##3 Bedroom		-	100	-	37
#14F Room ##4 Bathroom		-	100	-	20
#14F Room ##4 Bedroom		-	100	-	38
#14F Room ##5 Bathroom		-	100	-	21
#14F Room ##5 Bedroom		-	100	-	37
#14F Room ##6 Bathroom		-	100	-	20
#14F Room ##6 Bedroom		-	100	-	38
#14F Room ##7 Bathroom		-	100	-	20
#14F Room ##7 Bedroom		-	100	-	40
#14F Room ##9 Bedroom		-	100	-	38
#14F Room ##9 Bathroom		-	100	-	21

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#14F Room ##8 Bathroom		-	100	-	20
#14F Room ##8 Bedroom		-	100	-	37
#14F ##1 bathroom		-	100	-	20
#14F Corr Cub		75	-	-	4
#14F ##3 Bathroom		-	100	-	21
#14F Corr Cub		75	-	-	7
#14F Corr Cub		75	-	-	7
#14F Room ##10 Bathroom		-	100	-	23
#14F Room ##10 Bedroom		-	100	-	40
#14F Corr Cub		75	-	-	3
#14F Corridor		-	100	-	142
#15F South Stairs		-	100	-	59
#15F South Lifts and risers		-	100	-	51
#15F North Stairs		-	100	-	50
#15F Lobby		-	100	-	56
#15F Corridor Cub		75	-	-	7
#15F Room ##1 Bedroom		-	100	-	38
#15F Corridor Cub		75	-	-	7
#15F Room ##2 Bathroom		-	100	-	20
#15F Room ##2 Bedroom		-	100	-	37
#15F Room ##3 Bedroom		-	100	-	37
#15F Room ##4 Bathroom		-	100	-	20
#15F Room ##4 Bedroom		-	100	-	38
#15F Room ##5 Bathroom		-	100	-	21
#15F Room ##5 Bedroom		-	100	-	37
#15F Room ##6 Bathroom		-	100	-	20
#15F Room ##6 Bedroom		-	100	-	38
#15F Room ##7 Bathroom		-	100	-	20
#15F Room ##7 Bedroom		-	100	-	40
#15F Room ##9 Bedroom		-	100	-	38
#15F Room ##9 Bathroom		-	100	-	21
#15F Room ##8 Bathroom		-	100	-	20
#15F Room ##8 Bedroom		-	100	-	37
#15F ##1 bathroom		-	100	-	20
#15F Corr Cub		75	-	-	4
#15F ##3 Bathroom		-	100	-	21
#15F Corr Cub		75	-	-	7
#15F Corr Cub		75	-	-	7
#15F Room ##10 Bathroom		-	100	-	23
#15F Room ##10 Bedroom		-	100	-	40
#15F Corr Cub		75	-	-	3
#15F Corridor		-	100	-	142
#15F South Stairs		-	100	-	59

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
#15F South Lifts and risers		-	100	-	51
#15F North Stairs		-	100	-	50
#15F Lobby		-	100	-	56
#15F Corridor Cub		75	-	-	7
#15F Room ##1 Bedroom		-	100	-	38
#15F Corridor Cub		75	-	-	7
#15F Room ##2 Bathroom		-	100	-	20
#15F Room ##2 Bedroom		-	100	-	37
#15F Room ##3 Bedroom		-	100	-	37
#15F Room ##4 Bathroom		-	100	-	20
#15F Room ##4 Bedroom		-	100	-	38
#15F Room ##5 Bathroom		-	100	-	21
#15F Room ##5 Bedroom		-	100	-	37
#15F Room ##6 Bathroom		-	100	-	20
#15F Room ##6 Bedroom		-	100	-	38
#15F Room ##7 Bathroom		-	100	-	20
#15F Room ##7 Bedroom		-	100	-	40
#15F Room ##9 Bedroom		-	100	-	38
#15F Room ##9 Bathroom		-	100	-	21
#15F Room ##8 Bathroom		-	100	-	20
#15F Room ##8 Bedroom		-	100	-	37
#15F ##1 bathroom		-	100	-	20
#15F Corr Cub		75	-	-	4
#15F ##3 Bathroom		-	100	-	21
#15F Corr Cub		75	-	-	7
#15F Corr Cub		75	-	-	7
#15F Room ##10 Bathroom		-	100	-	23
#15F Room ##10 Bedroom		-	100	-	40
#15F Corr Cub		75	-	-	3
#15F Corridor		-	100	-	142

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?
GF South Stairs	N/A	N/A
GF South Lifts and risers	N/A	N/A
GF Lobby	NO (-48.9%)	NO
GF North Stairs	NO (-70%)	NO
#1F South Stairs	NO (-28.6%)	NO
#1F South Lifts and risers	N/A	N/A
#1F North Stairs	NO (-92.5%)	NO
#1F Lobby	N/A	N/A
#1F Lobby	NO (-68.9%)	NO
#2F South Stairs	NO (-24.2%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
#2F South Lifts and risers	N/A	N/A
#2F North Stairs	NO (-85.4%)	NO
#2F Lobby	N/A	N/A
#2F Resturant	NO (-38.4%)	NO
#2F Toilets	N/A	N/A
#2F Store	N/A	N/A
#2F Kitchen	NO (-51.7%)	NO
#2F Lobby	NO (-67.2%)	NO
#3F South Stairs	N/A	N/A
#3F South Lifts and risers	N/A	N/A
#3F North Stairs	N/A	N/A
#3F Lobby	N/A	N/A
GF plant /gen	N/A	N/A
#1F Bar Lounge	NO (-48.3%)	NO
#1FStaff Office	NO (-46.3%)	NO
#1F Staff Office	NO (-54.2%)	NO
#1F Toilets	NO (-93.9%)	NO
#1F Acc Hotel Bathroom	N/A	N/A
#1F Hotel Acc Bedroom	NO (-79.6%)	NO
#1F Hotel Bedroom	NO (-92.2%)	NO
#1F Hotel Bathroom	N/A	N/A
#1F Reception	NO (-56.8%)	NO
#2F Toilets	NO (-93.9%)	NO
#2F Hotel Bedroom	NO (-92.2%)	NO
#2F Hotel Bathroom	N/A	N/A
#2F Hotel Acc Bathroom	N/A	N/A
#2F Hotel Acc Bedroom	NO (-78.4%)	NO
#4F South Stairs	NO (-54.4%)	NO
#4F South Lifts and risers	N/A	N/A
#4F North Stairs	NO (-86.5%)	NO
#4F Lobby	N/A	N/A
#4F Corridor Cub	N/A	N/A
#4F Room ##1 Bedroom	NO (-66.6%)	NO
#4F Corridor Cub	N/A	N/A
#4F Room ##2 Bathroom	N/A	N/A
#4F Room ##2 Bedroom	NO (-69.9%)	NO
#4F Room ##3 Bedroom	NO (-70.3%)	NO
#4F Room ##4 Bathroom	N/A	N/A
#4F Room ##4 Bedroom	NO (-70.7%)	NO
#4F Room ##5 Bathroom	N/A	N/A
#4F Room ##5 Bedroom	NO (-70.3%)	NO
#4F Room ##6 Bathroom	N/A	N/A
#4F Room ##6 Bedroom	NO (-70.8%)	NO
#4F Room ##7 Bathroom	N/A	N/A
#4F Room ##7 Bedroom	NO (-46.9%)	NO
#4F Room ##9 Bedroom	NO (-64.7%)	NO
#4F Room ##9 Bathroom	N/A	N/A
#4F Room ##8 Bathroom	N/A	N/A
#4F Room ##8 Bedroom	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
#4F ##1 bathroom	N/A	N/A
#4F Corr Cub	N/A	N/A
#4F ##3 Bathroom	N/A	N/A
#4F Corr Cub	N/A	N/A
#4F Corr Cub	N/A	N/A
#4F Room ##10 Bathroom	N/A	N/A
#4F Room ##10 Bedroom	NO (-79.5%)	NO
#4F Corr Cub	N/A	N/A
#4F Corridor	NO (-79.7%)	NO
#4F Hotel Acc Bathroom	NO (-90.2%)	NO
#4F Hotel Acc Bedroom	NO (-94.6%)	NO
#4F Hotel ##12 Bedroom	NO (-81.7%)	NO
#4F Hotel ##12 Bathroom	N/A	N/A
#4F Hotel ##11 Bathroom	N/A	N/A
#4F Hotel ##11 Bedroom	NO (-83.3%)	NO
#4F Hotel Store	N/A	N/A
#4F Hotel Circ	N/A	N/A
#5F South Stairs	NO (-51.5%)	NO
#5F South Lifts and risers	N/A	N/A
#5F North Stairs	NO (-77.8%)	NO
#5F Lobby	N/A	N/A
#5F Corridor Cub	N/A	N/A
#5F Room ##1 Bedroom	NO (-66%)	NO
#5F Corridor Cub	N/A	N/A
#5F Room ##2 Bathroom	N/A	N/A
#5F Room ##2 Bedroom	NO (-68.9%)	NO
#5F Room ##3 Bedroom	NO (-68.9%)	NO
#5F Room ##4 Bathroom	N/A	N/A
#5F Room ##4 Bedroom	NO (-69.4%)	NO
#5F Room ##5 Bathroom	N/A	N/A
#5F Room ##5 Bedroom	NO (-69%)	NO
#5F Room ##6 Bathroom	N/A	N/A
#5F Room ##6 Bedroom	NO (-69.4%)	NO
#5F Room ##7 Bathroom	N/A	N/A
#5F Room ##7 Bedroom	NO (-50.3%)	NO
#5F Room ##9 Bedroom	NO (-77.2%)	NO
#5F Room ##9 Bathroom	N/A	N/A
#5F Room ##8 Bathroom	N/A	N/A
#5F Room ##8 Bedroom	NO (-78.4%)	NO
#5F ##1 bathroom	N/A	N/A
#5F Corr Cub	N/A	N/A
#5F ##3 Bathroom	N/A	N/A
#5F Corr Cub	N/A	N/A
#5F Corr Cub	N/A	N/A
#5F Room ##10 Bathroom	N/A	N/A
#5F Room ##10 Bedroom	NO (-77.4%)	NO
#5F Corr Cub	N/A	N/A
#5F Corridor	NO (-79.6%)	NO
#6F South Stairs	NO (-46.1%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
#6F South Lifts and risers	N/A	N/A
#6F North Stairs	NO (-75.8%)	NO
#6F Lobby	N/A	N/A
#6F Corridor Cub	N/A	N/A
#6F Room ##1 Bedroom	NO (-65.9%)	NO
#6F Corridor Cub	N/A	N/A
#6F Room ##2 Bathroom	N/A	N/A
#6F Room ##2 Bedroom	NO (-68.9%)	NO
#6F Room ##3 Bedroom	NO (-68.9%)	NO
#6F Room ##4 Bathroom	N/A	N/A
#6F Room ##4 Bedroom	NO (-69.4%)	NO
#6F Room ##5 Bathroom	N/A	N/A
#6F Room ##5 Bedroom	NO (-69%)	NO
#6F Room ##6 Bathroom	N/A	N/A
#6F Room ##6 Bedroom	NO (-69.4%)	NO
#6F Room ##7 Bathroom	N/A	N/A
#6F Room ##7 Bedroom	NO (-46.2%)	NO
#6F Room ##9 Bedroom	NO (-72.5%)	NO
#6F Room ##9 Bathroom	N/A	N/A
#6F Room ##8 Bathroom	N/A	N/A
#6F Room ##8 Bedroom	NO (-71.9%)	NO
#6F ##1 bathroom	N/A	N/A
#6F Corr Cub	N/A	N/A
#6F ##3 Bathroom	N/A	N/A
#6F Corr Cub	N/A	N/A
#6F Corr Cub	N/A	N/A
#6F Room ##10 Bathroom	N/A	N/A
#6F Room ##10 Bedroom	NO (-74.6%)	NO
#6F Corr Cub	N/A	N/A
#6F Corridor	NO (-79.6%)	NO
#7F South Stairs	NO (-56.4%)	NO
#7F South Lifts and risers	N/A	N/A
#7F North Stairs	NO (-75.7%)	NO
#7F Lobby	N/A	N/A
#7F Corridor Cub	N/A	N/A
#7F Room ##1 Bedroom	NO (-65.7%)	NO
#7F Corridor Cub	N/A	N/A
#7F Room ##2 Bathroom	N/A	N/A
#7F Room ##2 Bedroom	NO (-68.9%)	NO
#7F Room ##3 Bedroom	NO (-68.9%)	NO
#7F Room ##4 Bathroom	N/A	N/A
#7F Room ##4 Bedroom	NO (-69.4%)	NO
#7F Room ##5 Bathroom	N/A	N/A
#7F Room ##5 Bedroom	NO (-69%)	NO
#7F Room ##6 Bathroom	N/A	N/A
#7F Room ##6 Bedroom	NO (-69.4%)	NO
#7F Room ##7 Bathroom	N/A	N/A
#7F Room ##7 Bedroom	NO (-52.3%)	NO
#7F Room ##9 Bedroom	NO (-72.5%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
#7F Room ##9 Bathroom	N/A	N/A
#7F Room ##8 Bathroom	N/A	N/A
#7F Room ##8 Bedroom	NO (-71.8%)	NO
#7F ##1 bathroom	N/A	N/A
#7F Corr Cub	N/A	N/A
#7F ##3 Bathroom	N/A	N/A
#7F Corr Cub	N/A	N/A
#7F Corr Cub	N/A	N/A
#7F Room ##10 Bathroom	N/A	N/A
#7F Room ##10 Bedroom	NO (-74.6%)	NO
#7F Corr Cub	N/A	N/A
#7F Corridor	NO (-67.9%)	NO
#8F South Stairs	NO (-56.4%)	NO
#8F South Lifts and risers	N/A	N/A
#8F North Stairs	NO (-75.5%)	NO
#8F Lobby	N/A	N/A
#8F Corridor Cub	N/A	N/A
#8F Room ##1 Bedroom	NO (-65.6%)	NO
#8F Corridor Cub	N/A	N/A
#8F Room ##2 Bathroom	N/A	N/A
#8F Room ##2 Bedroom	NO (-68.9%)	NO
#8F Room ##3 Bedroom	NO (-68.9%)	NO
#8F Room ##4 Bathroom	N/A	N/A
#8F Room ##4 Bedroom	NO (-69.4%)	NO
#8F Room ##5 Bathroom	N/A	N/A
#8F Room ##5 Bedroom	NO (-69%)	NO
#8F Room ##6 Bathroom	N/A	N/A
#8F Room ##6 Bedroom	NO (-69.4%)	NO
#8F Room ##7 Bathroom	N/A	N/A
#8F Room ##7 Bedroom	NO (-52.3%)	NO
#8F Room ##9 Bedroom	NO (-72.5%)	NO
#8F Room ##9 Bathroom	N/A	N/A
#8F Room ##8 Bathroom	N/A	N/A
#8F Room ##8 Bedroom	NO (-71.6%)	NO
#8F ##1 bathroom	N/A	N/A
#8F Corr Cub	N/A	N/A
#8F ##3 Bathroom	N/A	N/A
#8F Corr Cub	N/A	N/A
#8F Corr Cub	N/A	N/A
#8F Room ##10 Bathroom	N/A	N/A
#8F Room ##10 Bedroom	NO (-74.5%)	NO
#8F Corr Cub	N/A	N/A
#8F Corridor	NO (-67.8%)	NO
#9F South Stairs	NO (-56.3%)	NO
#9F South Lifts and risers	N/A	N/A
#9F North Stairs	NO (-75.5%)	NO
#9F Lobby	N/A	N/A
#9F Corridor Cub	N/A	N/A
#9F Room ##1 Bedroom	NO (-65.6%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
#9F Corridor Cub	N/A	N/A
#9F Room ##2 Bathroom	N/A	N/A
#9F Room ##2 Bedroom	NO (-68.9%)	NO
#9F Room ##3 Bedroom	NO (-68.9%)	NO
#9F Room ##4 Bathroom	N/A	N/A
#9F Room ##4 Bedroom	NO (-69.4%)	NO
#9F Room ##5 Bathroom	N/A	N/A
#9F Room ##5 Bedroom	NO (-69%)	NO
#9F Room ##6 Bathroom	N/A	N/A
#9F Room ##6 Bedroom	NO (-69.4%)	NO
#9F Room ##7 Bathroom	N/A	N/A
#9F Room ##7 Bedroom	NO (-52.3%)	NO
#9F Room ##9 Bedroom	NO (-72.4%)	NO
#9F Room ##9 Bathroom	N/A	N/A
#9F Room ##8 Bathroom	N/A	N/A
#9F Room ##8 Bedroom	NO (-71.6%)	NO
#9F ##1 bathroom	N/A	N/A
#9F Corr Cub	N/A	N/A
#9F ##3 Bathroom	N/A	N/A
#9F Corr Cub	N/A	N/A
#9F Corr Cub	N/A	N/A
#9F Room ##10 Bathroom	N/A	N/A
#9F Room ##10 Bedroom	NO (-74.4%)	NO
#9F Corr Cub	N/A	N/A
#9F Corridor	NO (-67.8%)	NO
#10F South Stairs	NO (-56.3%)	NO
#10F South Lifts and risers	N/A	N/A
#10F North Stairs	NO (-75.5%)	NO
#10F Lobby	N/A	N/A
#10F Corridor Cub	N/A	N/A
#10F Room ##1 Bedroom	NO (-65.4%)	NO
#10F Corridor Cub	N/A	N/A
#10F Room ##2 Bathroom	N/A	N/A
#10F Room ##2 Bedroom	NO (-68.9%)	NO
#10F Room ##3 Bedroom	NO (-68.9%)	NO
#10F Room ##4 Bathroom	N/A	N/A
#10F Room ##4 Bedroom	NO (-69.4%)	NO
#10F Room ##5 Bathroom	N/A	N/A
#10F Room ##5 Bedroom	NO (-69%)	NO
#10F Room ##6 Bathroom	N/A	N/A
#10F Room ##6 Bedroom	NO (-69.4%)	NO
#10F Room ##7 Bathroom	N/A	N/A
#10F Room ##7 Bedroom	NO (-52.3%)	NO
#10F Room ##9 Bedroom	NO (-72.2%)	NO
#10F Room ##9 Bathroom	N/A	N/A
#10F Room ##8 Bathroom	N/A	N/A
#10F Room ##8 Bedroom	NO (-71.5%)	NO
#10F ##1 bathroom	N/A	N/A
#10F Corr Cub	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
#10F ##3 Bathroom	N/A	N/A
#10F Corr Cub	N/A	N/A
#10F Corr Cub	N/A	N/A
#10F Room ##10 Bathroom	N/A	N/A
#10F Room ##10 Bedroom	NO (-74.3%)	NO
#10F Corr Cub	N/A	N/A
#10F Corridor	NO (-67.8%)	NO
#11F South Stairs	NO (-56.3%)	NO
#11F South Lifts and risers	N/A	N/A
#11F North Stairs	NO (-75.1%)	NO
#11F Lobby	N/A	N/A
#11F Corridor Cub	N/A	N/A
#11F Room ##1 Bedroom	NO (-65.2%)	NO
#11F Corridor Cub	N/A	N/A
#11F Room ##2 Bathroom	N/A	N/A
#11F Room ##2 Bedroom	NO (-68.9%)	NO
#11F Room ##3 Bedroom	NO (-68.9%)	NO
#11F Room ##4 Bathroom	N/A	N/A
#11F Room ##4 Bedroom	NO (-69.4%)	NO
#11F Room ##5 Bathroom	N/A	N/A
#11F Room ##5 Bedroom	NO (-69%)	NO
#11F Room ##6 Bathroom	N/A	N/A
#11F Room ##6 Bedroom	NO (-69.4%)	NO
#11F Room ##7 Bathroom	N/A	N/A
#11F Room ##7 Bedroom	NO (-52.3%)	NO
#11F Room ##9 Bedroom	NO (-72.1%)	NO
#11F Room ##9 Bathroom	N/A	N/A
#11F Room ##8 Bathroom	N/A	N/A
#11F Room ##8 Bedroom	NO (-71.3%)	NO
#11F ##1 bathroom	N/A	N/A
#11F Corr Cub	N/A	N/A
#11F ##3 Bathroom	N/A	N/A
#11F Corr Cub	N/A	N/A
#11F Corr Cub	N/A	N/A
#11F Room ##10 Bathroom	N/A	N/A
#11F Room ##10 Bedroom	NO (-74.2%)	NO
#11F Corr Cub	N/A	N/A
#11F Corridor	NO (-67.6%)	NO
#12F South Stairs	NO (-56.2%)	NO
#12F South Lifts and risers	N/A	N/A
#12F North Stairs	NO (-74.6%)	NO
#12F Lobby	N/A	N/A
#12F Corridor Cub	N/A	N/A
#12F Room ##1 Bedroom	NO (-64.8%)	NO
#12F Corridor Cub	N/A	N/A
#12F Room ##2 Bathroom	N/A	N/A
#12F Room ##2 Bedroom	NO (-69%)	NO
#12F Room ##3 Bedroom	NO (-68.9%)	NO
#12F Room ##4 Bathroom	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
#12F Room ##4 Bedroom	NO (-69.4%)	NO
#12F Room ##5 Bathroom	N/A	N/A
#12F Room ##5 Bedroom	NO (-69%)	NO
#12F Room ##6 Bathroom	N/A	N/A
#12F Room ##6 Bedroom	NO (-69.4%)	NO
#12F Room ##7 Bathroom	N/A	N/A
#12F Room ##7 Bedroom	NO (-52.3%)	NO
#12F Room ##9 Bedroom	NO (-72%)	NO
#12F Room ##9 Bathroom	N/A	N/A
#12F Room ##8 Bathroom	N/A	N/A
#12F Room ##8 Bedroom	NO (-71.2%)	NO
#12F ##1 bathroom	N/A	N/A
#12F Corr Cub	N/A	N/A
#12F ##3 Bathroom	N/A	N/A
#12F Corr Cub	N/A	N/A
#12F Corr Cub	N/A	N/A
#12F Room ##10 Bathroom	N/A	N/A
#12F Room ##10 Bedroom	NO (-74.1%)	NO
#12F Corr Cub	N/A	N/A
#12F Corridor	NO (-67.3%)	NO
#13F South Stairs	NO (-56.1%)	NO
#13F South Lifts and risers	N/A	N/A
#13F North Stairs	NO (-74.1%)	NO
#13F Lobby	N/A	N/A
#13F Corridor Cub	N/A	N/A
#13F Room ##1 Bedroom	NO (-64.4%)	NO
#13F Corridor Cub	N/A	N/A
#13F Room ##2 Bathroom	N/A	N/A
#13F Room ##2 Bedroom	NO (-69%)	NO
#13F Room ##3 Bedroom	NO (-69%)	NO
#13F Room ##4 Bathroom	N/A	N/A
#13F Room ##4 Bedroom	NO (-69.4%)	NO
#13F Room ##5 Bathroom	N/A	N/A
#13F Room ##5 Bedroom	NO (-69%)	NO
#13F Room ##6 Bathroom	N/A	N/A
#13F Room ##6 Bedroom	NO (-69.4%)	NO
#13F Room ##7 Bathroom	N/A	N/A
#13F Room ##7 Bedroom	NO (-52.3%)	NO
#13F Room ##9 Bedroom	NO (-71.8%)	NO
#13F Room ##9 Bathroom	N/A	N/A
#13F Room ##8 Bathroom	N/A	N/A
#13F Room ##8 Bedroom	NO (-71%)	NO
#13F ##1 bathroom	N/A	N/A
#13F Corr Cub	N/A	N/A
#13F ##3 Bathroom	N/A	N/A
#13F Corr Cub	N/A	N/A
#13F Corr Cub	N/A	N/A
#13F Room ##10 Bathroom	N/A	N/A
#13F Room ##10 Bedroom	NO (-73.9%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
#13F Corr Cub	N/A	N/A
#13F Corridor	NO (-67.1%)	NO
#14F South Stairs	NO (-56.1%)	NO
#14F South Lifts and risers	N/A	N/A
#14F North Stairs	NO (-73.2%)	NO
#14F Lobby	N/A	N/A
#14F Corridor Cub	N/A	N/A
#14F Room ##1 Bedroom	NO (-63.9%)	NO
#14F Corridor Cub	N/A	N/A
#14F Room ##2 Bathroom	N/A	N/A
#14F Room ##2 Bedroom	NO (-69%)	NO
#14F Room ##3 Bedroom	NO (-69%)	NO
#14F Room ##4 Bathroom	N/A	N/A
#14F Room ##4 Bedroom	NO (-69.4%)	NO
#14F Room ##5 Bathroom	N/A	N/A
#14F Room ##5 Bedroom	NO (-69%)	NO
#14F Room ##6 Bathroom	N/A	N/A
#14F Room ##6 Bedroom	NO (-69.4%)	NO
#14F Room ##7 Bathroom	N/A	N/A
#14F Room ##7 Bedroom	NO (-52.3%)	NO
#14F Room ##9 Bedroom	NO (-71.7%)	NO
#14F Room ##9 Bathroom	N/A	N/A
#14F Room ##8 Bathroom	N/A	N/A
#14F Room ##8 Bedroom	NO (-70.7%)	NO
#14F ##1 bathroom	N/A	N/A
#14F Corr Cub	N/A	N/A
#14F ##3 Bathroom	N/A	N/A
#14F Corr Cub	N/A	N/A
#14F Corr Cub	N/A	N/A
#14F Room ##10 Bathroom	N/A	N/A
#14F Room ##10 Bedroom	NO (-73.8%)	NO
#14F Corr Cub	N/A	N/A
#14F Corridor	NO (-66.6%)	NO
#15F South Stairs	NO (-56%)	NO
#15F South Lifts and risers	N/A	N/A
#15F North Stairs	NO (-71.7%)	NO
#15F Lobby	N/A	N/A
#15F Corridor Cub	N/A	N/A
#15F Room ##1 Bedroom	NO (-63.1%)	NO
#15F Corridor Cub	N/A	N/A
#15F Room ##2 Bathroom	N/A	N/A
#15F Room ##2 Bedroom	NO (-69%)	NO
#15F Room ##3 Bedroom	NO (-69%)	NO
#15F Room ##4 Bathroom	N/A	N/A
#15F Room ##4 Bedroom	NO (-69.4%)	NO
#15F Room ##5 Bathroom	N/A	N/A
#15F Room ##5 Bedroom	NO (-69.1%)	NO
#15F Room ##6 Bathroom	N/A	N/A
#15F Room ##6 Bedroom	NO (-69.5%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
#15F Room ##7 Bathroom	N/A	N/A
#15F Room ##7 Bedroom	NO (-52.3%)	NO
#15F Room ##9 Bedroom	NO (-71.5%)	NO
#15F Room ##9 Bathroom	N/A	N/A
#15F Room ##8 Bathroom	N/A	N/A
#15F Room ##8 Bedroom	NO (-70.6%)	NO
#15F ##1 bathroom	N/A	N/A
#15F Corr Cub	N/A	N/A
#15F ##3 Bathroom	N/A	N/A
#15F Corr Cub	N/A	N/A
#15F Corr Cub	N/A	N/A
#15F Room ##10 Bathroom	N/A	N/A
#15F Room ##10 Bedroom	NO (-73.6%)	NO
#15F Corr Cub	N/A	N/A
#15F Corridor	NO (-65.8%)	NO
#15F South Stairs	NO (-56%)	NO
#15F South Lifts and risers	N/A	N/A
#15F North Stairs	NO (-69.6%)	NO
#15F Lobby	N/A	N/A
#15F Corridor Cub	N/A	N/A
#15F Room ##1 Bedroom	NO (-62.1%)	NO
#15F Corridor Cub	N/A	N/A
#15F Room ##2 Bathroom	N/A	N/A
#15F Room ##2 Bedroom	NO (-69.1%)	NO
#15F Room ##3 Bedroom	NO (-69%)	NO
#15F Room ##4 Bathroom	N/A	N/A
#15F Room ##4 Bedroom	NO (-69.5%)	NO
#15F Room ##5 Bathroom	N/A	N/A
#15F Room ##5 Bedroom	NO (-69.1%)	NO
#15F Room ##6 Bathroom	N/A	N/A
#15F Room ##6 Bedroom	NO (-69.6%)	NO
#15F Room ##7 Bathroom	N/A	N/A
#15F Room ##7 Bedroom	NO (-52.4%)	NO
#15F Room ##9 Bedroom	NO (-71.1%)	NO
#15F Room ##9 Bathroom	N/A	N/A
#15F Room ##8 Bathroom	N/A	N/A
#15F Room ##8 Bedroom	NO (-70.2%)	NO
#15F ##1 bathroom	N/A	N/A
#15F Corr Cub	N/A	N/A
#15F ##3 Bathroom	N/A	N/A
#15F Corr Cub	N/A	N/A
#15F Corr Cub	N/A	N/A
#15F Room ##10 Bathroom	N/A	N/A
#15F Room ##10 Bedroom	NO (-73.4%)	NO
#15F Corr Cub	N/A	N/A
#15F Corridor	NO (-64.8%)	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?	YES
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]	5874.2	5874.2
External area [m ²]	4415.8	4415.8
Weather	SWI	SWI
Infiltration [m ³ /hm ² @ 50Pa]	5	3
Average conductance [W/K]	2532.89	2787.15
Average U-value [W/m ² K]	0.57	0.63
Alpha value* [%]	10.35	10

* 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
100 C1 Hotels
C2 Residential Institutions: Hospitals and Care Homes
C2 Residential Institutions: Residential schools
C2 Residential Institutions: Universities and colleges
C2A Secure Residential Institutions
Residential spaces
D1 Non-residential Institutions: Community/Day Centre
D1 Non-residential Institutions: Libraries, Museums, and Galleries
D1 Non-residential Institutions: Education
D1 Non-residential Institutions: Primary Health Care Building
D1 Non-residential Institutions: Crown and County Courts
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	3.88	6.16
Cooling	2.24	4.77
Auxiliary	7.41	3.68
Lighting	8.07	14.49
Hot water	222.53	199.8
Equipment*	20.74	20.74
TOTAL **	226.73	228.91

* Energy used by equipment does not count towards the total for consumption or calculating emissions.

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

Energy Production by Technology [kWh/m²]

	Actual	Notional
Photovoltaic systems	0	0
Wind turbines	0	0
CHP generators	17.4	0
Solar thermal systems	0	0

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	93.92	121.77
Primary energy* [kWh/m ²]	294.33	349.31
Total emissions [kg/m ²]	50	57.9

* 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 SSEFF	Cool SSEER	Heat gen SEFF	Cool gen SEER	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	58.9	35	3.9	2.2	3.7	4.22	4.33	4.4	5.9
	Notional	0	0	0	0	0	0	0	----	----
[ST] No Heating or Cooling										
	Actual	0	0	0	0	0	0	0	0	0
	Notional	56.7	65	6.2	4.8	3.7	2.56	3.79	----	----

Key to terms

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

Key Features

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

Building fabric

Element	U _{i-Typ}	U _{i-Min}	Surface where the minimum value occurs*
Wall	0.23	0.09	3F000000:Surf[4]
Floor	0.2	0.06	10000005:Surf[0]
Roof	0.15	0.18	GF000005:Surf[1]
Windows, roof windows, and rooflights	1.5	1.6	GF000005:Surf[3]
Personnel doors	1.5	-	No Personnel doors in building
Vehicle access & similar large doors	1.5	-	No Vehicle access doors in building
High usage entrance doors	1.5	-	No High usage entrance doors in building
U _{i-Typ} = Typical individual element U-values [W/(m²K)]		U _{i-Min} = Minimum individual element U-values [W/(m²K)]	
* There might be more than one surface where the minimum U-value occurs.			

Air Permeability	Typical value	This building
m³/(h.m²) at 50 Pa	5	5