



Strategic MEP and Sustainability Consultants

23057 Hotspur Press

Energy Strategy Report

14/03/2025

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EXECUTIVE SUMMARY

Background

This report is prepared to support the submission to Manchester City Council of a series of design amendments to the proposed redevelopment of the site which is subject to planning application reference 138805/FO/2023.

A previous Energy Strategy Report was prepared by Applied Energy in March 2024 relating to the scheme which was considered by the City Council’s Planning Committee at its meeting of 30th May 2024. This report presents a new assessment and strategy for the scheme as now proposed. A description of the development, including of the changes to the design as proposed, are presented in an updated Design and Access Statement.

This Low and Zero Carbon Assessment will demonstrate that the proposed scheme will improve the sustainability and environmental performance of the built environment by increasing energy efficiency, reducing CO₂ emissions, generating energy services efficiently and implementing building integrated Low or Zero Carbon (LZC) technology when compared to a notional equivalent scheme.

The calculations and results contained within this document are based on the information available at the time of planning and therefore may be subject to change following detailed design stage.

Site Description and Location

Partial demolition of the former Hotspur Press Complex (Medlock Mill) and redevelopment of the site to provide Purpose Built Student Accommodation (Sui Generis Use Class) above ground floor commercial or community uses (Use Classes F(e), F2(a)(b) and E(b)), within a part 4/5-storey and part 35+ storey building plus roof parapet level above basement level, associated ancillary internal and external amenity space, public realm (including a new public square), hard and soft landscaping and associated highway works.

The Site is bounded to the north by a railway line which runs into Manchester Oxford Road Railway Station, to the east by Cambridge Street and to the south and west by the River Medlock. Reference should be made to Figure 4 and 5 for a map of the proposed development site and surrounding area.

Overview

The Low and Zero Carbon Assessment will take account of guidance given in the national, regional and local policies including and Manchester City Council's planning documents.

This will include key policies from the Core Strategy such as

- En 4 Reducing CO₂ Emissions by Enabling Low and Zero Carbon Development
- Policy EN 5 Strategic Areas for low and zero carbon decentralised energy infrastructure
- Policy EN 6 Target Framework for CO₂ reductions from low or zero carbon energy supplies

In accordance with Table 12.2 of the Core Strategy, the development will look to acheive a 10% reduction in emissions against Part L 2010.

BREEAM

This Low and Zero Carbon Assessment will also demonstrate how the target BREEAM level of EXCELLENT could be achieved.

Minimising Energy Demand	Decentralised Energy	Low/Zero Carbon Technologies	Carbon Savings
A fabric first approach has been taken with regards to the building and a number of passive and active measures have been targeted. High performance fabric has been used along with careful analysis of the glazing dimensions and specification to minimise heat gains/losses. A low air permeability has been targeted along with high efficiency LED lighting and ventilation.	Investigations have been undertaken to establish the scope for connection to existing or future district heating schemes. Allowance will be made for future connection to a district scheme should it become available	Various low and zero carbon technologies have been considered to attempt to achieve the aspiration for net zero carbon. The introduction of Air Source Heat Pumps (ASHP) for space heating and space cooling of the amenity spaces and the use of ASHP's for generation of hot water are the measures that are proposed to be introduced.	The proposed development is estimated to achieve savings of 5.56 tonnes of CO₂ per annum equating to a percentage reduction of 8% when compared to Building Regulations 2021. All modelling has been undertaken in line with the current 2021 building regulations which is estimated to be a significant improvement on the 2013 building regulations and therefore the scheme acheives savings in excess of the current planning policy.

	Tonnes of CO ₂ Per Annum	Reduction in Tonnes of CO ₂ Per Annum	Percentage Reduction*
BASELINE(Building Regs 2021)	71.68	N/A	N/A
PROPOSED HOTSPUR PRESS DEVELOPMENT	65.98	5.70	8%

* Reduction against 2021 Building Regulations

Table 2: Energy Hierarchy and Targets

1.0 INTRODUCTION

1.1 Background

Applied Energy have been commissioned by NOT FOUND to prepare a Low and Zero Carbon Assessment to accompany the planning submission for the proposed development. This Low And Zero Carbon Assessment identifies how the proposed works address the energy related policies of Manchester City Council.

Options have been reviewed for reducing CO₂ emissions through energy efficiency measures, heating, cooling, domestic hot water and renewable energy technologies. The local environment and proposed site have been considered throughout.

1.2 Site Description and Proposed Development

The existing use of the site known as Medlock Mill is best considered as an illustrative component of the development of the textile industry in Manchester, and its association with some notable industrialist and figures who were influential in shaping the city. The site is now currently vacant having been last used in 2014 when the previous tenants moved to new occupation or ceased trading.

The proposed development is: Partial demolition of the former Hotspur Press Complex (Medlock Mill) and redevelopment of the site to provide Purpose Built Student Accommodation (Sui Generis Use Class) and Co-living uses (Sui Generis use class) above ground floor commercial or community uses (Use Classes F(e), F2 (a)(b) and E(b)), within a part 4/5-storey and part 35-storey building plus roof parapet level above basement level, associated ancillary internal and external amenity space, public realm (including a new public square), hard and soft landscaping and associated highway works.

1.3 Site Location

The Site is bounded to the north by a railway line which runs into Manchester Oxford Road Railway Station, to the east by Cambridge Street and to the south and west by the River Medlock. Reference should be made to Figure 4 and 5 for a map of the proposed development site and surrounding area.



Figure 4: Site Location



Figure 5: Aerial View

2.0 POLICY & PLANNING CONTEXT

2.1 Introduction

This energy and sustainability assessment is based on National Planning Policy Framework and guidance taken from Manchester City Councils Core Strategy (July 2012) and Supplementary Planning Documentation and Planning Guidance (SPDPG - April 2007) and includes:

- An energy demand assessment for heating, cooling, electricity and baseline CO₂ emissions
- A review of the design of the building and the potential for energy efficiency design measures
- An assessment of the feasibility of low carbon heating and cooling technologies
- An assessment of LZC technologies including details on possible technology/plant sizes and resulting carbon savings
- A summary identifying the preferred energy strategy and the overall CO₂ emissions reductions achieved over the Building Regulations 2013 compliance baseline.
- The results of dynamic overheating modelling

2.2 National Planning Policy Framework (NPPF) December 2024

The NPPF sets out planning policies for England and how these are expected to be applied. In determining planning applications, local planning authorities should expect new developments to:

- 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
- Take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption.

2.3 Local Planning Policy

Manchester City Council (MCC) documentation:-

- Core Strategy (CS) (July, 2012)
- Supplementary Planning Documentation and Planning Guidance (SPDPG) (April 2007)

This strategy summarises the response of the proposed development's design to the policy framework of the MCC Adopted Core Strategy, and SPDPG documentation that together, form the city's policy landscape.

The CS documentation supersedes the SPDPG and therefore the CS documentation will take precedence.

From the Core Strategy, the key policies that this energy strategy will cover are:-

- En 4 Reducing CO₂ Emissions by Enabling Low and Zero Carbon Development
- Policy EN 5 Strategic Areas for low and zero carbon decentralised energy infrastructure
- Policy EN 6 Target Framework for CO₂ reductions from low or zero carbon energy supplies

In accordance with Table 12.2 of the Core Strategy, the development will look to achieve a 10% reduction in emissions against Part L 2010.

2.4 Places for Everyone

Places for Everyone (PfE) is a long-term plan of nine Greater Manchester districts (Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan) for jobs, new homes and sustainable growth. It has been prepared by the GMCA on behalf of the nine districts.

The plan will determine the kind of development that takes place across the city-region, maximising the use of brownfield land and urban spaces while protecting green belt land from the risk of unplanned development and selectively releasing some sites for housing and employment in key locations.

It will also ensure all new developments are sustainably integrated into Greater Manchester's transport network or supported by new infrastructure.

The key policy from PfE which relates to energy and sustainability is Policy JP-S2: Carbon and Energy. This policy aims to deliver a carbon neutral Greater Manchester no later than 2038. The main points from this policy for new developments are listed below:-

- Be net zero carbon from adoption – to regulated operational carbon emissions and from 2028 – to all emissions 'in construction'
- Developments should be consistent with the 2022 Part L Building Regulation
- Give priority to PV installations, where technically feasible
- Non-residential developments to achieve at least BREEAM excellent standard (or equivalent) for the 'Ene 01 – reduction of energy use and carbon emissions'



Figure 6: National Planning Policy Framework

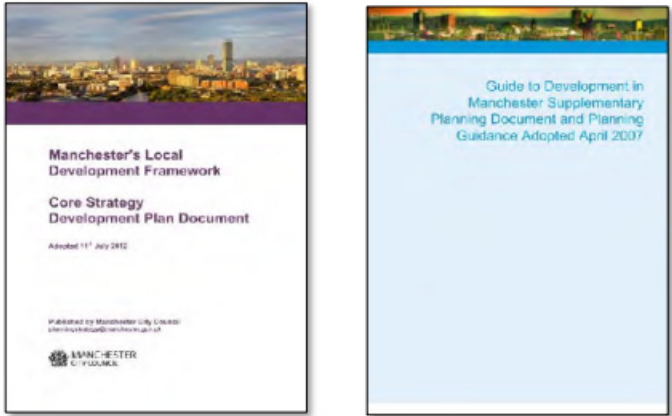


Figure 7: Manchester Key Policy Documents

3.0 SUSTAINABILITY SUMMARY

A sustainability assessment of the commerical areas of the development has been undertaken using the BREEAM (Building Research Establishment Environmental Assessment Method) 2018 New Construction Assessment tool.

BREEAM is an environmental standard that rates the sustainability of buildings and aims to minimize environmental impact by ensuring sustainability best practices are in place. It sets the standard for best practice in sustainable building design, construction and operation

An initial pre-assessment estimator has been worked up with the client and design team to give an indication on the likely score achievable at this early stage of the project.

By minimising energy and water usage, using sustainable materials, employing environmental management systems and limiting waste, a potential score of 74% could be achieved which is a rating of EXCELLENT.

An initial pre-assessment estimator can be found within the appendices of this document.

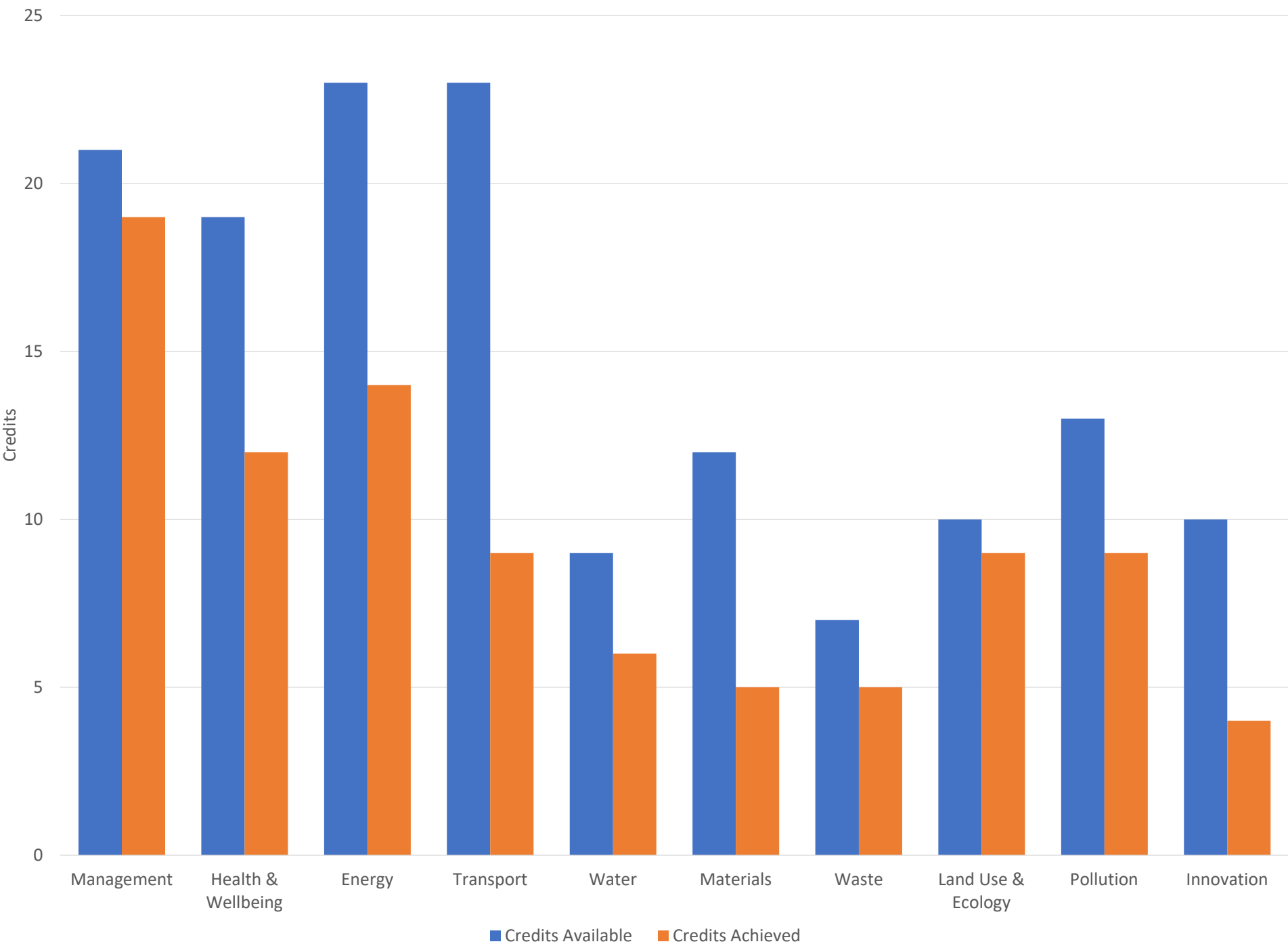


Figure 8: Performance by Environmental Category

3.1 Ene04 Low and zero carbon technologies

To achieve the criteria of Ene04 of BREEAM 2018, the development has considered the most appropriate recognised low and zero carbon (LZC) energy sources to use. A feasibility study has been undertaken by an Energy Specialist, David Heppenstall, as part of the Concept Design to establish the proposed strategy. The feasibility study quantified the reduced regulated carbon dioxide (CO₂-eq) emissions and captured the following:

- Energy generated from LZC energy source per year
- Carbon dioxide savings from LZC energy source per year
- Life cycle cost of the potential specification, accounting for payback
- Local planning criteria, including land use and noise
- Feasibility of exporting heat or electricity from the system
- Any available grants
- All technologies appropriate to the site and energy demand of the development
- Reasons for excluding other technologies
- If appropriate:
 - a. The building is connected to an existing local community CHP system or
 - b. the building is connected to an existing source of waste heat or power OR
 - c. a building or site CHP system is specified with the potential to export excess heat or power via a local community energy scheme or
 - d. a source of waste heat or power is specified with the potential to export excess heat or power via a local community energy scheme
- Energy storage.

The reduction in regulated carbon dioxide emissions has been demonstrated by comparing regulated carbon dioxide emissions with LZC technologies to the actual building-regulated emissions without LZCs. When the CO₂-eq savings are compared for different technologies, they have been estimated separately from the building energy model. The energy supply used for the base case is mains gas and grid electricity. The base case includes any passive design or free cooling measures adopted for the first two credits. The actual building energy demands have been calculated as for the passive design analysis.

3.2 Energy Specialist

This LZC study has been prepared at RIBA Stage 2 by David Heppenstall. David has worked in the industry for over 10 years, is a registered member of CIBSE, an accredited Low Carbon Consultant and Low Carbon Energy Assessor. David is not professionally connected to a single low and zero carbon technology or manufacturer.

4.0 BUILDING ENERGY MODELLING

4.1 Building Simulation

The proposed commercial areas (PBSA) have been thermally modelled using EDSL TAS dynamic simulation modelling software, version 9.5.6. This model has been produced to determine the annual energy demands and quantify the reductions in energy use and CO₂ emissions as a result of energy efficiency improvements.

This software contains the construction database which defines all the construction U-values for each of the building elements. Outputs from the simulation program include hourly kW demands arising from heating and cooling, small power, lighting and fan power.

The model was simulated using the CIBSE test reference year (TRY) weather data for Manchester .

The outputs from the software allow gas and electrical consumption and related CO₂ emissions to be calculated. The building's performance can therefore be measured for compliance against the targeted reduction in CO₂ emissions.

The floor area referenced within this Low and Zero Carbon Assessment is the modelled floor area of the building and excludes areas such as lift shafts, risers and voids etc. hence why there may be a discrepancy with architectural floor areas listed elsewhere in other documents.

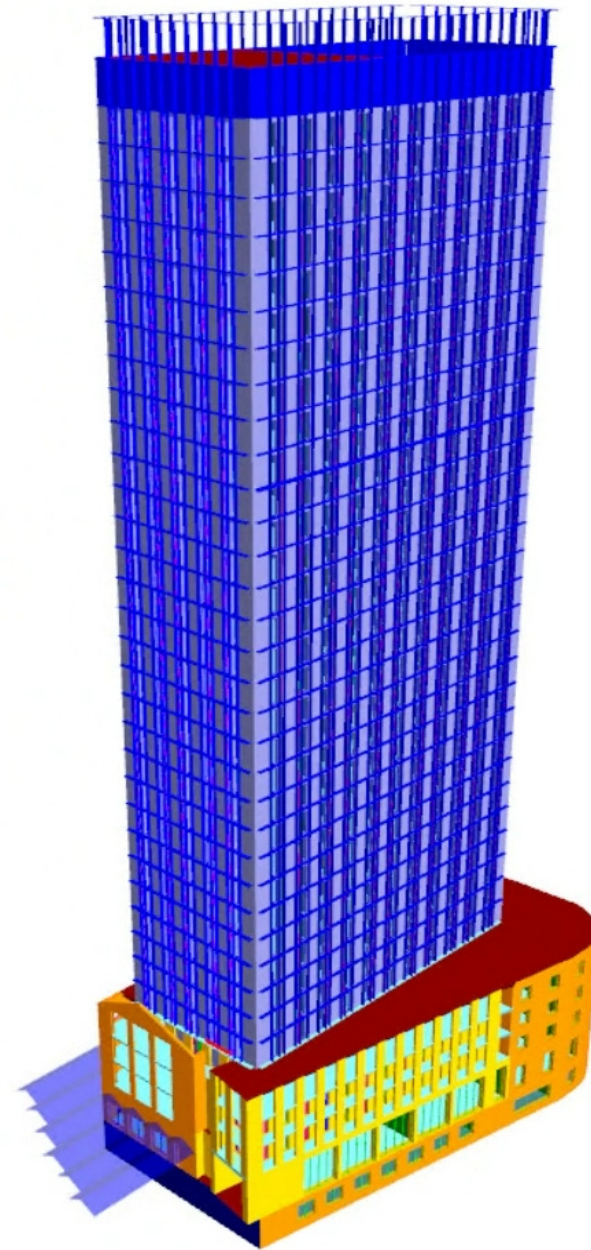


Figure 9: Dynamic Simulation Model

5.0 BASELINE(Building Regs 2021)

A Baseline carbon footprint, in line with Part L 2021 of the Building Regulations, has been created from which the compliance of the development can be established at each stage of the energy hierarchy.

To determine the CO₂ emissions baseline, the Target Emission Rate (TER) from the final proposed building specification has been used.

In some cases the TER may include low carbon or renewable energy generation. The carbon emissions reporting spreadsheet enables the CO₂ emission savings over the baseline to be accounted for at each stage of the energy hierarchy.

For commercial buildings, the TER should be multiplied by its floor area to provide the regulated CO₂ emissions.

The CO₂ emissions for each non-residential building are then summed to give the total regulated emissions for the development.

Modelled Floor Area (m²)	17,832
Baseline TER CO ₂ Emissions (tCO ₂ /yr)	71.68

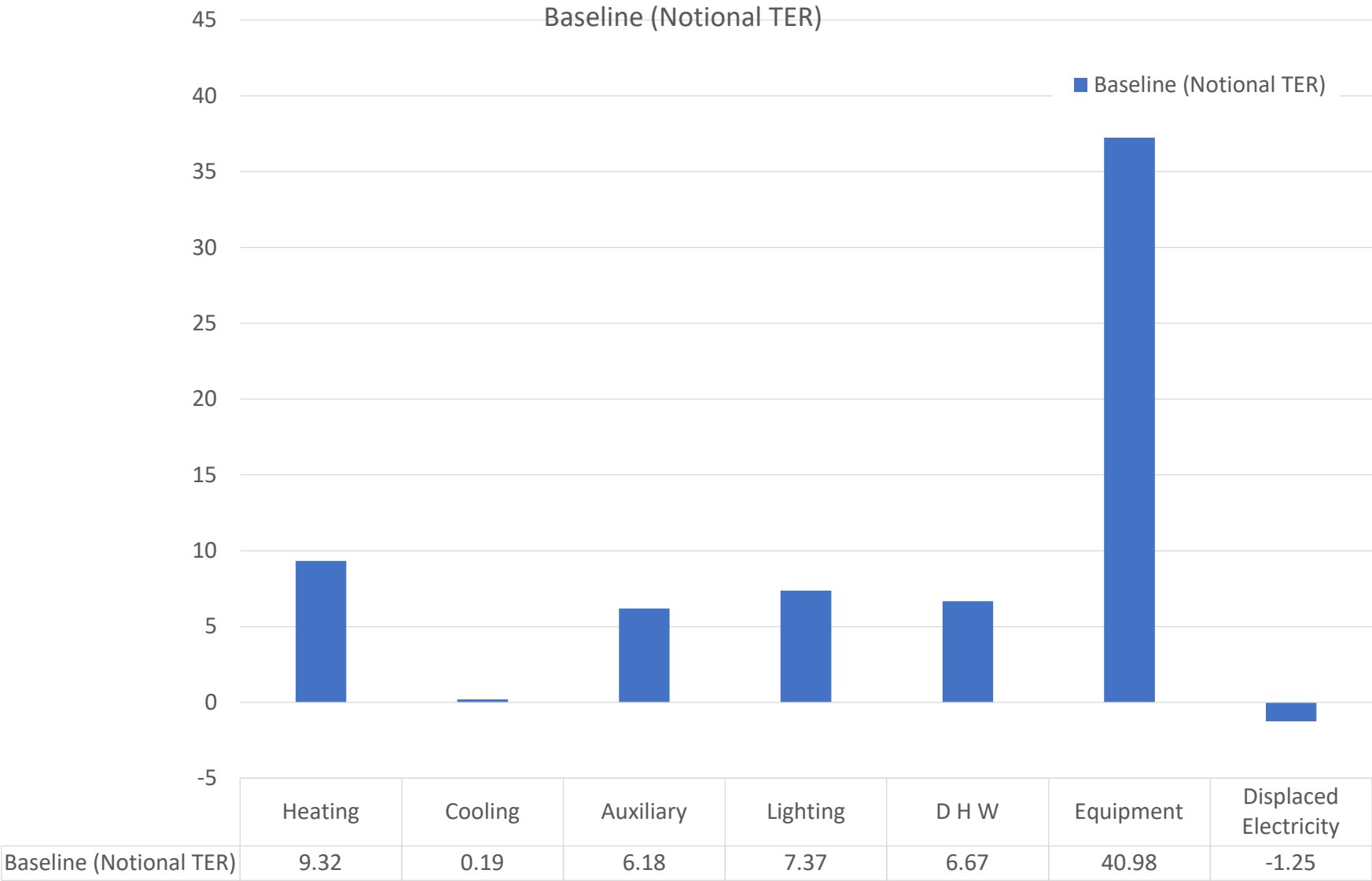


Figure 10: Energy Consumption of the Baseline Building

6.0 MINIMISING ENERGY DEMAND

6.1 Building Fabric Performance

The primary design objective is to reduce energy requirements through energy efficiency measures and good practice sustainable building services. By doing so, it results in an improvement in the building’s energy performance over and above the minimum levels stipulated within Part L of the Building Regulations.

The proposed development will be built with area weighted U-values exceeding those proposed in the latest Building Regulations Part L for the opaque building fabric and glazing elements.

6.2 Glazing

In order to minimise overheating, glazing will be enhanced to reduce heat gain to the main occupied areas of the building. It is therefore proposed that all glazing will be specified with an improved SHGC (solar heat gain coefficient) to minimise heat gain.

Given the required practicalities for a PBSA, a balance has to be achieved between Daylight/Sunlight needs and the prevention of Overheating to the rooms.

6.3 Air Tightness

New buildings are required to be pressure tested under Building Regulations Part L (2021) with the maximum permissible air leakage set at 8m³/(h.m²)@50Pa. It is proposed that all endeavours will be taken to improve the air leakage performance of the building to 1.7m³/(h.m²)@50Pa to further improve the energy efficiency of the building.

6.4 Efficient Lighting

It is proposed that LED lighting will be used with automatic and/or manual switching facilities. The use of photocells (daylight sensors) to control the external lighting will be provided. PIR (Passive Infrared) detectors to control lighting in low occupancy back of house areas and corridors will also be installed to assist in reducing energy wastage. The lighting design throughout the building will incorporate high efficacy lamps to ensure compliance with Building Regulations whilst providing the required lighting levels and ambience.

6.5 Ventilation

The studios and cluster flats will be provided with continuous supply and extract ventilation 24/7 with stale air being removed from bathroom and kitchen areas, and fresh air provided to the bedroom/ living spaces.

Within each cluster kitchen and studio, separate dedicated extract will be provided via a cooker hood extraction system. This will ensure smells and heat are removed directly from the kitchen.

Separate a dedicated extract systems will be provided for the bin stores.

Ventilation rates and specific fans powers will be in accordance with Building Regulations and CIBSE Guide B2. Heat recovery efficiencies will be greater than 70%.

In order to allow the removal of pollutants via a short-term higher rate ventilation method, openable windows will be provided to each habitable space. This will also have the benefit of allowing the occupants to open a window to enhance room ventilation during suitable external conditions.

A small retail unit is to be located at ground floor which will require supply and extract ventilation for general purposes as well as provision of a the café which will require a dedicated kitchen exhaust. Tenants will use their own demise at high level within the void for locating air handling plant.

Any air filtration and odour treatment will be the responsibility of the tenant, ensuring compliance with the clean air act.

6.6 Electric Heating

Electric heating is to be provided for space heating of habitable spaces, including back of house areas and select communal/ circulation areas that are, subject to high heat losses.

Electric heating devices convert electricity to heat within a building with an efficiency of 100%. Whilst this is less efficient than using heat pumps, panel heaters remove the need for vast lengths of pipework, valves, pumps, insulation and accessories which add to a buildings embodied carbon. It also removes unwanted heat gain to communal areas typical seen by running LTHW pipework for wet radiator systems.

Direct electric allows point of use operation, meaning that only the room which requires heat will operate. When a wet heating system is used, pumps still circulate water around the building 24/7 regardless of if heat is needed or not.

To maximise user flexibility, the following enhanced control features will be included within the design:

- Programmable time switch,
- Individual temperature control,
- Sophisticated 'touch' thermostats within each zone to maintain a pre-set background temperature but with the ability to provide boost heating for a predetermined period should the user need it.

6.7 Building Energy Management System

It is proposed that a Building Energy Management System (BEMS) is installed to monitor, control and sequence key mechanical and electrical plant together with sub metering of key systems in accordance with CIBSE TM39 to help operational staff exploit energy savings through effective management and control strategies.

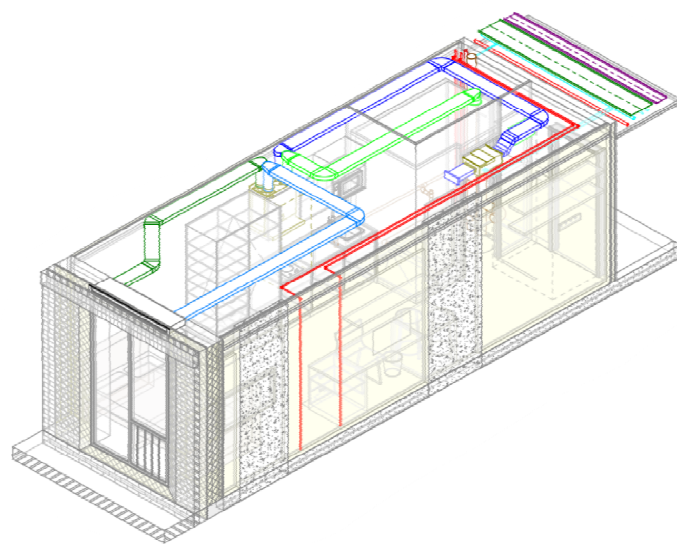


Figure 11: Typical Studio MVHR Layout



Figure 12: Sample panel heater controller

6.8 Summary of Proposed AD-L V2 Measures

This section summarises the above proposed measures and energy efficiency figures to be used in the modelling of the development.

To ensure the construction is to “best practice”, and hence energy efficient, it is proposed that the scheme will be designed against the following codes of practice as a minimum:

- Latest relevant British Standards and Codes of Practice
- Building Regulations
- Local Authority Regulations and Bye-Laws
- Electricity Supply Regulations
- BS7671 for Electrical Installations
- CIBSE Guides, Codes & Memorandum
- Water Supply Regulations

U-Values (W/m²K)	Limiting	Proposed
External Walls	0.26	0.15
Curtain Walling	N/A	0.90-0.93
Existing Retained Walls	0.30	0.30
Basement Floor	0.18	0.25
Exposed Floor	0.18	N/A
Flat Roof	0.18	0.12
Podium Roof	0.18	0.18
Doors Between Unit and Corridor	N/A	N/A
Personal Doors	1.80	1.50
High Usage Entrance Doors	1.80	1.50
Vehicle Entrance Doors	1.80	N/A
Air Permeability (m³/h/m² @ 50Pa)	8.00	1.70

Table 3: Proposed and Baseline 2013 Non-Domestic L2A Limiting Values

Windows	Window Glazing	Window Frame
U Value	0.50	2.20
g Value	0.33	N/A
Style	Double glazed low E	

Table 4: Proposed Glazing Values

HVAC Plant	Minimum	Proposed
Space Heating Efficiency	2.50	1 (bedrooms) and 4.5 Amenity Spaces
Space Heating Delivery Efficiency	N/A	100%
Ventilation Heat Recovery Efficiency	50%	>75%
Space Cooling Efficiency	5.00	5.88
Space Cooling Delivery Efficiency	N/A	1
Domestic Hot Water Efficiency	200%	360%
AHU with Heat Recovery Specific Fan Power (W/l/s)	1.90	2.20
Local Fan Specific Fan Power (W/l/s)	0.30	0.92
Energy Efficient Lighting Proposed	100% (all fittings LED)	

Table 5: Proposed Energy Saving Measures

7.0 OVERHEATING

Overheating in PBSA developments can be a problem if it is not dealt with at design stage.

The student accommodation areas have been modelling in accordance with Building Regulations Part O and CIBSE TM59.

Due to the enhanced performance of the building fabric, external heat gains can be reduced, however having less ‘leaky’ buildings, means that removal of internal heat gains becomes difficult without utilising complex ventilation systems or introducing air conditioning.

Solutions to minimise internal heat gains include utilising LED light sources, and utilising vertical distribution of hot water services to mitigate heat gains into internal circulation spaces.

In accordance with TM59 and ADO and to meet Policy EN 8, the risk of overheating must be controlled and ideally mitigated through the and remove the reliance on air conditioning systems. To achieve this, the following cooling hierarchy should be adhered too:

- 1 minimise internal heat generation through energy efficient design
- 2 reduce the amount of heat entering a building in summer through orientation, shading, albedo, fenestration, insulation and green roofs and walls
- 3 manage the heat within the building through exposed internal thermal mass and high ceilings
- 4 passive ventilation
- 5 mechanical ventilation
- 6 active cooling systems (ensuring they are the lowest carbon options).

The area weighted average (MJ/m²) and total (MJ/year) cooling demand for the actual and notional building have been provided for the commercial units and demonstrate that the actual building’s cooling demand is lower than the notional.

A separate detailed overheating assessment has been undertaken with the whole building modelled using dynamic simulation modelling in line with CIBSE TM52 in conjunction with CIBSE TM49.

As part of the overheating assessment, it was assumed that the PBSA areas of the building will have fully openable side vent panels adjacent the glazing, complete with full height louvre screening to provide protection. However due to acoustics issues surrounding the site, the windows have been modelled as open during the day but closed at night (between 11pm-7am), as required by Part O.

To combat this and the overheating risk this brings at night, the design team have looked into enhanced mechanical ventilation rates at night.

The results of the TM59 modelling demonstrate that the development mitigates the risk of overheating, when measured against DSY1 and therefore also meet the requirements of Approved Document O.



Figure 13: TM59



Figure 14: Approved Document O

8.0 DECENTRALISED ENERGY

The energy hierarchy details that the next step is that consideration should be given to the use of decentralised energy such as:

- Connection to Existing Heating or Cooling Networks
- Site-wide Energy Centre

8.1 Connection to Existing Heating or Cooling Networks

Applied Energy have contacted Manchester Energy Network and currently powers, Manchester Town Hall Extension & Central Library, Manchester Central Convention Centre, The Bridgewater Hall, Heron House and when completed will provide energy to the newly refurbished Manchester Town Hall

Whilst no specific date has been proposed for this extension. It has been assumed that the connection will be available at the appropriate time of the development's onward design and construction. As a redundancy option should the DHN not be operational at the time of construction, space has been allocated on the roof for ASHP for generation of hot water to serve the building.

8.2 Site Wide Energy Centre

The development will provide a site-wide heat network served by a single energy centre.

8.3 Site Wide Heating Network Accompanied by Renewables

Conventionally heating networks have utilised gas fired Combined Heat & Power Units for both the heating and domestic hot water provision of developments.

Given the associated poor NOx emissions as well as an industry wide push to utilise non-gas consuming plant, the domestic side of the development is proposed to be all electric.

Therefore, the site wide hot water provision is proposed to be met via the use of Air Source Heat Pumps (ASHPs).

There will be a roof mounted community ASHP energy centre with common distributing pipework to serve all flats and bedrooms.

This will then be branched to serve the domestic water requirements respectively. As these are classed as a Renewable Technology, the details of these systems are included in the next section of this document.

8.4 Future connection to a district network

Whilst no district scheme is currently planned, space and pipework allowance for future district heating interface plates has been included to allow for the future connection to assist in the decarbonisation of the masterplan network.

The schematic demonstrates the intent as appropriate for the stage of the project. The majority of the pipework on the schematic is the distribution pipework for the building which is required to be operational from handover. The heat network will connect in to this and pipework routes are given on the drawing.

The full plans for the whole building will be developed post concept design as appropriate to the stage.

8.5 Connection to district network

The schematic demonstrates the intent as appropriate for the stage of the project. The majority of the pipework on the schematic is the distribution pipework for the building which is required to be operational from handover. The heat network will connect in to this and pipework routes are given on the drawing.

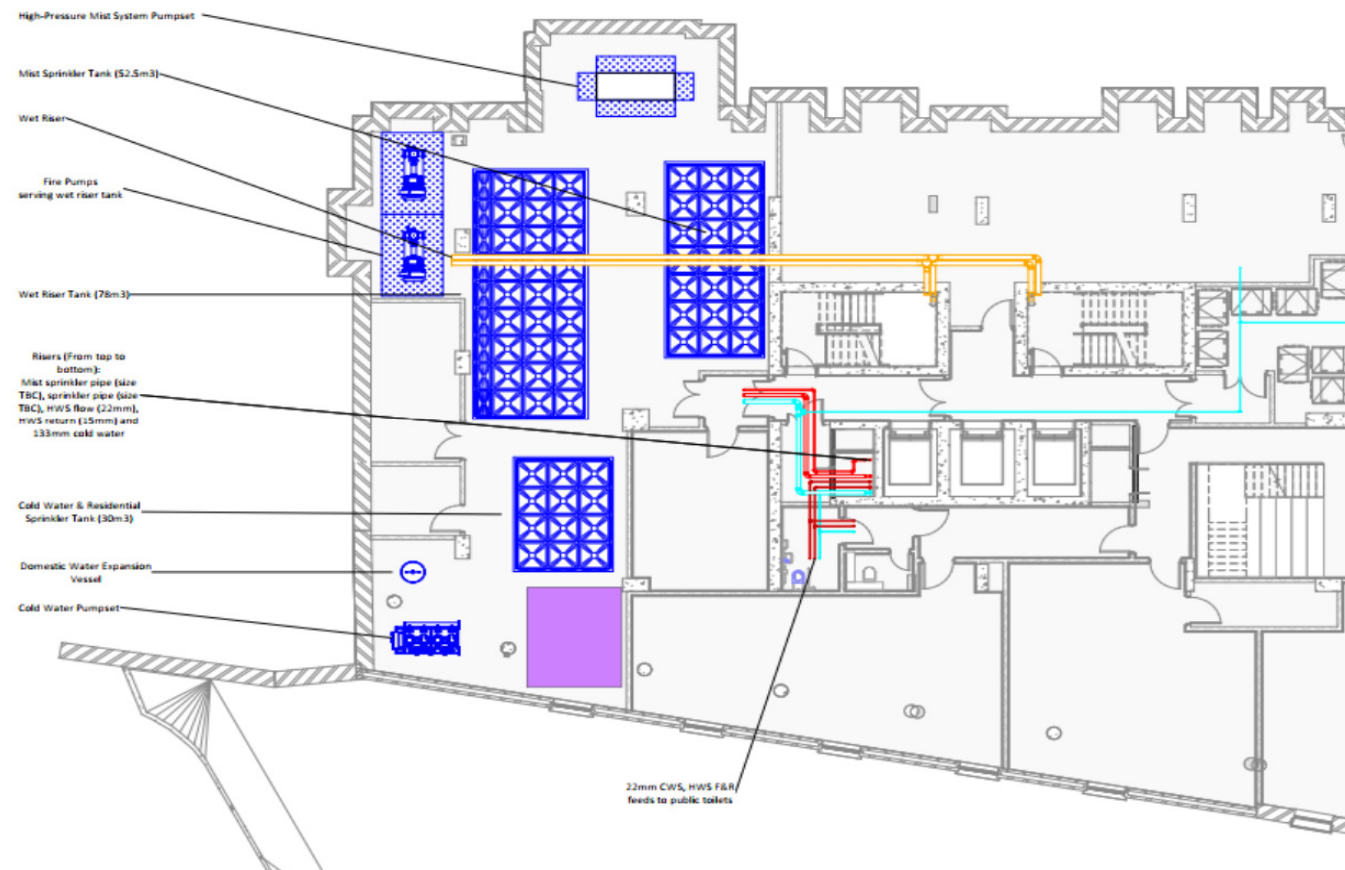


Figure 16: District Heating Plantroom

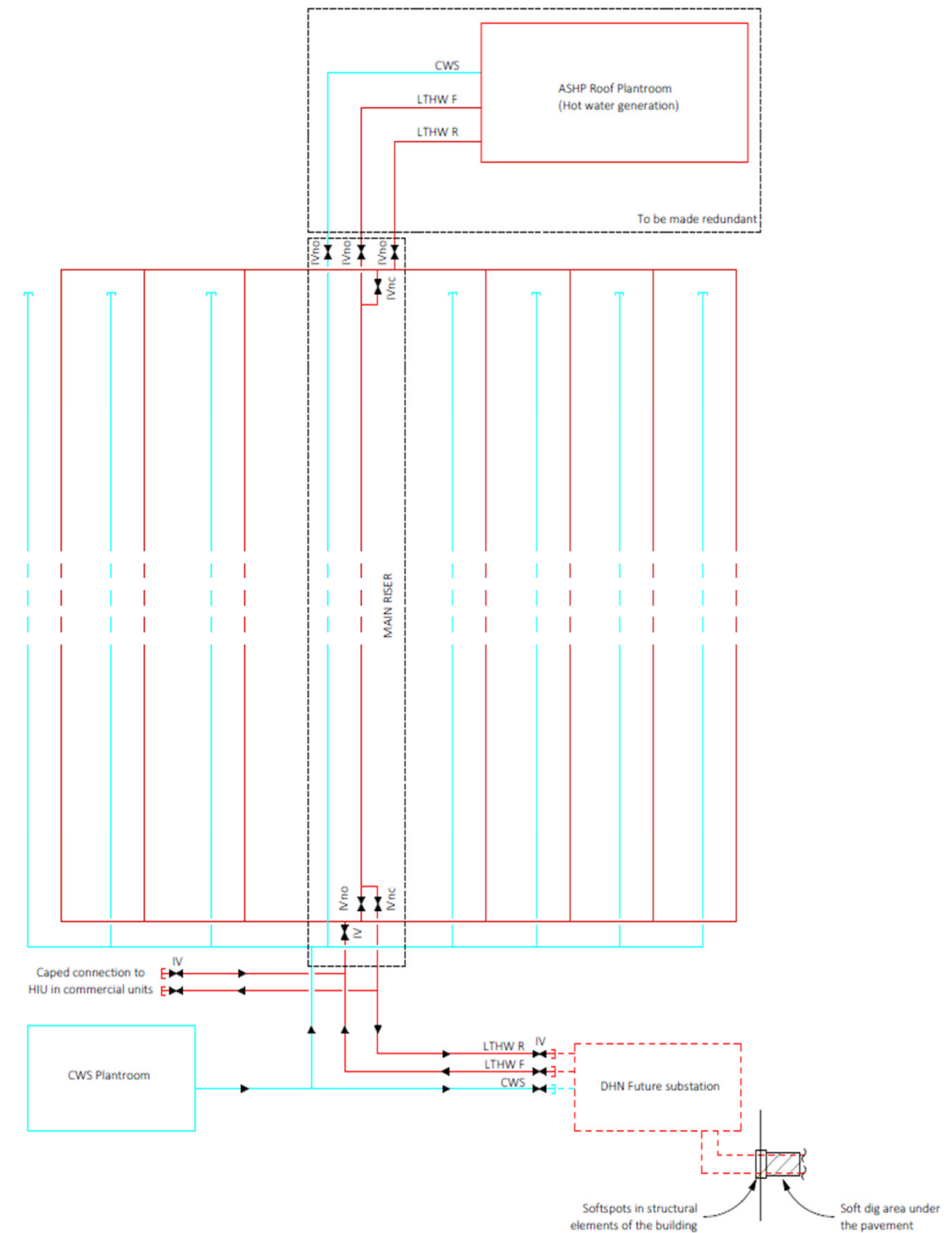


Figure 17: District Heating Schematic

9.0 LOW/ZERO CARBON TECHNOLOGIES

This section reviews the potential on-site Low or Zero Carbon (LZC) technologies available and assesses their viability for this development.

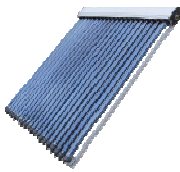
Technology		Comment	Verdict
	Solar PV	Solar PV has been considered for the site and given the clear roof space available at the top of the building, it has been deemed feasible to provide solar PV for the scheme.	✓
	Solar Thermal	The site has a high hot water demand profile and a large collector area would be required to achieve any reasonable emissions reduction which cannot be accommodated due to the limited roof space. The use of solar thermal would conflict with the proposed hot water generation from ASHP, reducing the efficiencies of both systems and impacting the potential carbon savings. Furthermore, given the presence and prioritisation of the District Heating Network it would conflict with this technology.	✗
	Ground Source Heat Pump	In order to provide the anticipated loads for the development a large number of bore holes would be required which this site cannot provide given its limited footprint and surrounding area. GSHP also have large capital cost and offer minimal carbon savings compared to air source heat pumps. Furthermore, given the presence and prioritisation of the District Heating Network it would conflict with this technology.	✗
	Wind	Difficult to obtain good wind regime in city centre locations given turbulence created by surrounding buildings and trees etc. Additional issues associated with wind turbines are stroboscopic light, topple distance and noise which can all be deemed detrimental to neighbours.	✗
	Biomass	Biomass introduces issues with air quality and have a large spatial requirement for plant and fuel storage. It requires a constant heat load to work effectively and efficiently as they are not designed to modulate or turn off and on quickly. This does not suit the usage pattern of the site.	✗
	Air to Water Heat Pumps (DHW)	Electrically driven air to water heat pumps provide an energy efficiency way to heat hot water which can be used to provide space heating via underfloor heating and DHW. With the update of the CO ₂ carbon emission factors in line with SAP 10, this technology becomes highly suited to this scheme.	✓
	Air Source Heat Pumps (Space Heating)	Electric driven air source heat pumps provide an energy efficient way to heat and cool the building. VRF systems allow simultaneous heating and cooling of different spaces and the inclusion of heat recovery improves the energy efficiency and carbon reductions even further. It is therefore proposed that ASHP are installed for the scheme to provide the amenity area space heating and cooling.	✓

Table 6: Renewable Energy Technologies

9.1 ASHP Efficiencies and Heat Loss

Energy efficiency improvements are proposed through the use of Air Source Heat Pumps (ASHP) for space heating and space cooling of the amenity spaces.

ASHPs are widely considered a renewable energy source as they extract thermal energy from the surrounding air which can be used to provide hot water efficiently.

For the purposes of planning, space allowance and modelling has been based upon using the Samsung Air VRF Air Source Heat Pumps.

The ASHP will generate hot water at 75°C which we will delivered at 60°C and piped to allow direct flow out to the hot water network

The design will allow hot water return to be blended with boosted mains cold water to maintain the effectiveness of the ASHP by ensuring large deltas in temperature are acheived. No plates will be present between the main plant and the HIU thus ensuring minimal losses.

Based on teh ambient external temperature and the design of the system, it is expected that the ASHP for the hot water system will achieve COP's of above 3.6.

The heat losses will be calculated for the system at the detailed design stage. However, the assumptions at time of planning are that the building services specification will require all pipework, valves and fittings to be insulated over and above BS 5422: 2009 (Max. heat loss 11.07 W/m) e.g. Kingspan Kooltherm® ECA specification pipe insulation with insulated pipe support inserts to achieve heat losses <11W/m.

9.2 ASHP Grants

There are no grants available for air to air heat pump installations and they do not qualify for the renewable heat incentive (RHI). However, select ASHP equipment may be eligible for the Enhanced Capital Allowance (ECA) scheme which means a business can benefit from tax breaks when investing in eligible energy saving equipment. The first year allowances let businesses set 100% of the cost of the assets against taxable profits in a single tax year.

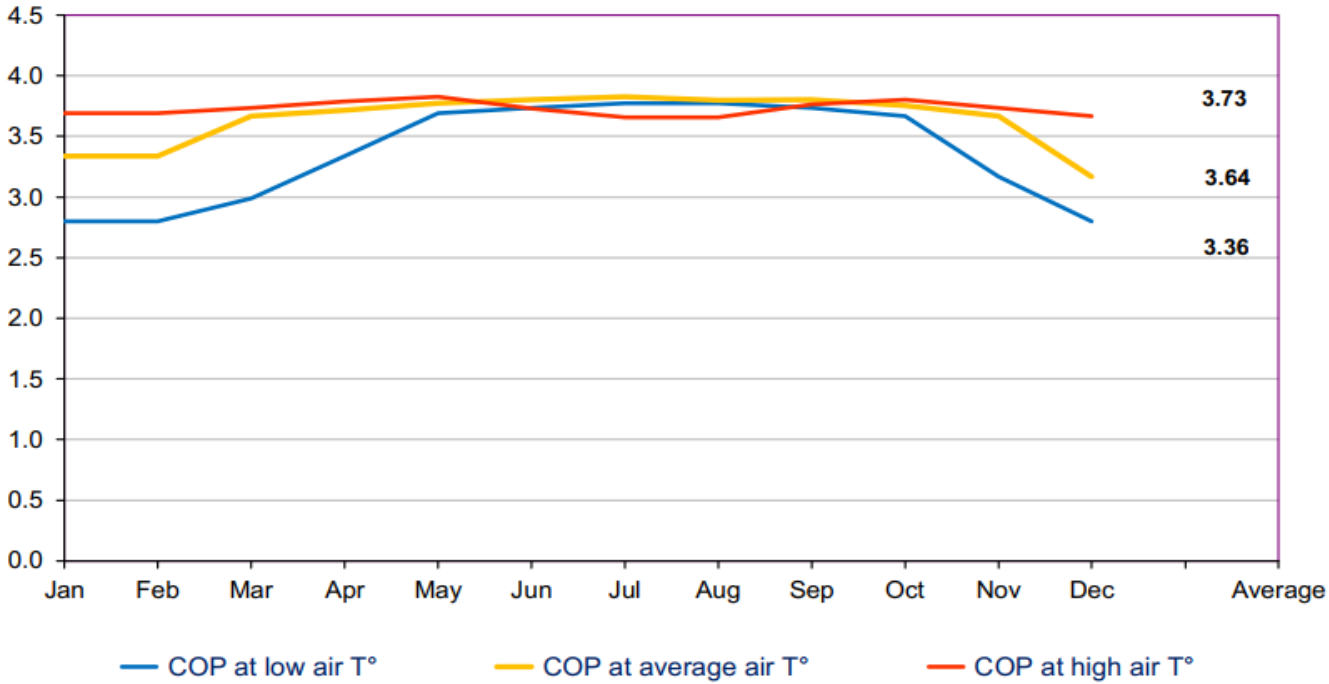


Figure 18: ASHP average COP performance

9.3 Photovoltaic Array

It is proposed that solar photovoltaic (PV) panels will be installed on the main roof of the building, above the roof plant enclosure to generate electricity and offset the energy that would have been taken from the grid.

The number of PVs has been maximised and balanced against the requirement for plant and amenity space, access for the PV and access for façade maintenance.

Indicative layouts have been provided for the PV panels however this is subject to final agreement and approval with the planning authority as part of the overall aesthetics of the scheme.

High efficiency PV panels are able to achieve generation efficiencies of 425Wp but a reduce value of 425Wp has been used for the calculations to allow for any PV angle pitch, minor overshadowing, etc. Detailed calculations will be undertaken as part of the next stage of design to confirm exact values.

Data has been entered to the European Commission Photovoltaic Geographical Information System to estimate the amount of energy that is likely to be delivered. The results are 32,671 kWh/year.

The proposals for use of additional Building Integrated Photovoltaic (BIPV) panels to the facades of the building have been assessed but disallowed with regards to Fire Engineering as photovoltaics contain an interlayer which is deemed combustible and therefore not in line with new facade fire regulations.

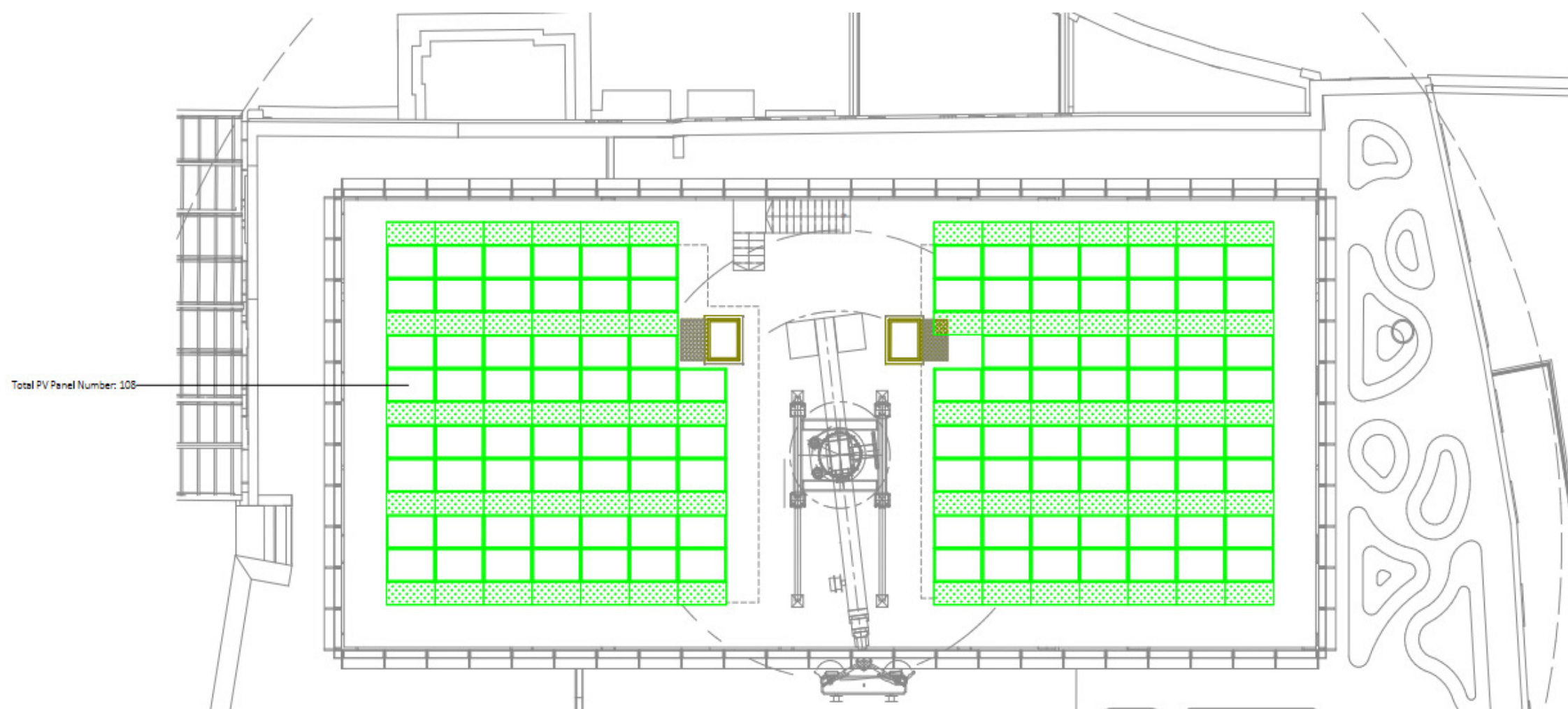


Figure 19: Indicative PV Roof Layout

9.4 PV Grants

As of September 2019, the Smart Export Guarantee has been brought in by the department for Business, Energy and Industrial Strategy (BEIS) as a replacement for the Feed in Tariff (FiT) as a financial incentive scheme for solar PV and other technologies

The Smart Export Guarantee (SEG) is a financial incentive scheme for owners of small scale renewable generation technologies in the UK including solar PV systems and is available for technologies up to a capacity of 5MW.

Under the SEG, energy suppliers in the UK with over 150,000 customers are legally obliged to pay their customers for each unit of electricity generated by their solar panels (as long as the system is 5MW or below). Suppliers with fewer than 150,000 customers can choose to take part in the scheme but are not obliged to.

9.5 PV Life Cycle Costing and ROI

The table below gives the payback and return on investment for the proposed solar PV system:

System Info	Unit	Amount
Type of roof	-	Flat Roof
System cost	£/kW	5,000.00
kWp of system	kWp	45.90
Cost of system	£	229,500.00
Size of roof needed	m2	313.00

System output	Unit	Amount
Pitch of modules relative to horizontal	°	10.00
Orientation (South = 0)	°	0
Annual output of system	kWh	32,671

Export	Unit	Amount
Export tariff	p/kWh	5.00
Percentage exported	%	1%
Exported	kWh	326.71
Annual income from Smart Export Guarantee	£	16.34

Avoided import	Unit	Amount
Unit cost day rate	p/kWh	25.00
Percentage avoided	%	99%
Avoided import	kWh	32,344.08
Avoided import cost	£	8,086.02

Total annual savings and income	Unit	Amount
Savings / income	£	8,102.36
Annual CO ₂ emission savings	kgCO ₂	4,535
Payback period	Years	28

Table 7: Payback calculations for PVs

9.6 Calculations

Modelling of the building has been completed to include the measures detailed earlier within this report, and the results here show the carbon savings achieved by the proposals.

The figures demonstrates the resultant energy consumption based on the demand reduction, energy efficient measures and renewables:

Baseline TER CO ₂ Emissions (tCO ₂ /yr)	71.68
LZC Technologies BER CO ₂ Emissions (tCO ₂ /yr)	65.98
CO ₂ Saved from Baseline	5.70
Percentage Reduction from Baseline	8%

Table 9: Predicted Regulated CO₂ Emissions Saved Baseline to LZC Technologies

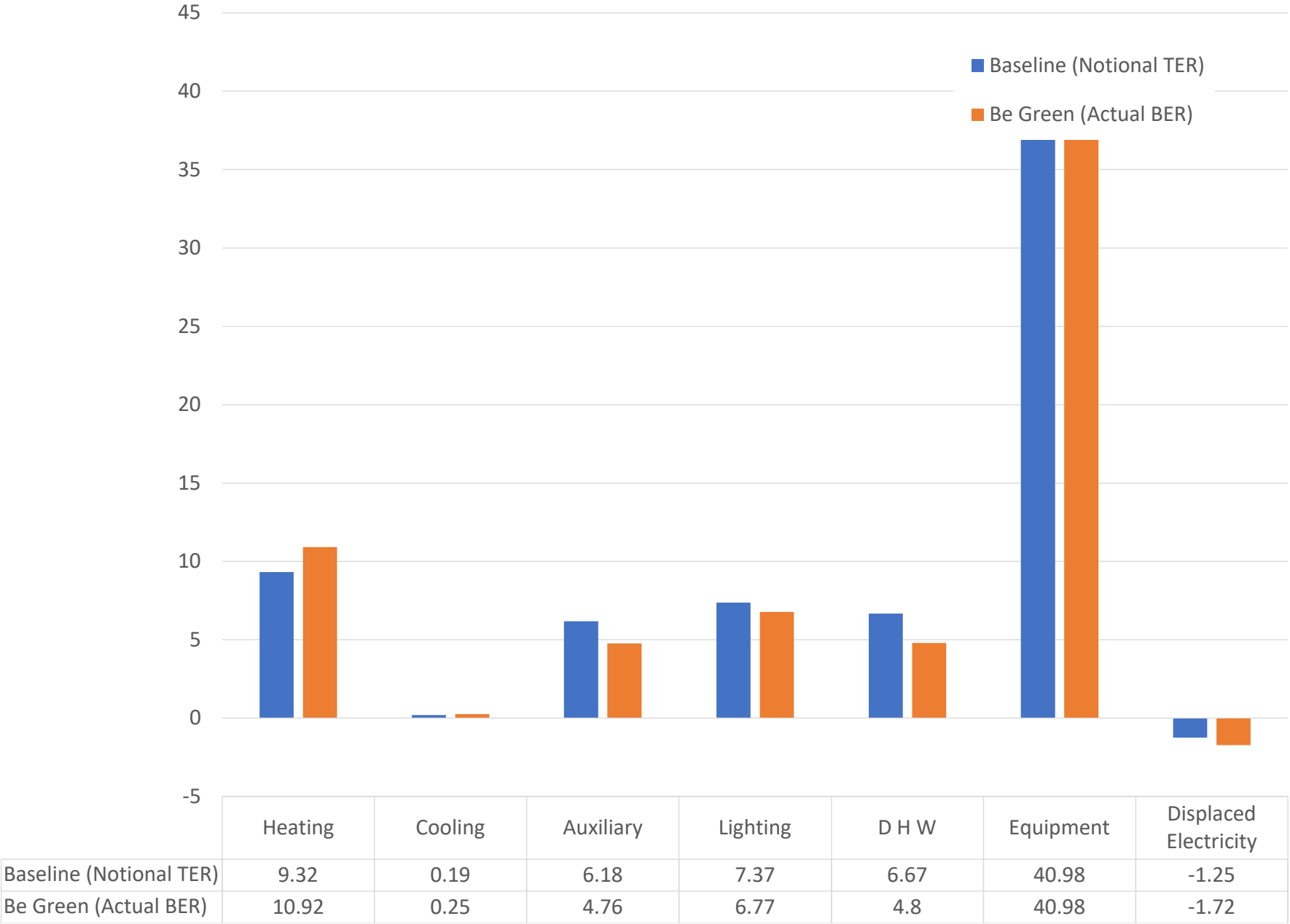


Figure 20: Predicted Energy Consumption

9.7 Final Sitewide Calculations

The information above has been summarised below and used to calculate the overall percentage reduction:

This demonstrates that complete development achieves the required improvement at the three stages

Modelled Floor Area (m²)	17,832
--------------------------	--------

Sitewide	Tonnes of CO ₂ Per Annum	Reduction in Tonnes of CO ₂ Per Annum	Percentage Reduction
BASELINE(Building Regs 2021)	71.68	N/A	N/A
PROPOSED HOTSPUR PRESS DEVELOPMENT	65.98	5.70	8%

Table 10: Predicted Regulated CO₂ Emissions - Sitewide

10.0 CONCLUSIONS & RECOMMENDATIONS

Many conclusions and recommendations have been made in the previous sections of this Low and Zero Carbon Assessment. In this section the main conclusions and recommendations are summarised. The investigation of CO₂ emissions savings involved the analysis and simulation of:

- Energy Efficiency Measures
- Space Heating to amenity spaces and Hot water via ASHPs

At the Minimising Energy Demand stage, it is proposed that the following energy efficiency measures are provided to reduce energy demand for the development:

- Improved fabric and glazing efficiencies
- Energy efficient LED lighting
- Heat recovery ventilation
- Improved services distribution
- Inclusion of variable speed drives on fans
- Water saving technologies
- Inclusion of variable speed drives on pumps

Given the presence of a district heat network, 'Decentralised Energy' contributions were possible and, based on the carbon factor information received, carbon savings were made in the Be Clean stage of the assessment.

At the Low/Zero Carbon Technologies stage, the inclusion of Air Source Heat Pumps (ASHP) to generate heating and hot water was deemed a suitable technology.

Savings of just under 5.56 tonne of CO₂ per year were achieved equating to a percentage reduction of 8% when compared to Building Regulations 2021.

All modelling has been undertaken in line with the current 2021 building regulations which is estimated to be a significant improvement on the 2013 building regulations.

Given the tendency for purpose-built student accommodation to suffer from significant overheating, focus has been made on minimising g-values and hence our solar gain.

The net result of this is that the building benefits less from solar gain in Winter months but sector experience shows that actual heating demand is less than the results of dynamic simulation modelling for part L.

However regardless of this, the scheme surpasses the Part L 2021 target emissions rate, achieving a XX% reduction in carbon emissions.

These results if compared against the policy requirements of Building Regulations 2010 would be far greater than the 10% currently achieved.

Appendix A: BREEAM Pre-Assessment

See separate BREEAM Pre-Assessment pdf for appendices content.

Assessment report: Pre Planning

Stage: Design (Interim)

Site name: Hotspur Press

Client name:

Date: 27/11/2024

Assessment ref: TBA

Assessment references

Registration number:	TBA	Date created:	27/11/2024
Created by:	Stuart Daniels		

Site details

Site name:	Hotspur Press
Address:	2 Gloucester Street
Town:	Manchester
County:	
Postcode:	M1 5QR
Country:	United Kingdom
Currency:	

Certificate details

The certificate will have the name of the architect (if entered above) and the name of the developer (from above).

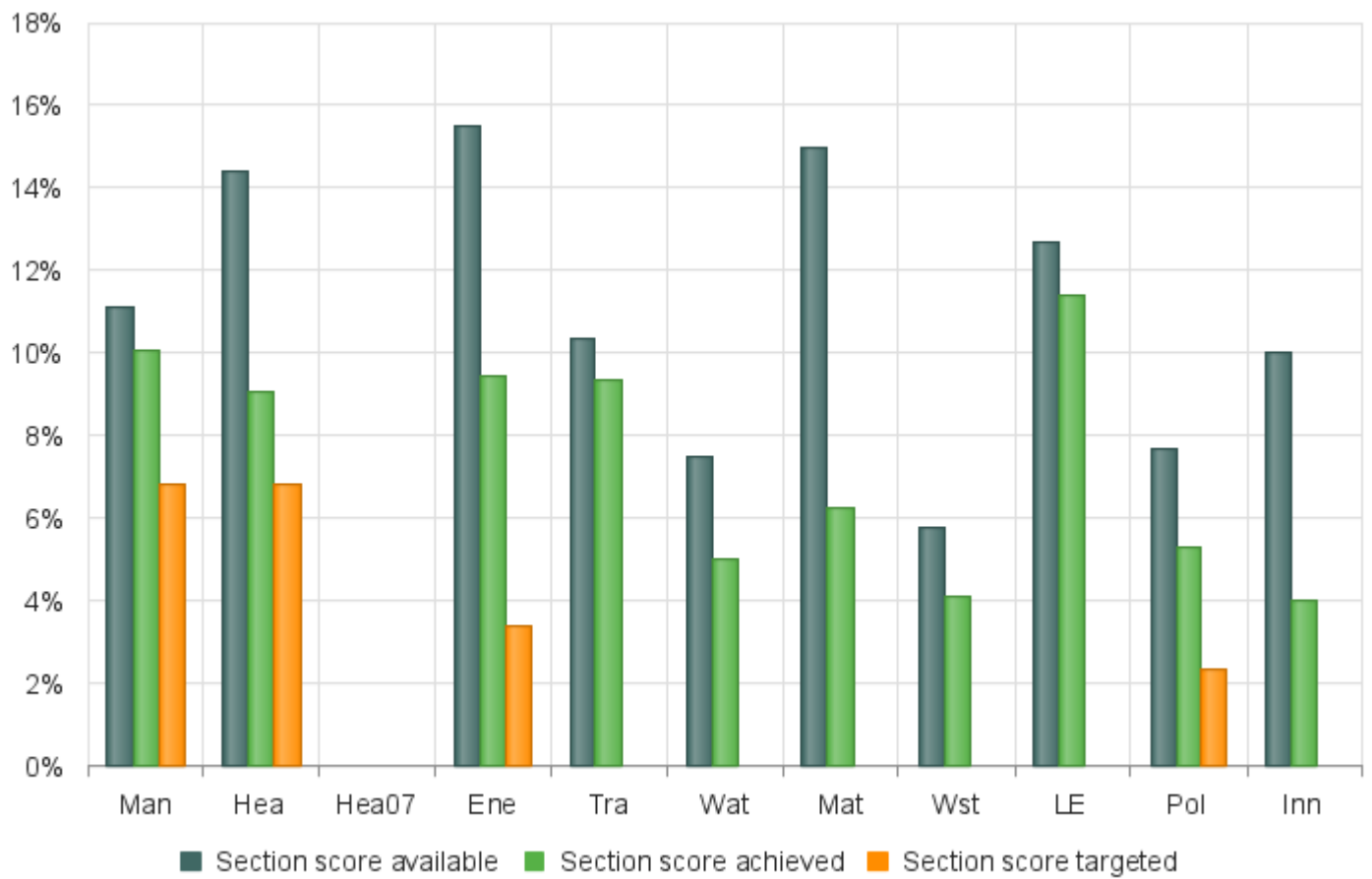
Any other names to appear on the certificate are listed below:

Name	Label
Hodders and Partners	Architect
Civic Engineers	Structural Engineers
Avis Young	Project Manager

BREEAM Rating

	Credits available	Credits achieved	Credits targeted	% Credits achieved	Weighting	Category score	Target score
Man	21.0	19.0	13.0	90.48%	11.11%	10.05%	6.87%
Hea	19.0	12.0	9.0	63.16%	14.40%	9.09%	6.82%
Hea07	1.0	0.0	0.0	0.00%	0.00%	0.00%	0.00%
Ene	23.0	14.0	5.0	60.87%	15.55%	9.46%	3.38%
Tra	10.0	9.0	0.0	90.00%	10.37%	9.33%	0.00%
Wat	9.0	6.0	0.0	66.67%	7.49%	4.99%	0.00%
Mat	12.0	5.0	0.0	41.67%	14.97%	6.23%	0.00%
Wst	7.0	5.0	0.0	71.43%	5.76%	4.11%	0.00%
LE	10.0	9.0	0.0	90.00%	12.67%	11.40%	0.00%
Pol	13.0	9.0	4.0	69.23%	7.68%	5.31%	2.36%
Inn	10.0	4.0	0.0	40.00%	10.00%	4.00%	0.00%
Total	135.0	92.0	31.0	68.15%	-	74.00%	19.44%
Rating	-	-	-	-	-	★★★★☆ Excellent	Unclass

Performance by environmental category



Issue scores

Please Note: X means the exemplary credit for the relevant issue

Management

Man 01 Project brief and design

2 / 4

Man 02 Life cycle cost and service life planning

4 / 4

Man 03 Responsible construction practices

6 / 6 X: 0 / 1

Man 04 Commissioning and handover

4 / 4

Man 05 Aftercare

3 / 3 X: 0 / 1

Health and Wellbeing

Hea 01 Visual Comfort

2 / 4

Hea 02 Indoor Air Quality

3 / 5 X: 1 / 2

Hea 03 Safe containment in laboratories

N/A

Hea 04 Thermal comfort

3 / 3

Hea 05 Acoustic Performance

1 / 4

Hea 06 Accessibility

2 / 2

Hea 07 Hazards

0 / 1

Hea 08 Private space

N/A

Hea 09 Water quality

1 / 1

Energy

Ene 01 Reduction of energy use and carbon emissions

5 / 13 X: 2 / 5

Ene 02 Energy Monitoring

1 / 1

Ene 03 External Lighting

1 / 1

Ene 04 Low carbon design

2 / 3

Ene 05 Energy Efficient Cold Storage

N/A

Ene 06 Energy efficient transportation systems

3 / 3

Ene 07 Energy Efficient Laboratory Systems

N/A

Ene 08 Energy Efficient Equipment

2 / 2

Ene 09 Drying Space

N/A

Ene 10 Flexible demand side response

0 / 0 X: 0 / 1

Transport

Tra 01 Public Transport Accessibility

2 / 3

Tra 02 Proximity to Amenities

2 / 2

Tra 03 Alternative modes of transport

2 / 2 X: 1 / 1

Tra 04 Maximum Car Parking Capacity

2 / 2

Tra 05 Travel Plan

1 / 1

Tra 06 Home office

N/A

Water

Wat 01 Water Consumption

2 / 5 X: 0 / 1

Wat 02 Water Monitoring

1 / 1

Wat 03 Water Leak
Detection

2 / 2

Wat 04 Water Efficient
Equipment

1 / 1

Materials

Mat 01 Life Cycle Impacts

1 / 6 X: 0 / 1

Mat 02 Hard Landscaping
and Boundary Protection

N/A

Mat 03 Responsible
Sourcing of materials

2 / 4 X: 0 / 1

Mat 04 Insulation

N/A

Mat 05 Designing for
durability and resilience

1 / 1

Mat 06 Material efficiency

1 / 1

Waste

Wst 01 Construction Waste
Management

2 / 3 X: 0 / 1

Wst 02 Recycled Aggregates

0 / 1 X: 0 / 1

Wst 03 Operational Waste

1 / 1

Wst 04 Speculative Floor
and Ceiling Finishes

N/A

Wst 05 Adaptation to climate
change

1 / 1 X: 0 / 1

Wst 06 Functional
adaptability

1 / 1

Land Use and Ecology

LE 01 Site Selection

2 / 3

LE 02 Ecological Value of Site and Protection of Ecological Features

2 / 2

LE 03 Minimising impact on existing site ecology

N/A

LE 04 Enhancing Site Ecology

3 / 3

LE 05 Long Term Impact on Biodiversity

2 / 2

Pollution

Pol 01 Impact of Refrigerants

1 / 4

Pol 02 NOx Emissions

2 / 2

Pol 03 Surface Water Run off

4 / 5

Pol 04 Reduction of Night Time Light Pollution

1 / 1

Pol 05 Noise Attenuation

1 / 1

Pol 07 Local air quality

N/A

Innovation

Inn 01 Innovation

0 / 0 X: 0 / 10

Initial details

2 Gloucester Street

Building type (main description) : Residential institutions - long term stay

Building type (sub-group) : Long term stay - Residential college or school

Assessment stage : Design (interim)

Building Net internal floor area : 17999

Building Gross internal floor area : 19888

Are there any risks associated with natural hazards (other than flooding) for the assessed development? : Yes

Climatic zone : C. Warm Temperate

Technical manual issue number : SD250 Issue 0.0

Project scope : Fully Fitted

Is the occupier known? : Yes

Does legislation prohibit the use of ozone depleting substances? : No

Is there any potential for a conflict of interest with this Assessment? : No

Building services - heating system type : Other type of heating system

Building services - cooling system type : Air-conditioning

Does water heating contribute less than 10% of the buildings total energy consumption? : No

Is the building designed to be untreated? : No

Is external lighting specified within the construction zone? : Yes

Commercial/industrial refrigeration and storage systems : No

Building user transportation systems (lifts and/or escalators) : Yes

Are there laboratories present and if so what % of total building area do they represent? : No
laboratories present

Laboratory containment level : No laboratory

Fume cupboard(s) and/or other containment devices : No

Water uses present (e.g. vehicle wash system, irrigation) : Yes

Category assessment

Management (Man)

Man 01 Project brief and design

To recognise and encourage an integrated design process that optimises building performance.

Assessment Criteria

Stakeholder consultation (project delivery) :	Yes
Stakeholder consultation (third party) :	Yes
Sustainability champion (design) :	No

Credits awarded : 2

Man 02 Life cycle cost and service life planning

To deliver whole life value from investment and promote economic sustainability by recognising and encouraging the use and sharing of life cycle costing and service life planning to improve design, specification and through-life maintenance and operation.

Assessment Criteria

Elemental life cycle cost (LCC) :	Yes
Component level LCC plan :	Yes
Capital cost reporting :	Yes
Capital cost of the project :	

Credits awarded : 4

Man 03 Responsible construction practices

To recognise and encourage construction-sites which are managed in an environmentally and socially considerate, responsible and accountable manner.

Assessment Criteria

Pre-requisite: Is all site timber used in the project 'legally harvested and traded timber'? :	Yes
Pre-requisite: Has all national health and safety legislation and regulation	Yes

for construction sites been considered and implemented throughout all phases? :	Yes
Environmental Management :	
Construction stage sustainability champion :	Yes
Considerate construction :	2
Monitoring of construction site impact (criterion 10) :	Yes
Utility consumption :	Yes
Transport of construction material and waste :	Yes
Exemplary level criteria :	No

Credits awarded : 6

Man 04 Commissioning and handover

To encourage a properly planned handover and commissioning process that reflects the needs of the building occupants.

Assessment Criteria

Commissioning and testing schedule and responsibilities :	Yes
Commissioning building services :	Yes
Testing and inspecting building fabric :	Yes
Handover - Has a Building User Guide been developed prior to handover? :	Yes
Handover - Has a training schedule been prepared for building occupants/managers? :	Yes

Credits awarded : 4

Man 05 Aftercare

To provide post-handover aftercare to the building owner/occupants during the first year of occupation to ensure the building operates and adapts, where relevant, in accordance with the design intent and operational demands.

Assessment Criteria

Aftercare support :	Yes
Seasonal commissioning :	Yes

Post occupancy evaluation :

Yes

Exemplary level criteria :

No

Credits awarded : 3

Health and Wellbeing (Hea)

Hea 01 Visual Comfort

To ensure daylighting, artificial lighting and occupant controls are considered at the design stage to ensure best practice in visual performance and comfort for building occupants.

Assessment Criteria

Glare control :	No
Daylighting (building type dependant) :	0
Prerequisite - All fluorescent and compact fluorescent lamps fitted with high frequency ballasts :	Yes
View out :	Yes
Internal and external lighting levels, zoning and controls :	Yes
Latitude :	

Credits awarded : 2

Hea 02 Indoor Air Quality

To recognise and encourage a healthy internal environment through the specification and installation of appropriate ventilation, equipment and finishes.

Assessment Criteria

Pre requisite: Have any materials containing asbestos been avoided within the building? :	Yes
Ventilation :	No
Min. sources of air pollution: indoor air quality plan :	Yes
VOCs (products) Emissions from building products :	Yes
Exemplary level VOCs (products) :	1
Post-construction indoor air quality measurement :	Yes
Adaptability - potential for natural ventilation :	No

Credits awarded : 3

Exemplary credits awarded : 1

Hea 03 Safe containment in laboratories

To recognise and encourage a healthy internal environment through the safe containment and removal of pollutants.

Assessment Criteria - NA

Credits awarded : 0

Hea 04 Thermal comfort

To ensure that appropriate thermal comfort levels are achieved through design, and controls are selected to maintain a thermally comfortable environment for occupants within the building.

Assessment Criteria

Thermal modelling :	Yes
Adaptability - for a projected climate change scenario :	Yes
Thermal zoning and control :	Yes

Key Performance Indicators: Thermal comfort

Predicted Mean Vote (PMV) :

Predicted Percentage Dissatisfied (PPD) :

Key Performance Indicators: Adaptability

Predicted Mean Vote (PMV) :

Predicted Percentage Dissatisfied (PPD) :

Credits awarded : 3

Hea 05 Acoustic Performance

To ensure the building's acoustic performance including sound insulation meet the appropriate standards for its purpose.

Assessment Criteria

Prerequisite - Has a SQA been appointed at the appropriate stage? :	Yes
Acoustic performance standards for residential buildings and long term stay residential institutions :	1

Credits awarded : 1

Hea 06 Accessibility

To recognise and encourage effective measures that promote safe and secure use and access to and from the building.

Assessment Criteria

Safe access : Yes

Inclusive and accessible design : Yes

Credits awarded : 2

Hea07 07 Hazards

To reduce or negate the impact of a natural hazard on the building

Assessment Criteria

Hazards : No

Credits awarded : 0

Hea 08 Private space

Assessment criteria - N/A

Hea 09 Water quality

Assessment Criteria

Are all water systems in compliance with the relevant national health and safety best practice guides or regulations? : Yes

Minimising risk of contamination : Yes

Credits awarded : 1

Energy (Ene)

Ene 01 Reduction of energy use and carbon emissions

To recognise and encourage buildings designed to minimise operational energy demand, primary energy consumption and CO2 emissions.

Which option is being followed

Which option is being followed? :	Option 1: Use of approved building energy calculation software
Which route has been followed to generate a notional building? :	DSM

Available Metrics calculated by approved energy calculation methodology

Energy demand :	Yes
Primary energy consumption :	Yes
CO2 emissions :	Yes
Internal lighting included in approved building energy calculation software? :	Yes

Ene01 Calculator and Key Performance Indicators

Reference building energy demand :	57.53 MJ/m2/year
Actual building energy demand :	57.67 MJ/m2/year
Reference building primary energy consumption :	29.73 kWh/m2/year
Actual building primary energy consumption :	27.5 kWh/m2/year
Reference Building Emission Rate :	4.02 kgCO2/m2/year
Actual Building Emission Rate :	3.7 kgCO2/m2/year

Calculation Outputs

Primary energy consumption reduction over minimum standards :	7.500840901446351%
Alignment with EU taxonomy :	No

Actual building emission rate improvement over reference building :	7.959999999999994 %
Demand Energy Performance Ratio (EPRdem) :	0.0
Consumption Energy Performance Ratio (EPRPC) :	0.0494
CO2 Energy Performance Ratio (EPRCO2) :	0.0536
Overall Building Energy Performance Ratio (EPRNC) :	0.1031

Checklist A5

Lighting :

Towards carbon negative (exemplary credits)

Have 9 credits been achieved using Option 1? :	No
Is 100% of the buildings regulated energy use plus a percentage of the building's equipment energy requirements generated by On-site LSZ or Near-site LZC technologies? :	Yes
Equivalent % of additional emissions from unregulated energy that are offset by LSZ sources :	5 %
operational energy consumption	Prediction of
Has a design workshop focusing on operational energy performance been carried out? :	Yes
Additional energy modelling to generate predicted operational energy consumption figures carried out? :	Yes
Predicted energy consumption targets by end use, design assumptions and input data reported? :	Yes
Risk assessment to highlight any significant design, technical, and process risks? :	Yes
Has the operational energy performance of the building been substantially improved? :	Yes

Post-occupancy stage (exemplary credits)

Maximum credits achieved in Ene 02 Energy monitoring? :	Yes
The client or building occupier commits funds to pay for the post-occupancy stage? :	Yes
The energy model is submitted to BRE and retained by the building owner? :	Yes

Credits awarded : 5

Exemplary credits awarded : 2

Ene 02 Energy Monitoring

To recognise and encourage the installation of energy sub-metering that facilitates the

monitoring of operational energy consumption.

Assessment Criteria

Sub-metering by end-use : Yes

Credits awarded : 1

Ene 03 External Lighting

To recognise and encourage the specification of energy efficient light fittings for external areas of the development.

Assessment Criteria

Do any of the following apply to the asset? : The average initial luminous efficacy of external lighting â¥ 70 luminaire lumens / circuit watt

Please confirm average luminous efficacy of external lighting : 105 luminaire lumens per circuit Watt

Credits awarded : 1

Ene 04 Low carbon design

To encourage the adoption of design measures, which reduce building energy consumption and associated carbon emissions and minimise reliance on active building services systems.

Assessment Criteria

Has the first credit within Hea 04 been achieved? : Yes

Passive design analysis : Yes

Calculated reduction in overall building energy demand due to passive design measures. : 5 %

Low and zero carbon technologies specified in line with feasibility study : Yes

KPI - Low and/or zero carbon energy generation

Total on-site and/or near-site LZC energy generation :

Expected reduction in CO₂-eq emissions resulting from the low and zero

carbon technologies :

Credits awarded : 2

Ene 05 Energy Efficient Cold Storage

To recognise and encourage the installation of energy efficient refrigeration systems, therefore reducing operational greenhouse gas emissions resulting from the system's energy use.

Assessment criteria - N/A

Ene 06 Energy efficient transportation systems

To recognise and encourage the specification of energy efficient transportation systems.

Assessment Criteria

Energy consumption : Yes

Energy efficient features : Yes

Estimated annual energy consumption for specified transport system: :

Credits awarded : 3

Ene 07 Energy Efficient Laboratory Systems

To recognise and encourage laboratory areas that are designed to be energy efficient and minimise the CO2 emissions associated with their operational energy consumption.

Assessment criteria - N/A

Ene 08 Energy Efficient Equipment

To recognise and encourage procurement of energy efficient equipment to ensure optimum performance and energy savings in operation.

Assessment Criteria

A: Small power and plug in equipment present? : Yes

Does it contribute to a significant proportion of total annual equipment energy consumption? : No

B: Swimming pool present? :	No
C: Laundry facilities with commercial-sized appliances present? :	Yes
Does it contribute to a significant proportion of total annual equipment energy consumption? :	Yes
How have you demonstrated a meaningful reduction? :	By meeting the deemed to comply requirements in Table 6
D: IT-intensive operating areas present? :	No
E: Domestic scale appliances present? :	Yes
Does it contribute to a significant proportion of total annual equipment energy consumption? :	Yes
How have you demonstrated a meaningful reduction? :	By meeting the deemed to comply requirements in Table 6
F: Commercial kitchen and catering facilities present? :	No
Are there any other equipment or systems present which contribute to a significant proportion of annual equipment energy consumption? :	No
Credits awarded : 2	

Ene 09 Drying Space

To provide a reduced energy means of drying clothes.

Assessment Criteria

This issue is not assessed in this scheme version :

Credits awarded : 0

Ene 10 Flexible demand side response

To recognise and encourage flexible demand side response capability for electricity. Reducing carbon emissions by enabling electricity demand profiles to better match the availability of renewable electricity generation sources.

Assessment Criteria

The building is fitted with a smart appliance or smart control system that modifies appliance operation in response to external signals from electricity

No

suppliers. :

No

The building incorporates electricity or hot water storage facilities that

modify charging in response to external signals from electricity suppliers. : **Credits awarded**
: **0**

Transport (Tra)

Tra 01 Public Transport Accessibility

To recognise and encourage development in proximity of good public transport networks, thereby helping to reduce transport-related pollution and congestion.

Building type category (for purpose of Tra01 issue assessment)

Building type category (for purpose of Tra01 issue assessment) :	Long term residential institutions
--	------------------------------------

Assessment Criteria

Public transport accessibility index :	6
Building dedicated bus service :	No

Credits awarded : 2

Tra 02 Proximity to Amenities

To encourage and reward a building location that facilitates easy access to local services and so reduces the environmental, social and economic impacts resulting from multiple or extended building user journeys, including transport-related emissions and traffic congestion.

Assessment Criteria

Close proximity and accessible to applicable amenities :	2
--	---

Credits awarded : 2

Tra 03 Alternative modes of transport

To encourage building users to cycle, so promoting exercise and helping reduce congestion and emissions, by ensuring adequate provision of cyclist facilities.

Assessment Criteria

Which option has been implemented? :	Option 5: cycle spaces and facilities
Have two options above been fully implemented? :	Yes

Credits awarded : 2
Exemplary credits awarded : 1

Tra 04 Maximum Car Parking Capacity

To encourage the use of alternative means of transport other than the private car to and from the building, thereby helping to reduce transport-related emissions and traffic congestion associated with the building's operation.

Assessment Criteria

Maximum parking capacity : Yes

Credits achieved : 2

Credits awarded : 2

Tra 05 Travel Plan

To recognise the consideration given to accommodating a range of travel options for building users, thereby encouraging the reduction of reliance on forms of travel that have the highest environmental impact.

Assessment Criteria

Transport plan based on site specific travel survey/assessment : Yes

Credits awarded : 1

Tra 06 Home office

Assessment criteria - N/A

Water (Wat)

Wat 01 Water Consumption

To reduce the consumption of potable water for sanitary use in new buildings from all sources through the use of water efficient components and water recycling systems.

Approach

Please select the calculation procedure used :	Standard approach
Credits awarded :	2
Exemplary performance :	0

Standard approach data

Water Consumption from building micro-components :

Water demand met via greywater/rainwater sources :

Total net water consumption :

Improvement on baseline performance :

Precipitation zone :

Key Performance Indicator - use of freshwater resource

Total net Water Consumption :

Default building occupancy :

Credits awarded : 2

Wat 02 Water Monitoring

To ensure water consumption can be monitored and managed, and therefore encourage reductions.

Assessment Criteria

Water meter on the mains water supply to the building(s) :	Yes
Metering/monitoring equipment on supply to plant/building areas :	Yes
Pulsed output on all relevant water meters :	Yes

Existing BMS connection :

N/A

Credits awarded : 1

Wat 03 Water Leak Detection

To reduce the impact of water leaks that may otherwise go undetected.

Assessment Criteria

Leak detection on building's mains water supply :

Yes

Flow control device to each sanitary area/facility :

Yes

Credits awarded : 2

Wat 04 Water Efficient Equipment

To reduce water consumption by encouraging specification of water efficient equipment.

Assessment Criteria

Has a meaningful reduction in water demand been achieved? :

Yes

Credits awarded : 1

Materials (Mat)

Mat 01 Life Cycle Impacts

To recognise and encourage the use of construction materials with a low environmental impact (including embodied carbon) over the full life cycle of the building.

Assessment Criteria

Total Mat01 credits achieved :	1
Total Mat01 points achieved :	1
Are at least 5 products covered by EPD? :	No
Exemplary level compliant? :	No

Credits awarded : 1

Mat 02 Hard Landscaping and Boundary Protection

To recognise and encourage the specification of materials for boundary protection and external hard surfaces that have a low environmental impact, taking into account of the full life cycle of materials used.

Assessment Criteria

Mat 02 is not assessed as a standalone issue but incorporated within issue Mat 01 Life Cycle Impacts. :

Credits awarded : 0

Mat 03 Responsible Sourcing of materials

To recognise and encourage the specification and procurement of responsibly sourced materials for key building elements.

Assessment Criteria

All timber and timber based products are 'Legally harvested and traded timber' :	Yes
Is there a documented sustainable procurement plan :	Yes
Percentage of available responsible sourcing of materials points achieved :	15
Please confirm the route used to assess Mat 03 :	Route 3: Combination of

Credits awarded : 2

Mat 04 Insulation

To recognise and encourage the use of thermal insulation which has a low embodied environmental impact relative to its thermal properties

Assessment Criteria

Mat 04 is not assessed as a standalone issue but incorporated within issue Mat 01 Life Cycle Impacts and Mat 03 Responsible sourcing of materials. :

Credits awarded : 0

Mat 05 Designing for durability and resilience

To recognise and encourage adequate protection of exposed elements of the building and landscape, therefore minimising the frequency of replacement and maximising materials optimisation.

Assessment Criteria

Protecting vulnerable parts of the building from damage : Yes

Protecting exposed parts of the building from material degradation : Yes

Credits awarded : 1

Mat 06 Material efficiency

To recognise and encourage measures to optimise material efficiency in order to minimise environmental impact of material use and waste.

Assessment Criteria

Material efficiency measures have been identified, investigated and implemented during all RIBA stages : Yes

Credits awarded : 1

Waste (Wst)

Wst 01 Construction Waste Management

To promote resource efficiency via the effective management and reduction of construction waste.

Assessment Criteria

Targets set in for non-hazardous and hazardous waste produced on site : Yes

Procedures are in place to minimise non-hazardous and hazardous waste : Yes

Site construction waste is being monitored and targets regularly reviewed : Yes

Management has nominated individual responsible for implementing the above : Yes

Pre-demolition audit completed : Yes

Amount of waste generated reported : Yes

Measure/units for the data being reported : Tonnes

Waste generated per 100m² : 3.5 tonnes

Above criteria met : Yes

Construction waste sorted into >=5 defined waste groups : Yes

Diversion of resources from landfill

National construction waste recovery rate : <50% (by weight)

Non hazardous construction waste diverted from landfill : <60% (by weight) or <50% (by volume) [0]

National demolition waste recovery rate : <60% (by weight)

Demolition waste diverted from landfill : <70% (by weight) or <60% (by volume) [0]

Destination of non-hazardous waste :

Address 1 :

Address 2 :

Town :

County :

Postcode :

Units for measuring level of waste diverted from landfill :

Credits awarded : 2

Wst 02 Recycled Aggregates

To recognise and encourage the use of recycled and secondary aggregates, thereby reducing the demand for virgin material and optimising material efficiency in construction.

Assessment Criteria

Total % of high-grade aggregate that is recycled/secondary aggregate :

Recycled/Secondary aggregate transported ≤ 30 km by road transport : No

Credits awarded : 0

Wst 03 Operational Waste

To recognise and encourage the provision of dedicated storage facilities for a building's operational-related recyclable waste streams, so that this waste is diverted from landfill or incineration.

Assessment Criteria

Segregation and storage of operational recyclable waste volumes : Yes

Static waste compactor(s) or baler(s) : N/A

Credits awarded : 1

Wst 04 Speculative Floor and Ceiling Finishes

To encourage the specification and fitting of floor and ceiling finishes selected by the building occupant and therefore avoid unnecessary waste of materials.

Assessment criteria - N/A

Wst 05 Adaptation to climate change

To recognise and encourage measures taken to mitigate the impact of extreme weather conditions arising from climate change over the lifespan of the building.

Assessment Criteria

Adaption to climate change - structural and fabric resilience :	Yes
Exemplary level - responding to adaptation to climate change :	No

Credits awarded : 1

Wst 06 Functional adaptability

To recognise and encourage measures taken to accommodate future changes of use of the building over its lifespan.

Assessment Criteria

Functional adaptability :	Yes
---------------------------	-----

Credits awarded : 1

Land Use and Ecology (LE)

LE 01 Site Selection

To encourage the use of previously occupied and/or contaminated land and avoid land which has not been previously disturbed.

Assessment Criteria

Previously occupied land :	Yes
Percentage of proposed development's footprint on previously occupied land :	100
Contaminated land :	No

Credits awarded : 2

LE 02 Ecological Value of Site and Protection of Ecological Features

To encourage development on land that already has limited value to wildlife and to protect existing ecological features from substantial damage during site preparation and completion of construction works.

Assessment Criteria

Ecological value of the land defined using :	A Suitably Qualified Ecologist
Land of low ecological value :	Yes
Protection of ecological features :	Yes

Credits awarded : 2

LE 03 Minimising impact on existing site ecology

To minimise the impact of a building development on existing site ecology.

Assessment Criteria

This issue is not applicable to BREEAM International New Construction Version 6 :

Credits awarded : 0

LE 04 Enhancing Site Ecology

To encourage actions taken to enhance the ecological value of the site as a result of development.

Assessment Criteria

Suitably Qualified Ecologist appointment (SQE) :	Yes
Suitably qualified ecologist's report and recommendations :	Yes
Percentage of recommendations implemented :	100 %

Credits awarded : 3

LE 05 Long Term Impact on Biodiversity

To minimise the long term impact of the development on the site and the surrounding area's biodiversity.

Assessment Criteria

Suitably qualified ecologist (SQE) appointed :	Yes
Landscape and habitat management plan :	Yes
Number of applicable measures :	1

Credits awarded : 2

Pollution (Pol)

Pol 01 Impact of Refrigerants

To reduce the level of greenhouse gas emissions arising from the leakage of refrigerants from building systems.

Assessment Criteria

Refrigerant containing systems installed in the assessed building? :	Yes
EN 378:2008 or ISO 5149:2014 (where applicable)? :	Yes
Refrigerants with ODP of zero? :	No
Global Warming Potential of the specified refrigerant(s) 10 or less? :	No
Total Direct Effect Life Cycle CO ₂ eq. emissions from the system :	0 kgCO ₂ eq/kW coolth capacity
Cooling/Heating capacity of the system :	90 kW
BREEAM compliant refrigerant leak detection and containment :	Yes

Credits awarded : 1

Pol 02 NOx Emissions

To contribute to a reduction in national NOx emission levels through the use of low emission heat sources in the building.

Assessment Criteria

NOx emission level - space heating :	0 mg/kWh
NOx emission level - cooling :	0 mg/kWh
NOx emission level - water heating :	0 mg/kWh
Energy consumption: heating and hot water :	15.6 kWh/m ² /yr
Direct NOx emissions :	0 mg/kWh
Indirect NOx emissions :	0 mg/kWh

Credits awarded : 2

Pol 03 Surface Water Run off

To avoid, reduce and delay the discharge of rainfall to public sewers and watercourses, thereby minimising the risk and impact of localised flooding on and off-site, watercourse pollution and other environmental damage.

Assessment Criteria

Annual probability of flooding :	High
Flood Risk Assessment and ground level of the building and access :	Yes
Surface water run off - peak rate :	Yes
Surface water run off - volume, attenuation and/or limiting discharge :	Yes
Minimising watercourse pollution :	Yes

Credits awarded : 4

Pol 04 Reduction of Night Time Light Pollution

To ensure that external lighting is concentrated in the appropriate areas and that upward lighting is minimised, reducing unnecessary light pollution, energy consumption and nuisance to neighbouring properties.

Assessment Criteria

Is external lighting specified in accordance with the relevant criteria? :	Yes
--	-----

Credits awarded : 1

Pol 05 Noise Attenuation

To reduce the likelihood of noise arising from fixed installations on the new development affecting nearby noise-sensitive buildings.

Assessment Criteria

Noise-sensitive areas/buildings within 800m radius of the development :	Yes
Noise impact assessment and, if applicable, noise attenuation measures :	Yes

Credits awarded : 1

Pol 07 Local air quality

Assessment criteria - N/A

Innovation (Inn)

Inn 01 Innovation	
To support innovation within the construction industry through the recognition of sustainability related benefits which are not rewarded by standard BREEAM issues.	
Assessment Criteria	
Number of 'approved' innovation credits achieved? :	0
Credits awarded : 0	

Appendix B: BRUKL Output

See separate BRUKL Output pdf for appendices content.

Please note that the areas detailed on the BRUKL vary slightly from the figures given in the above as the BRUKL is from the previous scheme. Given the minimal, if any, impact the additional floor would have on the results, the carbon emissions have been prorated accordingly to account for the additional building area, and therefore emissions.

Project name

Hotspur Press

As designed

Date: Tue Oct 10 17:26:28 2023

Administrative information

Building Details

Address: Hotspur Press, Manchester, M1 5QR

Certifier details

Name:

Telephone number:

Address: , ,

Certification tool

Calculation engine: TAS

Calculation engine version: "v9.5.6"

Interface to calculation engine: TAS

Interface to calculation engine version: v9.5.6

BRUKL compliance module version: v6.1.e.0

Foundation area [m²]: 1009The CO₂ emission and primary energy rates of the building must not exceed the targets

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	3.73
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	3.48
Target primary energy rate (TPER), kWh _{PE} /m ² annum	40.01
Building primary energy rate (BPER), kWh _{PE} /m ² annum	37.16
Do the building's emission and primary energy rates exceed the targets?	BER ≤ TER BPER ≤ TPER

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

Fabric element	U _a -Limit	U _a -Calc	U _i -Calc	First surface with maximum value
Walls*	0.26	0.12	0.12	Basement Wall (500) [EXT]
Floors	0.18	0.24	0.25	Ground Floor [EXT]
Pitched roofs	0.16	-	-	No pitched roofs in project
Flat roofs	0.18	0.12	0.12	Roof
Windows** and roof windows	1.6	1.17	1.26	W02 - Opaque Panel (OPENS)
Rooflights***	2.2	-	-	No rooflights in project
Personnel doors^	1.6	1.57	1.61	D03 - Solid Panel in Glazed Door
Vehicle access & similar large doors	1.3	-	-	No vehicle access or similar large doors in project
High usage entrance doors	3	1.56	1.56	D06 - Glazed Door

U_a-Limit = Limiting area-weighted average U-values [W/(m²K)]U_a-Calc = Calculated area-weighted average U-values [W/(m²K)]U_i-Calc = Calculated maximum individual element U-values [W/(m²K)]

* Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.

** Display windows and similar glazing are excluded from the U-value check.

*** Values for rooflights refer to the horizontal position.

^ For fire doors, limiting U-value is 1.8 W/m²K

NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
m ³ /(h.m ²) at 50 Pa	8	3

Building services

For details on the standard values listed below, system-specific guidance, and additional regulatory requirements, refer to the Approved Documents.

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

1- MVHR (Bedrooms) (545 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.7	-	-	-	0.9
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

2- MVHR (Studios) (533 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.7	-	-	-	0.83
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

3- MVHR (Kitchen) (51 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.7	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

4- VRF + MV (Reception/Wintergarden/Games) (9 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	5.88	5.88	-	2.2	0.7
Standard value	2.5*	5	N/A	2^	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

5- VRF + MV (Study) (4 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	5.88	5.88	-	2.2	0.7
Standard value	2.5*	5	N/A	2^	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

6- VRF + MV (Multimedia/Cinema) (2 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	5.88	5.88	-	2.2	0.7
Standard value	2.5*	5	N/A	2^	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

7- Extract Only (Toilets) (4 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.7	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

8- Extract Only (Refuse Bay) (-01_Refuse Bay)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.7	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

9- MVHR (Welfare) (00_Welfare)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.7	-	-	-	0.83
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

10- NV (Stores)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.7	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

11- VRF + MV (Commercial) (4 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	5.88	5.88	-	-	0.83
Standard value	2.5*	5	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

12- MV (Kitchen) (00_Kitchen)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.7	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

13- VRF + NV (Comms) (-01_Comms)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0	5.88	-	-	-
Standard value	N/A	5	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

14- NV (Circulation)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.7	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

1- New HWS Circuit

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	3.56	0
Standard value	2*	N/A
* Standard shown is for all types except absorption and gas engine heat pumps.		

2- New HWS Circuit

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	1	0
Standard value	1	N/A

Zone-level mechanical ventilation, exhaust, and terminal units

ID	System type in the Approved Documents
A	Local supply or extract ventilation units
B	Zonal supply system where the fan is remote from the zone
C	Zonal extract system where the fan is remote from the zone
D	Zonal balanced supply and extract ventilation system
E	Local balanced supply and extract ventilation units
F	Other local ventilation units
G	Fan assisted terminal variable air volume units
H	Fan coil units
I	Kitchen extract with the fan remote from the zone and a grease filter
NB: Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.	

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		Zone	Standard
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1			
-01_Refuse Bay	-	-	0.4	-	-	-	-	-	-		-	N/A

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
00_Gallery - Perimeter 1	-	-	-	-	1	-	-	-	-	-	N/A
00_Gallery - Perimeter 2	-	-	-	-	1	-	-	-	-	-	N/A
00_Gallery - Non-Perimeter	-	-	-	-	1	-	-	-	-	-	N/A
00_Café	-	-	-	-	1	-	-	-	-	-	N/A
00_Kitchen	-	-	-	-	2	-	-	-	-	-	N/A
00_Welfare	-	-	-	0.9	-	-	-	-	-	-	N/A
00_Toilet 1	-	-	0.4	-	-	-	-	-	-	-	N/A
00_Toilet 2	-	-	0.4	-	-	-	-	-	-	-	N/A
00_Toilet 3	-	-	0.4	-	-	-	-	-	-	-	N/A
00_Toilet 4	-	-	0.4	-	-	-	-	-	-	-	N/A
01_Bath 1	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 2	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 3	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 4	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 5	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 6	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 7	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 8	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 9	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 10	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 11	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 12	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 13	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 14	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 15	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 16	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 17	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 18	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 19	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 20	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 21	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 22	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bath 23	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bed 1	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bed 2	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bed 3	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bed 4	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bed 5	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bed 6	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bed 7	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bed 8	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bed 9	-	-	-	-	0.1	-	-	-	-	-	N/A
01_Bed 10	-	-	-	-	0.1	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
01_Bed 11	-	-	-	-	0.1	-	-	-	-	-	N/A	
01_Bed 12	-	-	-	-	0.1	-	-	-	-	-	N/A	
01_Bed 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
01_Bed 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
01_Bed 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
01_Bed 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
01_Bed 17	-	-	-	-	0.1	-	-	-	-	-	N/A	
01_Bed 18	-	-	-	-	0.1	-	-	-	-	-	N/A	
01_Bed 19	-	-	-	-	0.1	-	-	-	-	-	N/A	
01_Bed 20	-	-	-	-	0.1	-	-	-	-	-	N/A	
01_Bed 21	-	-	-	-	0.1	-	-	-	-	-	N/A	
01_Bed 22	-	-	-	-	0.1	-	-	-	-	-	N/A	
01_Bed 23	-	-	-	-	0.1	-	-	-	-	-	N/A	
01_Tea 1 - Perimeter	-	-	-	-	0.3	-	-	-	-	-	N/A	
01_Tea 1 - Non-Perimeter	-	-	-	-	0.3	-	-	-	-	-	N/A	
01_Tea 2	-	-	-	-	0.3	-	-	-	-	-	N/A	
01_Tea 3	-	-	-	-	0.3	-	-	-	-	-	N/A	
01_Tea 4 - Perimeter	-	-	-	-	0.3	-	-	-	-	-	N/A	
01_Tea 4 - Non-Perimeter	-	-	-	-	0.3	-	-	-	-	-	N/A	
02_Bath 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
02_Bath 2	-	-	-	-	0.9	-	-	-	-	-	N/A	
02_Bath 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
02_Bath 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
02_Bath 5	-	-	-	-	0.9	-	-	-	-	-	N/A	
02_Bath 6	-	-	-	-	0.9	-	-	-	-	-	N/A	
02_Bath 7	-	-	-	-	0.9	-	-	-	-	-	N/A	
02_Bath 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
02_Bath 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
02_Bath 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
02_Bath 11	-	-	-	-	0.1	-	-	-	-	-	N/A	
02_Bath 12	-	-	-	-	0.1	-	-	-	-	-	N/A	
02_Bath 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
02_Bath 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
02_Bath 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
02_Bath 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
02_Bath 17	-	-	-	-	0.1	-	-	-	-	-	N/A	
02_Bath 18	-	-	-	-	0.1	-	-	-	-	-	N/A	
02_Bath 19	-	-	-	-	0.1	-	-	-	-	-	N/A	
02_Bath 20	-	-	-	-	0.1	-	-	-	-	-	N/A	
02_Bath 21	-	-	-	-	0.1	-	-	-	-	-	N/A	
02_Bath 22	-	-	-	-	0.1	-	-	-	-	-	N/A	
02_Bath 23	-	-	-	-	0.1	-	-	-	-	-	N/A	
02_Bed 1	-	-	-	-	0.1	-	-	-	-	-	N/A	

Zone name	SFP [W/(l/s)]										HR efficiency	
	ID of system type	A	B	C	D	E	F	G	H	I		
	Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
02_Bed 2		-	-	-	-	0.9	-	-	-	-	-	N/A
02_Bed 3		-	-	-	-	0.9	-	-	-	-	-	N/A
02_Bed 4		-	-	-	-	0.9	-	-	-	-	-	N/A
02_Bed 5		-	-	-	-	0.9	-	-	-	-	-	N/A
02_Bed 6		-	-	-	-	0.9	-	-	-	-	-	N/A
02_Bed 7		-	-	-	-	0.9	-	-	-	-	-	N/A
02_Bed 8		-	-	-	-	0.1	-	-	-	-	-	N/A
02_Bed 9		-	-	-	-	0.1	-	-	-	-	-	N/A
02_Bed 10		-	-	-	-	0.1	-	-	-	-	-	N/A
02_Bed 11		-	-	-	-	0.1	-	-	-	-	-	N/A
02_Bed 12		-	-	-	-	0.1	-	-	-	-	-	N/A
02_Bed 13		-	-	-	-	0.1	-	-	-	-	-	N/A
02_Bed 14		-	-	-	-	0.1	-	-	-	-	-	N/A
02_Bed 15		-	-	-	-	0.1	-	-	-	-	-	N/A
02_Bed 16		-	-	-	-	0.1	-	-	-	-	-	N/A
02_Bed 17		-	-	-	-	0.1	-	-	-	-	-	N/A
02_Bed 18		-	-	-	-	0.1	-	-	-	-	-	N/A
02_Bed 19		-	-	-	-	0.1	-	-	-	-	-	N/A
02_Bed 20		-	-	-	-	0.1	-	-	-	-	-	N/A
02_Bed 21		-	-	-	-	0.1	-	-	-	-	-	N/A
02_Bed 22		-	-	-	-	0.1	-	-	-	-	-	N/A
02_Bed 23		-	-	-	-	0.1	-	-	-	-	-	N/A
02_Tea 1 - Perimeter		-	-	-	-	0.3	-	-	-	-	-	N/A
02_Tea 1 - Non-Perimeter		-	-	-	-	0.3	-	-	-	-	-	N/A
02_Tea 2		-	-	-	-	0.3	-	-	-	-	-	N/A
02_Tea 3		-	-	-	-	0.3	-	-	-	-	-	N/A
02_Tea 4 - Perimeter		-	-	-	-	0.3	-	-	-	-	-	N/A
02_Tea 4 - Non-Perimeter		-	-	-	-	0.3	-	-	-	-	-	N/A
03_Bath 1		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bath 2		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bath 3		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bath 4		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bath 5		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bath 6		-	-	-	-	0.9	-	-	-	-	-	N/A
03_Bath 7		-	-	-	-	0.9	-	-	-	-	-	N/A
03_Bath 8		-	-	-	-	0.9	-	-	-	-	-	N/A
03_Bath 9		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bath 10		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bath 11		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bath 12		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bath 13		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bath 14		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bath 15		-	-	-	-	0.1	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]										HR efficiency	
	ID of system type	A	B	C	D	E	F	G	H	I		
	Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
03_Bath 16		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bath 17		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bath 18		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bath 19		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bed 1		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bed 2		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bed 3		-	-	-	-	0.9	-	-	-	-	-	N/A
03_Bed 4		-	-	-	-	0.9	-	-	-	-	-	N/A
03_Bed 5		-	-	-	-	0.9	-	-	-	-	-	N/A
03_Bed 6		-	-	-	-	0.9	-	-	-	-	-	N/A
03_Bed 7		-	-	-	-	0.9	-	-	-	-	-	N/A
03_Bed 8		-	-	-	-	0.9	-	-	-	-	-	N/A
03_Bed 9		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bed 10		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bed 11		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bed 12		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bed 13		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bed 14		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bed 15		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bed 16		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bed 17		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bed 18		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Bed 19		-	-	-	-	0.1	-	-	-	-	-	N/A
03_Tea 1		-	-	-	-	0.3	-	-	-	-	-	N/A
03_Tea 2		-	-	-	-	0.3	-	-	-	-	-	N/A
03_Tea 3		-	-	-	-	0.3	-	-	-	-	-	N/A
04_Bath 1		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bath 2		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bath 3		-	-	-	-	0.9	-	-	-	-	-	N/A
04_Bath 4		-	-	-	-	0.9	-	-	-	-	-	N/A
04_Bath 5		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bath 6		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bath 7		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bath 8		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bath 9		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bath 10		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bath 11		-	-	-	-	0.9	-	-	-	-	-	N/A
04_Bath 12		-	-	-	-	0.9	-	-	-	-	-	N/A
04_Bath 13		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bath 14		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bath 15		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bath 16		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bed 1		-	-	-	-	0.1	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]										HR efficiency	
	ID of system type	A	B	C	D	E	F	G	H	I		
	Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
04_Bed 2		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bed 3		-	-	-	-	0.9	-	-	-	-	-	N/A
04_Bed 4		-	-	-	-	0.9	-	-	-	-	-	N/A
04_Bed 5		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bed 6		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bed 7		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bed 8		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bed 9		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bed 10		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bed 11		-	-	-	-	0.9	-	-	-	-	-	N/A
04_Bed 12		-	-	-	-	0.9	-	-	-	-	-	N/A
04_Bed 13		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bed 14		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bed 15		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Bed 16		-	-	-	-	0.1	-	-	-	-	-	N/A
04_Tea 1		-	-	-	-	0.3	-	-	-	-	-	N/A
04_Tea 2		-	-	-	-	0.3	-	-	-	-	-	N/A
05_Bath 1		-	-	-	-	0.1	-	-	-	-	-	N/A
05_Bath 2		-	-	-	-	0.1	-	-	-	-	-	N/A
05_Bath 3		-	-	-	-	0.9	-	-	-	-	-	N/A
05_Bath 4		-	-	-	-	0.9	-	-	-	-	-	N/A
05_Bath 5		-	-	-	-	0.1	-	-	-	-	-	N/A
05_Bath 6		-	-	-	-	0.1	-	-	-	-	-	N/A
05_Bath 7		-	-	-	-	0.1	-	-	-	-	-	N/A
05_Bath 8		-	-	-	-	0.1	-	-	-	-	-	N/A
05_Bath 9		-	-	-	-	0.1	-	-	-	-	-	N/A
05_Bath 10		-	-	-	-	0.1	-	-	-	-	-	N/A
05_Bath 11		-	-	-	-	0.9	-	-	-	-	-	N/A
05_Bath 12		-	-	-	-	0.9	-	-	-	-	-	N/A
05_Bath 13		-	-	-	-	0.1	-	-	-	-	-	N/A
05_Bath 14		-	-	-	-	0.1	-	-	-	-	-	N/A
05_Bath 15		-	-	-	-	0.1	-	-	-	-	-	N/A
05_Bath 16		-	-	-	-	0.1	-	-	-	-	-	N/A
05_Bed 1		-	-	-	-	0.1	-	-	-	-	-	N/A
05_Bed 2		-	-	-	-	0.1	-	-	-	-	-	N/A
05_Bed 3		-	-	-	-	0.9	-	-	-	-	-	N/A
05_Bed 4		-	-	-	-	0.9	-	-	-	-	-	N/A
05_Bed 5		-	-	-	-	0.1	-	-	-	-	-	N/A
05_Bed 6		-	-	-	-	0.1	-	-	-	-	-	N/A
05_Bed 7		-	-	-	-	0.1	-	-	-	-	-	N/A
05_Bed 8		-	-	-	-	0.1	-	-	-	-	-	N/A
05_Bed 9		-	-	-	-	0.1	-	-	-	-	-	N/A
05_Bed 10		-	-	-	-	0.1	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
05_Bed 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
05_Bed 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
05_Bed 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
05_Bed 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
05_Bed 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
05_Bed 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
05_Tea 1	-	-	-	-	0.3	-	-	-	-	-	N/A	
05_Tea 2	-	-	-	-	0.3	-	-	-	-	-	N/A	
06_Bath 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bath 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bath 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
06_Bath 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
06_Bath 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bath 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bath 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bath 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bath 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bath 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
06_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
06_Bath 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bath 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bath 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bath 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bed 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bed 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bed 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
06_Bed 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
06_Bed 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bed 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bed 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bed 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bed 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bed 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bed 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
06_Bed 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
06_Bed 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bed 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bed 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Bed 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
06_Tea 1	-	-	-	-	0.3	-	-	-	-	-	N/A	
06_Tea 2	-	-	-	-	0.3	-	-	-	-	-	N/A	
07_Bath 1	-	-	-	-	0.1	-	-	-	-	-	N/A	

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
07_Bath 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bath 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
07_Bath 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
07_Bath 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bath 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bath 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bath 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bath 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bath 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
07_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
07_Bath 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bath 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bath 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bath 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bed 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bed 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bed 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
07_Bed 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
07_Bed 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bed 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bed 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bed 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bed 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bed 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bed 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
07_Bed 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
07_Bed 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bed 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bed 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Bed 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
07_Tea 1	-	-	-	-	0.3	-	-	-	-	-	N/A	
07_Tea 2	-	-	-	-	0.3	-	-	-	-	-	N/A	
08_Bath 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bath 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bath 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
08_Bath 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
08_Bath 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bath 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bath 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bath 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bath 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bath 10	-	-	-	-	0.1	-	-	-	-	-	N/A	

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
08_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
08_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
08_Bath 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bath 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bath 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bath 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bed 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bed 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bed 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
08_Bed 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
08_Bed 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bed 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bed 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bed 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bed 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bed 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bed 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
08_Bed 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
08_Bed 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bed 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bed 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Bed 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
08_Tea 1	-	-	-	-	0.3	-	-	-	-	-	N/A	
08_Tea 2	-	-	-	-	0.3	-	-	-	-	-	N/A	
09_Bath 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bath 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bath 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
09_Bath 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
09_Bath 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bath 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bath 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bath 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bath 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bath 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
09_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
09_Bath 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bath 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bath 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bath 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bed 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bed 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bed 3	-	-	-	-	0.9	-	-	-	-	-	N/A	

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
09_Bed 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
09_Bed 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bed 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bed 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bed 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bed 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bed 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bed 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
09_Bed 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
09_Bed 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bed 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bed 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Bed 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
09_Tea 1	-	-	-	-	0.3	-	-	-	-	-	N/A	
09_Tea 2	-	-	-	-	0.3	-	-	-	-	-	N/A	
10_Bath 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bath 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bath 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
10_Bath 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
10_Bath 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bath 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bath 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bath 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bath 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bath 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
10_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
10_Bath 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bath 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bath 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bath 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bed 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bed 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bed 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
10_Bed 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
10_Bed 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bed 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bed 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bed 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bed 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bed 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
10_Bed 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
10_Bed 12	-	-	-	-	0.9	-	-	-	-	-	N/A	

Zone name	SFP [W/(l/s)]										HR efficiency	
	ID of system type	A	B	C	D	E	F	G	H	I		
	Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
10_Bed 13		-	-	-	-	0.1	-	-	-	-	-	N/A
10_Bed 14		-	-	-	-	0.1	-	-	-	-	-	N/A
10_Bed 15		-	-	-	-	0.1	-	-	-	-	-	N/A
10_Bed 16		-	-	-	-	0.1	-	-	-	-	-	N/A
10_Tea 1		-	-	-	-	0.3	-	-	-	-	-	N/A
10_Tea 2		-	-	-	-	0.3	-	-	-	-	-	N/A
11_Bath 1		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bath 2		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bath 3		-	-	-	-	0.9	-	-	-	-	-	N/A
11_Bath 4		-	-	-	-	0.9	-	-	-	-	-	N/A
11_Bath 5		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bath 6		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bath 7		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bath 8		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bath 9		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bath 10		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bath 11		-	-	-	-	0.9	-	-	-	-	-	N/A
11_Bath 12		-	-	-	-	0.9	-	-	-	-	-	N/A
11_Bath 13		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bath 14		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bath 15		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bath 16		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bed 1		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bed 2		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bed 3		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bed 4		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bed 5		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bed 6		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bed 7		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bed 8		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bed 9		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bed 10		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bed 11		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bed 12		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bed 13		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bed 14		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bed 15		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Bed 16		-	-	-	-	0.1	-	-	-	-	-	N/A
11_Tea 1		-	-	-	-	0.3	-	-	-	-	-	N/A
11_Tea 2		-	-	-	-	0.3	-	-	-	-	-	N/A
12_Bath 1		-	-	-	-	0.1	-	-	-	-	-	N/A
12_Bath 2		-	-	-	-	0.1	-	-	-	-	-	N/A
12_Bath 3		-	-	-	-	0.9	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
12_Bath 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
12_Bath 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bath 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bath 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bath 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bath 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bath 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
12_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
12_Bath 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bath 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bath 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bath 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bed 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bed 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bed 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
12_Bed 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
12_Bed 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bed 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bed 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bed 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bed 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bed 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bed 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
12_Bed 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
12_Bed 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bed 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bed 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Bed 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
12_Tea 1	-	-	-	-	0.3	-	-	-	-	-	N/A	
12_Tea 2	-	-	-	-	0.3	-	-	-	-	-	N/A	
13_Bath 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bath 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bath 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
13_Bath 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
13_Bath 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bath 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bath 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bath 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bath 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bath 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
13_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A	

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
13_Bath 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bath 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bath 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bath 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bed 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bed 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bed 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
13_Bed 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
13_Bed 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bed 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bed 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bed 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bed 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bed 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bed 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
13_Bed 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
13_Bed 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bed 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bed 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Bed 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
13_Tea 1	-	-	-	-	0.3	-	-	-	-	-	N/A	
13_Tea 2	-	-	-	-	0.3	-	-	-	-	-	N/A	
14_Bath 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
14_Bath 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
14_Bath 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
14_Bath 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
14_Bath 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
14_Bath 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
14_Bath 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
14_Bath 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
14_Bath 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
14_Bath 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
14_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
14_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
14_Bath 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
14_Bath 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
14_Bath 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
14_Bath 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
14_Bed 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
14_Bed 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
14_Bed 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
14_Bed 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
14_Bed 5	-	-	-	-	0.1	-	-	-	-	-	N/A	

Zone name	SFP [W/(l/s)]										HR efficiency	
	ID of system type	A	B	C	D	E	F	G	H	I		
	Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
14_Bed 6		-	-	-	-	0.1	-	-	-	-	-	N/A
14_Bed 7		-	-	-	-	0.1	-	-	-	-	-	N/A
14_Bed 8		-	-	-	-	0.1	-	-	-	-	-	N/A
14_Bed 9		-	-	-	-	0.1	-	-	-	-	-	N/A
14_Bed 10		-	-	-	-	0.1	-	-	-	-	-	N/A
14_Bed 11		-	-	-	-	0.9	-	-	-	-	-	N/A
14_Bed 12		-	-	-	-	0.9	-	-	-	-	-	N/A
14_Bed 13		-	-	-	-	0.1	-	-	-	-	-	N/A
14_Bed 14		-	-	-	-	0.1	-	-	-	-	-	N/A
14_Bed 15		-	-	-	-	0.1	-	-	-	-	-	N/A
14_Bed 16		-	-	-	-	0.1	-	-	-	-	-	N/A
14_Tea 1		-	-	-	-	0.3	-	-	-	-	-	N/A
14_Tea 2		-	-	-	-	0.3	-	-	-	-	-	N/A
15_Bath 1		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bath 2		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bath 3		-	-	-	-	0.9	-	-	-	-	-	N/A
15_Bath 4		-	-	-	-	0.9	-	-	-	-	-	N/A
15_Bath 5		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bath 6		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bath 7		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bath 8		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bath 9		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bath 10		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bath 11		-	-	-	-	0.9	-	-	-	-	-	N/A
15_Bath 12		-	-	-	-	0.9	-	-	-	-	-	N/A
15_Bath 13		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bath 14		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bath 15		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bath 16		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bed 1		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bed 2		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bed 3		-	-	-	-	0.9	-	-	-	-	-	N/A
15_Bed 4		-	-	-	-	0.9	-	-	-	-	-	N/A
15_Bed 5		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bed 6		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bed 7		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bed 8		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bed 9		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bed 10		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bed 11		-	-	-	-	0.9	-	-	-	-	-	N/A
15_Bed 12		-	-	-	-	0.9	-	-	-	-	-	N/A
15_Bed 13		-	-	-	-	0.1	-	-	-	-	-	N/A
15_Bed 14		-	-	-	-	0.1	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
15_Bed 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
15_Bed 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
15_Tea 1	-	-	-	-	0.3	-	-	-	-	-	N/A	
15_Tea 2	-	-	-	-	0.3	-	-	-	-	-	N/A	
16_Bath 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bath 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bath 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
16_Bath 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
16_Bath 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bath 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bath 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bath 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bath 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bath 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
16_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
16_Bath 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bath 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bath 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bath 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bed 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bed 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bed 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
16_Bed 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
16_Bed 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bed 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bed 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bed 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bed 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bed 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bed 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
16_Bed 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
16_Bed 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bed 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bed 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Bed 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
16_Tea 1	-	-	-	-	0.3	-	-	-	-	-	N/A	
16_Tea 2	-	-	-	-	0.3	-	-	-	-	-	N/A	
17_Bath 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bath 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bath 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
17_Bath 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
17_Bath 5	-	-	-	-	0.1	-	-	-	-	-	N/A	

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
17_Bath 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bath 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bath 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bath 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bath 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
17_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
17_Bath 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bath 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bath 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bath 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bed 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bed 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bed 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
17_Bed 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
17_Bed 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bed 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bed 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bed 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bed 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bed 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bed 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
17_Bed 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
17_Bed 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bed 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bed 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Bed 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
17_Tea 1	-	-	-	-	0.3	-	-	-	-	-	N/A	
17_Tea 2	-	-	-	-	0.3	-	-	-	-	-	N/A	
18_Bath 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bath 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bath 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
18_Bath 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
18_Bath 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bath 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bath 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bath 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bath 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bath 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
18_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
18_Bath 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bath 14	-	-	-	-	0.1	-	-	-	-	-	N/A	

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
18_Bath 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bath 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bed 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bed 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bed 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
18_Bed 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
18_Bed 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bed 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bed 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bed 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bed 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bed 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bed 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
18_Bed 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
18_Bed 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bed 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bed 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Bed 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
18_Tea 1	-	-	-	-	0.3	-	-	-	-	-	N/A	
18_Tea 2	-	-	-	-	0.3	-	-	-	-	-	N/A	
19_Bath 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
19_Bath 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
19_Bath 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
19_Bath 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
19_Bath 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
19_Bath 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
19_Bath 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
19_Bath 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
19_Bath 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
19_Bath 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
19_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
19_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
19_Bath 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
19_Bath 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
19_Bath 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
19_Bath 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
19_Bed 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
19_Bed 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
19_Bed 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
19_Bed 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
19_Bed 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
19_Bed 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
19_Bed 7	-	-	-	-	0.1	-	-	-	-	-	N/A	

Zone name	SFP [W/(l/s)]										HR efficiency	
	ID of system type	A	B	C	D	E	F	G	H	I		
	Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
19_Bed 8		-	-	-	-	0.1	-	-	-	-	-	N/A
19_Bed 9		-	-	-	-	0.1	-	-	-	-	-	N/A
19_Bed 10		-	-	-	-	0.1	-	-	-	-	-	N/A
19_Bed 11		-	-	-	-	0.9	-	-	-	-	-	N/A
19_Bed 12		-	-	-	-	0.9	-	-	-	-	-	N/A
19_Bed 13		-	-	-	-	0.1	-	-	-	-	-	N/A
19_Bed 14		-	-	-	-	0.1	-	-	-	-	-	N/A
19_Bed 15		-	-	-	-	0.1	-	-	-	-	-	N/A
19_Bed 16		-	-	-	-	0.1	-	-	-	-	-	N/A
19_Tea 1		-	-	-	-	0.3	-	-	-	-	-	N/A
19_Tea 2		-	-	-	-	0.3	-	-	-	-	-	N/A
20_Bath 1		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bath 2		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bath 3		-	-	-	-	0.9	-	-	-	-	-	N/A
20_Bath 4		-	-	-	-	0.9	-	-	-	-	-	N/A
20_Bath 5		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bath 6		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bath 7		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bath 8		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bath 9		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bath 10		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bath 11		-	-	-	-	0.9	-	-	-	-	-	N/A
20_Bath 12		-	-	-	-	0.9	-	-	-	-	-	N/A
20_Bath 13		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bath 14		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bath 15		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bath 16		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bed 1		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bed 2		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bed 3		-	-	-	-	0.9	-	-	-	-	-	N/A
20_Bed 4		-	-	-	-	0.9	-	-	-	-	-	N/A
20_Bed 5		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bed 6		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bed 7		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bed 8		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bed 9		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bed 10		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bed 11		-	-	-	-	0.9	-	-	-	-	-	N/A
20_Bed 12		-	-	-	-	0.9	-	-	-	-	-	N/A
20_Bed 13		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bed 14		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bed 15		-	-	-	-	0.1	-	-	-	-	-	N/A
20_Bed 16		-	-	-	-	0.1	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
20_Tea 1	-	-	-	-	0.3	-	-	-	-	-	N/A	
20_Tea 2	-	-	-	-	0.3	-	-	-	-	-	N/A	
21_Bath 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bath 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bath 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
21_Bath 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
21_Bath 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bath 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bath 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bath 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bath 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bath 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
21_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
21_Bath 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bath 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bath 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bath 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bed 1	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bed 2	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bed 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
21_Bed 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
21_Bed 5	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bed 6	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bed 7	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bed 8	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bed 9	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bed 10	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bed 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
21_Bed 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
21_Bed 13	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bed 14	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bed 15	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Bed 16	-	-	-	-	0.1	-	-	-	-	-	N/A	
21_Tea 1	-	-	-	-	0.3	-	-	-	-	-	N/A	
21_Tea 2	-	-	-	-	0.3	-	-	-	-	-	N/A	
22_Bath 1	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bath 2	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bath 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bath 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bath 5	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bath 6	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bath 7	-	-	-	-	0.9	-	-	-	-	-	N/A	

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
22_Bath 8	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bath 9	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bath 10	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bath 13	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bath 14	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bath 15	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bath 16	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bed 1	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bed 2	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bed 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bed 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bed 5	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bed 6	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bed 7	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bed 8	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bed 9	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bed 10	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bed 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bed 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bed 13	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bed 14	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bed 15	-	-	-	-	0.9	-	-	-	-	-	N/A	
22_Bed 16	-	-	-	-	0.9	-	-	-	-	-	N/A	
23_Bath 1	-	-	-	-	0.9	-	-	-	-	-	N/A	
23_Bath 2	-	-	-	-	0.9	-	-	-	-	-	N/A	
23_Bath 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
23_Bath 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
23_Bath 5	-	-	-	-	0.9	-	-	-	-	-	N/A	
23_Bath 6	-	-	-	-	0.9	-	-	-	-	-	N/A	
23_Bath 7	-	-	-	-	0.9	-	-	-	-	-	N/A	
23_Bath 8	-	-	-	-	0.9	-	-	-	-	-	N/A	
23_Bath 9	-	-	-	-	0.9	-	-	-	-	-	N/A	
23_Bath 10	-	-	-	-	0.9	-	-	-	-	-	N/A	
23_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
23_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
23_Bath 13	-	-	-	-	0.9	-	-	-	-	-	N/A	
23_Bath 14	-	-	-	-	0.9	-	-	-	-	-	N/A	
23_Bath 15	-	-	-	-	0.9	-	-	-	-	-	N/A	
23_Bath 16	-	-	-	-	0.9	-	-	-	-	-	N/A	
23_Bed 1	-	-	-	-	0.9	-	-	-	-	-	N/A	
23_Bed 2	-	-	-	-	0.9	-	-	-	-	-	N/A	

Zone name	SFP [W/(l/s)]										HR efficiency	
	ID of system type	A	B	C	D	E	F	G	H	I		
	Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
23_Bed 3		-	-	-	-	0.9	-	-	-	-	-	N/A
23_Bed 4		-	-	-	-	0.9	-	-	-	-	-	N/A
23_Bed 5		-	-	-	-	0.9	-	-	-	-	-	N/A
23_Bed 6		-	-	-	-	0.9	-	-	-	-	-	N/A
23_Bed 7		-	-	-	-	0.9	-	-	-	-	-	N/A
23_Bed 8		-	-	-	-	0.9	-	-	-	-	-	N/A
23_Bed 9		-	-	-	-	0.9	-	-	-	-	-	N/A
23_Bed 10		-	-	-	-	0.9	-	-	-	-	-	N/A
23_Bed 11		-	-	-	-	0.9	-	-	-	-	-	N/A
23_Bed 12		-	-	-	-	0.9	-	-	-	-	-	N/A
23_Bed 13		-	-	-	-	0.9	-	-	-	-	-	N/A
23_Bed 14		-	-	-	-	0.9	-	-	-	-	-	N/A
23_Bed 15		-	-	-	-	0.9	-	-	-	-	-	N/A
23_Bed 16		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bath 1		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bath 2		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bath 3		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bath 4		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bath 5		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bath 6		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bath 7		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bath 8		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bath 9		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bath 10		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bath 11		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bath 12		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bath 13		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bath 14		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bath 15		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bath 16		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bed 1		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bed 2		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bed 3		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bed 4		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bed 5		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bed 6		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bed 7		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bed 8		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bed 9		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bed 10		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bed 11		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bed 12		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bed 13		-	-	-	-	0.9	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]										HR efficiency	
	ID of system type	A	B	C	D	E	F	G	H	I		
	Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
24_Bed 14		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bed 15		-	-	-	-	0.9	-	-	-	-	-	N/A
24_Bed 16		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bath 1		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bath 2		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bath 3		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bath 4		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bath 5		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bath 6		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bath 7		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bath 8		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bath 9		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bath 10		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bath 11		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bath 12		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bath 13		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bath 14		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bath 15		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bath 16		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bed 1		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bed 2		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bed 3		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bed 4		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bed 5		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bed 6		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bed 7		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bed 8		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bed 9		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bed 10		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bed 11		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bed 12		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bed 13		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bed 14		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bed 15		-	-	-	-	0.9	-	-	-	-	-	N/A
25_Bed 16		-	-	-	-	0.9	-	-	-	-	-	N/A
26_Bath 1		-	-	-	-	0.9	-	-	-	-	-	N/A
26_Bath 2		-	-	-	-	0.9	-	-	-	-	-	N/A
26_Bath 3		-	-	-	-	0.9	-	-	-	-	-	N/A
26_Bath 4		-	-	-	-	0.9	-	-	-	-	-	N/A
26_Bath 5		-	-	-	-	0.9	-	-	-	-	-	N/A
26_Bath 6		-	-	-	-	0.9	-	-	-	-	-	N/A
26_Bath 7		-	-	-	-	0.9	-	-	-	-	-	N/A
26_Bath 8		-	-	-	-	0.9	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
26_Bath 9	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bath 10	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bath 13	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bath 14	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bath 15	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bath 16	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bed 1	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bed 2	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bed 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bed 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bed 5	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bed 6	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bed 7	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bed 8	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bed 9	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bed 10	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bed 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bed 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bed 13	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bed 14	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bed 15	-	-	-	-	0.9	-	-	-	-	-	N/A	
26_Bed 16	-	-	-	-	0.9	-	-	-	-	-	N/A	
27_Bath 1	-	-	-	-	0.9	-	-	-	-	-	N/A	
27_Bath 2	-	-	-	-	0.9	-	-	-	-	-	N/A	
27_Bath 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
27_Bath 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
27_Bath 5	-	-	-	-	0.9	-	-	-	-	-	N/A	
27_Bath 6	-	-	-	-	0.9	-	-	-	-	-	N/A	
27_Bath 7	-	-	-	-	0.9	-	-	-	-	-	N/A	
27_Bath 8	-	-	-	-	0.9	-	-	-	-	-	N/A	
27_Bath 9	-	-	-	-	0.9	-	-	-	-	-	N/A	
27_Bath 10	-	-	-	-	0.9	-	-	-	-	-	N/A	
27_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
27_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
27_Bath 13	-	-	-	-	0.9	-	-	-	-	-	N/A	
27_Bath 14	-	-	-	-	0.9	-	-	-	-	-	N/A	
27_Bath 15	-	-	-	-	0.9	-	-	-	-	-	N/A	
27_Bath 16	-	-	-	-	0.9	-	-	-	-	-	N/A	
27_Bed 1	-	-	-	-	0.9	-	-	-	-	-	N/A	
27_Bed 2	-	-	-	-	0.9	-	-	-	-	-	N/A	
27_Bed 3	-	-	-	-	0.9	-	-	-	-	-	N/A	

Zone name	SFP [W/(l/s)]										HR efficiency	
	ID of system type	A	B	C	D	E	F	G	H	I		
	Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
27_Bed 4		-	-	-	-	0.9	-	-	-	-	-	N/A
27_Bed 5		-	-	-	-	0.9	-	-	-	-	-	N/A
27_Bed 6		-	-	-	-	0.9	-	-	-	-	-	N/A
27_Bed 7		-	-	-	-	0.9	-	-	-	-	-	N/A
27_Bed 8		-	-	-	-	0.9	-	-	-	-	-	N/A
27_Bed 9		-	-	-	-	0.9	-	-	-	-	-	N/A
27_Bed 10		-	-	-	-	0.9	-	-	-	-	-	N/A
27_Bed 11		-	-	-	-	0.9	-	-	-	-	-	N/A
27_Bed 12		-	-	-	-	0.9	-	-	-	-	-	N/A
27_Bed 13		-	-	-	-	0.9	-	-	-	-	-	N/A
27_Bed 14		-	-	-	-	0.9	-	-	-	-	-	N/A
27_Bed 15		-	-	-	-	0.9	-	-	-	-	-	N/A
27_Bed 16		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bath 1		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bath 2		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bath 3		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bath 4		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bath 5		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bath 6		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bath 7		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bath 8		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bath 9		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bath 10		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bath 11		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bath 12		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bath 13		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bath 14		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bath 15		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bath 16		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bed 1		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bed 2		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bed 3		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bed 4		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bed 5		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bed 6		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bed 7		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bed 8		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bed 9		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bed 10		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bed 11		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bed 12		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bed 13		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bed 14		-	-	-	-	0.9	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]										HR efficiency	
	ID of system type	A	B	C	D	E	F	G	H	I		
	Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
28_Bed 15		-	-	-	-	0.9	-	-	-	-	-	N/A
28_Bed 16		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bath 1		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bath 2		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bath 3		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bath 4		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bath 5		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bath 6		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bath 7		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bath 8		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bath 9		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bath 10		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bath 11		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bath 12		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bath 13		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bath 14		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bath 15		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bath 16		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bed 1		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bed 2		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bed 3		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bed 4		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bed 5		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bed 6		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bed 7		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bed 8		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bed 9		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bed 10		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bed 11		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bed 12		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bed 13		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bed 14		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bed 15		-	-	-	-	0.9	-	-	-	-	-	N/A
29_Bed 16		-	-	-	-	0.9	-	-	-	-	-	N/A
30_Bath 1		-	-	-	-	0.9	-	-	-	-	-	N/A
30_Bath 2		-	-	-	-	0.9	-	-	-	-	-	N/A
30_Bath 3		-	-	-	-	0.9	-	-	-	-	-	N/A
30_Bath 4		-	-	-	-	0.9	-	-	-	-	-	N/A
30_Bath 5		-	-	-	-	0.9	-	-	-	-	-	N/A
30_Bath 6		-	-	-	-	0.9	-	-	-	-	-	N/A
30_Bath 7		-	-	-	-	0.9	-	-	-	-	-	N/A
30_Bath 8		-	-	-	-	0.9	-	-	-	-	-	N/A
30_Bath 9		-	-	-	-	0.9	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
30_Bath 10	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bath 13	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bath 14	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bath 15	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bath 16	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bed 1	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bed 2	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bed 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bed 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bed 5	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bed 6	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bed 7	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bed 8	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bed 9	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bed 10	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bed 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bed 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bed 13	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bed 14	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bed 15	-	-	-	-	0.9	-	-	-	-	-	N/A	
30_Bed 16	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bath 1	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bath 2	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bath 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bath 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bath 5	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bath 6	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bath 7	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bath 8	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bath 9	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bath 10	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bath 13	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bath 14	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bed 1	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bed 2	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bed 3	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bed 4	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bed 5	-	-	-	-	0.9	-	-	-	-	-	N/A	
31_Bed 6	-	-	-	-	0.9	-	-	-	-	-	N/A	

Zone name	SFP [W/(l/s)]										HR efficiency	
	ID of system type	A	B	C	D	E	F	G	H	I		
	Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
31_Bed 7		-	-	-	-	0.9	-	-	-	-	-	N/A
31_Bed 8		-	-	-	-	0.9	-	-	-	-	-	N/A
31_Bed 9		-	-	-	-	0.9	-	-	-	-	-	N/A
31_Bed 10		-	-	-	-	0.9	-	-	-	-	-	N/A
31_Bed 11		-	-	-	-	0.9	-	-	-	-	-	N/A
31_Bed 12		-	-	-	-	0.9	-	-	-	-	-	N/A
31_Bed 13		-	-	-	-	0.9	-	-	-	-	-	N/A
31_Bed 14		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bath 1		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bath 2		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bath 3		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bath 4		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bath 5		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bath 6		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bath 7		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bath 8		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bath 9		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bath 10		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bath 11		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bath 12		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bath 13		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bath 14		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bed 1		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bed 2		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bed 3		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bed 4		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bed 5		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bed 6		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bed 7		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bed 8		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bed 9		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bed 10		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bed 11		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bed 12		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bed 13		-	-	-	-	0.9	-	-	-	-	-	N/A
32_Bed 14		-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bath 1		-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bath 2		-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bath 3		-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bath 4		-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bath 5		-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bath 6		-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bath 7		-	-	-	-	0.9	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
33_Bath 8	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bath 9	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bath 10	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bath 11	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bath 12	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bath 13	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bath 14	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bed 1	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bed 2	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bed 3	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bed 4	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bed 5	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bed 6	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bed 7	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bed 8	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bed 9	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bed 10	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bed 11	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bed 12	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bed 13	-	-	-	-	0.9	-	-	-	-	-	N/A
33_Bed 14	-	-	-	-	0.9	-	-	-	-	-	N/A

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
-01_Circulation 1		100	-	-
-01_Circulation 2		100	-	-
-01_Circulation 3		100	-	-
-01_Circulation 4		100	-	-
-01_Circulation 5		100	-	-
-01_Circulation 6		100	-	-
-01_Circulation 7		100	-	-
-01_Circulation 8		100	-	-
-01_Circulation 9		100	-	-
-01_Gallery		95	-	-
-01_Lounge - Perimeter		95	-	-
-01_Lounge - Non-Perimeter		95	-	-
-01_Games		95	-	-
-01_Multi-Media Lounge		95	-	-
-01_Refuse Bay		110	-	-
-01_Store		110	-	-
-01_Comms		95	-	-
00_Circulation 1		100	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
00_Circulation 2		100	-	-
00_Circulation 3		100	-	-
00_Circulation 4		100	-	-
00_Circulation 5		100	-	-
00_Circulation 6		100	-	-
00_Circulation 7		100	-	-
00_Circulation 9		100	-	-
00_Circulation 10		100	-	-
00_Circulation 11		100	-	-
00_Circulation 12		100	-	-
00_Gallery - Perimeter 1		95	-	-
00_Gallery - Perimeter 2		95	-	-
00_Gallery - Non-Perimeter		95	-	-
00_Residents' Lounge - Perimeter		95	-	-
00_Residents' Lounge - Non-Perimeter		95	-	-
00_Study - Perimeter		110	-	-
00_Study - Non-Perimeter		110	-	-
00_Study Room - Large		110	-	-
00_Study Room - Small		110	-	-
00_Café		95	-	-
00_Kitchen		95	-	-
00_Welfare		110	-	-
00_Reception		95	95	-
00_Lobby		95	95	-
00_Parcel Room		110	-	-
00_Store		110	-	-
00_Toilet 1		95	-	-
00_Toilet 2		95	-	-
00_Toilet 3		95	-	-
00_Toilet 4		95	-	-
-01_Cycle Store		110	-	-
-01_Cinema		95	-	-
-01_Plant - Perimeter		110	-	-
-01_Plant - Non-Perimeter		110	-	-
01_Bath 1		95	-	-
01_Bath 2		95	-	-
01_Bath 3		95	-	-
01_Bath 4		95	-	-
01_Bath 5		95	-	-
01_Bath 6		95	-	-
01_Bath 7		95	-	-
01_Bath 8		95	-	-
01_Bath 9		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
01_Bath 10		95	-	-
01_Bath 11		95	-	-
01_Bath 12		95	-	-
01_Bath 13		95	-	-
01_Bath 14		95	-	-
01_Bath 15		95	-	-
01_Bath 16		95	-	-
01_Bath 17		95	-	-
01_Bath 18		95	-	-
01_Bath 19		95	-	-
01_Bath 20		95	-	-
01_Bath 21		95	-	-
01_Bath 22		95	-	-
01_Bath 23		95	-	-
01_Bed 1		110	-	-
01_Bed 2		110	-	-
01_Bed 3		110	-	-
01_Bed 4		110	-	-
01_Bed 5		110	-	-
01_Bed 6		110	-	-
01_Bed 7		110	-	-
01_Bed 8		110	-	-
01_Bed 9		110	-	-
01_Bed 10		110	-	-
01_Bed 11		110	-	-
01_Bed 12		110	-	-
01_Bed 13		110	-	-
01_Bed 14		110	-	-
01_Bed 15		110	-	-
01_Bed 16		110	-	-
01_Bed 17		110	-	-
01_Bed 18		110	-	-
01_Bed 19		110	-	-
01_Bed 20		110	-	-
01_Bed 21		110	-	-
01_Bed 22		110	-	-
01_Bed 23		110	-	-
01_Circulation 1		100	-	-
01_Circulation 2		100	-	-
01_Circulation 3		100	-	-
01_Circulation 4		100	-	-
01_Circulation 5		100	-	-
01_Circulation 6		100	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
01_Circulation 7		100	-	-
01_Circulation 8		100	-	-
01_Circulation 9		100	-	-
01_Circulation 10		100	-	-
01_Circulation 11		100	-	-
01_Tea 1 - Perimeter		100	-	-
01_Tea 1 - Non-Perimeter		100	-	-
01_Tea 2		100	-	-
01_Tea 3		100	-	-
01_Tea 4 - Perimeter		100	-	-
01_Tea 4 - Non-Perimeter		100	-	-
02_Bath 1		95	-	-
02_Bath 2		95	-	-
02_Bath 3		95	-	-
02_Bath 4		95	-	-
02_Bath 5		95	-	-
02_Bath 6		95	-	-
02_Bath 7		95	-	-
02_Bath 8		95	-	-
02_Bath 9		95	-	-
02_Bath 10		95	-	-
02_Bath 11		95	-	-
02_Bath 12		95	-	-
02_Bath 13		95	-	-
02_Bath 14		95	-	-
02_Bath 15		95	-	-
02_Bath 16		95	-	-
02_Bath 17		95	-	-
02_Bath 18		95	-	-
02_Bath 19		95	-	-
02_Bath 20		95	-	-
02_Bath 21		95	-	-
02_Bath 22		95	-	-
02_Bath 23		95	-	-
02_Bed 1		110	-	-
02_Bed 2		110	-	-
02_Bed 3		110	-	-
02_Bed 4		110	-	-
02_Bed 5		110	-	-
02_Bed 6		110	-	-
02_Bed 7		110	-	-
02_Bed 8		110	-	-
02_Bed 9		110	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
02_Bed 10		110	-	-
02_Bed 11		110	-	-
02_Bed 12		110	-	-
02_Bed 13		110	-	-
02_Bed 14		110	-	-
02_Bed 15		110	-	-
02_Bed 16		110	-	-
02_Bed 17		110	-	-
02_Bed 18		110	-	-
02_Bed 19		110	-	-
02_Bed 20		110	-	-
02_Bed 21		110	-	-
02_Bed 22		110	-	-
02_Bed 23		110	-	-
02_Circulation 1		100	-	-
02_Circulation 2		100	-	-
02_Circulation 3		100	-	-
02_Circulation 4		100	-	-
02_Circulation 5		100	-	-
02_Circulation 6		100	-	-
02_Circulation 7		100	-	-
02_Circulation 8		100	-	-
02_Circulation 9		100	-	-
02_Circulation 10		100	-	-
02_Circulation 11		100	-	-
02_Tea 1 - Perimeter		100	-	-
02_Tea 1 - Non-Perimeter		100	-	-
02_Tea 2		100	-	-
02_Tea 3		100	-	-
02_Tea 4 - Perimeter		100	-	-
02_Tea 4 - Non-Perimeter		100	-	-
03_Bath 1		95	-	-
03_Bath 2		95	-	-
03_Bath 3		95	-	-
03_Bath 4		95	-	-
03_Bath 5		95	-	-
03_Bath 6		95	-	-
03_Bath 7		95	-	-
03_Bath 8		95	-	-
03_Bath 9		95	-	-
03_Bath 10		95	-	-
03_Bath 11		95	-	-
03_Bath 12		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
03_Bath 13		95	-	-
03_Bath 14		95	-	-
03_Bath 15		95	-	-
03_Bath 16		95	-	-
03_Bath 17		95	-	-
03_Bath 18		95	-	-
03_Bath 19		95	-	-
03_Bed 1		110	-	-
03_Bed 2		110	-	-
03_Bed 3		110	-	-
03_Bed 4		110	-	-
03_Bed 5		110	-	-
03_Bed 6		110	-	-
03_Bed 7		110	-	-
03_Bed 8		110	-	-
03_Bed 9		110	-	-
03_Bed 10		110	-	-
03_Bed 11		110	-	-
03_Bed 12		110	-	-
03_Bed 13		110	-	-
03_Bed 14		110	-	-
03_Bed 15		110	-	-
03_Bed 16		110	-	-
03_Bed 17		110	-	-
03_Bed 18		110	-	-
03_Bed 19		110	-	-
03_Circulation 1		100	-	-
03_Circulation 2		100	-	-
03_Circulation 3		100	-	-
03_Circulation 4		100	-	-
03_Circulation 5		100	-	-
03_Circulation 6		100	-	-
03_Circulation 7		100	-	-
03_Circulation 8		100	-	-
03_Circulation 9		100	-	-
03_Circulation 10		100	-	-
03_Indoor Terrace		95	-	-
03_Tea 1		100	-	-
03_Tea 2		100	-	-
03_Tea 3		100	-	-
04_Bath 1		95	-	-
04_Bath 2		95	-	-
04_Bath 3		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
04_Bath 4		95	-	-
04_Bath 5		95	-	-
04_Bath 6		95	-	-
04_Bath 7		95	-	-
04_Bath 8		95	-	-
04_Bath 9		95	-	-
04_Bath 10		95	-	-
04_Bath 11		95	-	-
04_Bath 12		95	-	-
04_Bath 13		95	-	-
04_Bath 14		95	-	-
04_Bath 15		95	-	-
04_Bath 16		95	-	-
04_Bed 1		110	-	-
04_Bed 2		110	-	-
04_Bed 3		110	-	-
04_Bed 4		110	-	-
04_Bed 5		110	-	-
04_Bed 6		110	-	-
04_Bed 7		110	-	-
04_Bed 8		110	-	-
04_Bed 9		110	-	-
04_Bed 10		110	-	-
04_Bed 11		110	-	-
04_Bed 12		110	-	-
04_Bed 13		110	-	-
04_Bed 14		110	-	-
04_Bed 15		110	-	-
04_Bed 16		110	-	-
04_Circulation 1		100	-	-
04_Circulation 2		100	-	-
04_Circulation 3		100	-	-
04_Circulation 4		100	-	-
04_Circulation 5		100	-	-
04_Circulation 6		100	-	-
04_Circulation 7		100	-	-
04_Circulation 8		100	-	-
04_Circulation 9		100	-	-
04_Tea 1		100	-	-
04_Tea 2		100	-	-
05_Bath 1		95	-	-
05_Bath 2		95	-	-
05_Bath 3		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
05_Bath 4		95	-	-
05_Bath 5		95	-	-
05_Bath 6		95	-	-
05_Bath 7		95	-	-
05_Bath 8		95	-	-
05_Bath 9		95	-	-
05_Bath 10		95	-	-
05_Bath 11		95	-	-
05_Bath 12		95	-	-
05_Bath 13		95	-	-
05_Bath 14		95	-	-
05_Bath 15		95	-	-
05_Bath 16		95	-	-
05_Bed 1		110	-	-
05_Bed 2		110	-	-
05_Bed 3		110	-	-
05_Bed 4		110	-	-
05_Bed 5		110	-	-
05_Bed 6		110	-	-
05_Bed 7		110	-	-
05_Bed 8		110	-	-
05_Bed 9		110	-	-
05_Bed 10		110	-	-
05_Bed 11		110	-	-
05_Bed 12		110	-	-
05_Bed 13		110	-	-
05_Bed 14		110	-	-
05_Bed 15		110	-	-
05_Bed 16		110	-	-
05_Circulation 1		100	-	-
05_Circulation 2		100	-	-
05_Circulation 3		100	-	-
05_Circulation 4		100	-	-
05_Circulation 5		100	-	-
05_Circulation 6		100	-	-
05_Circulation 7		100	-	-
05_Circulation 8		100	-	-
05_Circulation 9		100	-	-
05_Tea 1		100	-	-
05_Tea 2		100	-	-
06_Bath 1		95	-	-
06_Bath 2		95	-	-
06_Bath 3		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
06_Bath 4		95	-	-
06_Bath 5		95	-	-
06_Bath 6		95	-	-
06_Bath 7		95	-	-
06_Bath 8		95	-	-
06_Bath 9		95	-	-
06_Bath 10		95	-	-
06_Bath 11		95	-	-
06_Bath 12		95	-	-
06_Bath 13		95	-	-
06_Bath 14		95	-	-
06_Bath 15		95	-	-
06_Bath 16		95	-	-
06_Bed 1		110	-	-
06_Bed 2		110	-	-
06_Bed 3		110	-	-
06_Bed 4		110	-	-
06_Bed 5		110	-	-
06_Bed 6		110	-	-
06_Bed 7		110	-	-
06_Bed 8		110	-	-
06_Bed 9		110	-	-
06_Bed 10		110	-	-
06_Bed 11		110	-	-
06_Bed 12		110	-	-
06_Bed 13		110	-	-
06_Bed 14		110	-	-
06_Bed 15		110	-	-
06_Bed 16		110	-	-
06_Circulation 1		100	-	-
06_Circulation 2		100	-	-
06_Circulation 3		100	-	-
06_Circulation 4		100	-	-
06_Circulation 5		100	-	-
06_Circulation 6		100	-	-
06_Circulation 7		100	-	-
06_Circulation 8		100	-	-
06_Circulation 9		100	-	-
06_Tea 1		100	-	-
06_Tea 2		100	-	-
07_Bath 1		95	-	-
07_Bath 2		95	-	-
07_Bath 3		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
07_Bath 4		95	-	-
07_Bath 5		95	-	-
07_Bath 6		95	-	-
07_Bath 7		95	-	-
07_Bath 8		95	-	-
07_Bath 9		95	-	-
07_Bath 10		95	-	-
07_Bath 11		95	-	-
07_Bath 12		95	-	-
07_Bath 13		95	-	-
07_Bath 14		95	-	-
07_Bath 15		95	-	-
07_Bath 16		95	-	-
07_Bed 1		110	-	-
07_Bed 2		110	-	-
07_Bed 3		110	-	-
07_Bed 4		110	-	-
07_Bed 5		110	-	-
07_Bed 6		110	-	-
07_Bed 7		110	-	-
07_Bed 8		110	-	-
07_Bed 9		110	-	-
07_Bed 10		110	-	-
07_Bed 11		110	-	-
07_Bed 12		110	-	-
07_Bed 13		110	-	-
07_Bed 14		110	-	-
07_Bed 15		110	-	-
07_Bed 16		110	-	-
07_Circulation 1		100	-	-
07_Circulation 2		100	-	-
07_Circulation 3		100	-	-
07_Circulation 4		100	-	-
07_Circulation 5		100	-	-
07_Circulation 6		100	-	-
07_Circulation 7		100	-	-
07_Circulation 8		100	-	-
07_Circulation 9		100	-	-
07_Tea 1		100	-	-
07_Tea 2		100	-	-
08_Bath 1		95	-	-
08_Bath 2		95	-	-
08_Bath 3		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
08_Bath 4		95	-	-
08_Bath 5		95	-	-
08_Bath 6		95	-	-
08_Bath 7		95	-	-
08_Bath 8		95	-	-
08_Bath 9		95	-	-
08_Bath 10		95	-	-
08_Bath 11		95	-	-
08_Bath 12		95	-	-
08_Bath 13		95	-	-
08_Bath 14		95	-	-
08_Bath 15		95	-	-
08_Bath 16		95	-	-
08_Bed 1		110	-	-
08_Bed 2		110	-	-
08_Bed 3		110	-	-
08_Bed 4		110	-	-
08_Bed 5		110	-	-
08_Bed 6		110	-	-
08_Bed 7		110	-	-
08_Bed 8		110	-	-
08_Bed 9		110	-	-
08_Bed 10		110	-	-
08_Bed 11		110	-	-
08_Bed 12		110	-	-
08_Bed 13		110	-	-
08_Bed 14		110	-	-
08_Bed 15		110	-	-
08_Bed 16		110	-	-
08_Circulation 1		100	-	-
08_Circulation 2		100	-	-
08_Circulation 3		100	-	-
08_Circulation 4		100	-	-
08_Circulation 5		100	-	-
08_Circulation 6		100	-	-
08_Circulation 7		100	-	-
08_Circulation 8		100	-	-
08_Circulation 9		100	-	-
08_Tea 1		100	-	-
08_Tea 2		100	-	-
09_Bath 1		95	-	-
09_Bath 2		95	-	-
09_Bath 3		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
09_Bath 4		95	-	-
09_Bath 5		95	-	-
09_Bath 6		95	-	-
09_Bath 7		95	-	-
09_Bath 8		95	-	-
09_Bath 9		95	-	-
09_Bath 10		95	-	-
09_Bath 11		95	-	-
09_Bath 12		95	-	-
09_Bath 13		95	-	-
09_Bath 14		95	-	-
09_Bath 15		95	-	-
09_Bath 16		95	-	-
09_Bed 1		110	-	-
09_Bed 2		110	-	-
09_Bed 3		110	-	-
09_Bed 4		110	-	-
09_Bed 5		110	-	-
09_Bed 6		110	-	-
09_Bed 7		110	-	-
09_Bed 8		110	-	-
09_Bed 9		110	-	-
09_Bed 10		110	-	-
09_Bed 11		110	-	-
09_Bed 12		110	-	-
09_Bed 13		110	-	-
09_Bed 14		110	-	-
09_Bed 15		110	-	-
09_Bed 16		110	-	-
09_Circulation 1		100	-	-
09_Circulation 2		100	-	-
09_Circulation 3		100	-	-
09_Circulation 4		100	-	-
09_Circulation 5		100	-	-
09_Circulation 6		100	-	-
09_Circulation 7		100	-	-
09_Circulation 8		100	-	-
09_Circulation 9		100	-	-
09_Tea 1		100	-	-
09_Tea 2		100	-	-
10_Bath 1		95	-	-
10_Bath 2		95	-	-
10_Bath 3		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
10_Bath 4		95	-	-
10_Bath 5		95	-	-
10_Bath 6		95	-	-
10_Bath 7		95	-	-
10_Bath 8		95	-	-
10_Bath 9		95	-	-
10_Bath 10		95	-	-
10_Bath 11		95	-	-
10_Bath 12		95	-	-
10_Bath 13		95	-	-
10_Bath 14		95	-	-
10_Bath 15		95	-	-
10_Bath 16		95	-	-
10_Bed 1		110	-	-
10_Bed 2		110	-	-
10_Bed 3		110	-	-
10_Bed 4		110	-	-
10_Bed 5		110	-	-
10_Bed 6		110	-	-
10_Bed 7		110	-	-
10_Bed 8		110	-	-
10_Bed 9		110	-	-
10_Bed 10		110	-	-
10_Bed 11		110	-	-
10_Bed 12		110	-	-
10_Bed 13		110	-	-
10_Bed 14		110	-	-
10_Bed 15		110	-	-
10_Bed 16		110	-	-
10_Circulation 1		100	-	-
10_Circulation 2		100	-	-
10_Circulation 3		100	-	-
10_Circulation 4		100	-	-
10_Circulation 5		100	-	-
10_Circulation 6		100	-	-
10_Circulation 7		100	-	-
10_Circulation 8		100	-	-
10_Circulation 9		100	-	-
10_Tea 1		100	-	-
10_Tea 2		100	-	-
11_Bath 1		95	-	-
11_Bath 2		95	-	-
11_Bath 3		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
11_Bath 4		95	-	-
11_Bath 5		95	-	-
11_Bath 6		95	-	-
11_Bath 7		95	-	-
11_Bath 8		95	-	-
11_Bath 9		95	-	-
11_Bath 10		95	-	-
11_Bath 11		95	-	-
11_Bath 12		95	-	-
11_Bath 13		95	-	-
11_Bath 14		95	-	-
11_Bath 15		95	-	-
11_Bath 16		95	-	-
11_Bed 1		110	-	-
11_Bed 2		110	-	-
11_Bed 3		110	-	-
11_Bed 4		110	-	-
11_Bed 5		110	-	-
11_Bed 6		110	-	-
11_Bed 7		110	-	-
11_Bed 8		110	-	-
11_Bed 9		110	-	-
11_Bed 10		110	-	-
11_Bed 11		110	-	-
11_Bed 12		110	-	-
11_Bed 13		110	-	-
11_Bed 14		110	-	-
11_Bed 15		110	-	-
11_Bed 16		110	-	-
11_Circulation 1		100	-	-
11_Circulation 2		100	-	-
11_Circulation 3		100	-	-
11_Circulation 4		100	-	-
11_Circulation 5		100	-	-
11_Circulation 6		100	-	-
11_Circulation 7		100	-	-
11_Circulation 8		100	-	-
11_Circulation 9		100	-	-
11_Tea 1		100	-	-
11_Tea 2		100	-	-
12_Bath 1		95	-	-
12_Bath 2		95	-	-
12_Bath 3		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
12_Bath 4		95	-	-
12_Bath 5		95	-	-
12_Bath 6		95	-	-
12_Bath 7		95	-	-
12_Bath 8		95	-	-
12_Bath 9		95	-	-
12_Bath 10		95	-	-
12_Bath 11		95	-	-
12_Bath 12		95	-	-
12_Bath 13		95	-	-
12_Bath 14		95	-	-
12_Bath 15		95	-	-
12_Bath 16		95	-	-
12_Bed 1		110	-	-
12_Bed 2		110	-	-
12_Bed 3		110	-	-
12_Bed 4		110	-	-
12_Bed 5		110	-	-
12_Bed 6		110	-	-
12_Bed 7		110	-	-
12_Bed 8		110	-	-
12_Bed 9		110	-	-
12_Bed 10		110	-	-
12_Bed 11		110	-	-
12_Bed 12		110	-	-
12_Bed 13		110	-	-
12_Bed 14		110	-	-
12_Bed 15		110	-	-
12_Bed 16		110	-	-
12_Circulation 1		100	-	-
12_Circulation 2		100	-	-
12_Circulation 3		100	-	-
12_Circulation 4		100	-	-
12_Circulation 5		100	-	-
12_Circulation 6		100	-	-
12_Circulation 7		100	-	-
12_Circulation 8		100	-	-
12_Circulation 9		100	-	-
12_Tea 1		100	-	-
12_Tea 2		100	-	-
13_Bath 1		95	-	-
13_Bath 2		95	-	-
13_Bath 3		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
13_Bath 4		95	-	-
13_Bath 5		95	-	-
13_Bath 6		95	-	-
13_Bath 7		95	-	-
13_Bath 8		95	-	-
13_Bath 9		95	-	-
13_Bath 10		95	-	-
13_Bath 11		95	-	-
13_Bath 12		95	-	-
13_Bath 13		95	-	-
13_Bath 14		95	-	-
13_Bath 15		95	-	-
13_Bath 16		95	-	-
13_Bed 1		110	-	-
13_Bed 2		110	-	-
13_Bed 3		110	-	-
13_Bed 4		110	-	-
13_Bed 5		110	-	-
13_Bed 6		110	-	-
13_Bed 7		110	-	-
13_Bed 8		110	-	-
13_Bed 9		110	-	-
13_Bed 10		110	-	-
13_Bed 11		110	-	-
13_Bed 12		110	-	-
13_Bed 13		110	-	-
13_Bed 14		110	-	-
13_Bed 15		110	-	-
13_Bed 16		110	-	-
13_Circulation 1		100	-	-
13_Circulation 2		100	-	-
13_Circulation 3		100	-	-
13_Circulation 4		100	-	-
13_Circulation 5		100	-	-
13_Circulation 6		100	-	-
13_Circulation 7		100	-	-
13_Circulation 8		100	-	-
13_Circulation 9		100	-	-
13_Tea 1		100	-	-
13_Tea 2		100	-	-
14_Bath 1		95	-	-
14_Bath 2		95	-	-
14_Bath 3		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
14_Bath 4		95	-	-
14_Bath 5		95	-	-
14_Bath 6		95	-	-
14_Bath 7		95	-	-
14_Bath 8		95	-	-
14_Bath 9		95	-	-
14_Bath 10		95	-	-
14_Bath 11		95	-	-
14_Bath 12		95	-	-
14_Bath 13		95	-	-
14_Bath 14		95	-	-
14_Bath 15		95	-	-
14_Bath 16		95	-	-
14_Bed 1		110	-	-
14_Bed 2		110	-	-
14_Bed 3		110	-	-
14_Bed 4		110	-	-
14_Bed 5		110	-	-
14_Bed 6		110	-	-
14_Bed 7		110	-	-
14_Bed 8		110	-	-
14_Bed 9		110	-	-
14_Bed 10		110	-	-
14_Bed 11		110	-	-
14_Bed 12		110	-	-
14_Bed 13		110	-	-
14_Bed 14		110	-	-
14_Bed 15		110	-	-
14_Bed 16		110	-	-
14_Circulation 1		100	-	-
14_Circulation 2		100	-	-
14_Circulation 3		100	-	-
14_Circulation 4		100	-	-
14_Circulation 5		100	-	-
14_Circulation 6		100	-	-
14_Circulation 7		100	-	-
14_Circulation 8		100	-	-
14_Circulation 9		100	-	-
14_Tea 1		100	-	-
14_Tea 2		100	-	-
15_Bath 1		95	-	-
15_Bath 2		95	-	-
15_Bath 3		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
15_Bath 4		95	-	-
15_Bath 5		95	-	-
15_Bath 6		95	-	-
15_Bath 7		95	-	-
15_Bath 8		95	-	-
15_Bath 9		95	-	-
15_Bath 10		95	-	-
15_Bath 11		95	-	-
15_Bath 12		95	-	-
15_Bath 13		95	-	-
15_Bath 14		95	-	-
15_Bath 15		95	-	-
15_Bath 16		95	-	-
15_Bed 1		110	-	-
15_Bed 2		110	-	-
15_Bed 3		110	-	-
15_Bed 4		110	-	-
15_Bed 5		110	-	-
15_Bed 6		110	-	-
15_Bed 7		110	-	-
15_Bed 8		110	-	-
15_Bed 9		110	-	-
15_Bed 10		110	-	-
15_Bed 11		110	-	-
15_Bed 12		110	-	-
15_Bed 13		110	-	-
15_Bed 14		110	-	-
15_Bed 15		110	-	-
15_Bed 16		110	-	-
15_Circulation 1		100	-	-
15_Circulation 2		100	-	-
15_Circulation 3		100	-	-
15_Circulation 4		100	-	-
15_Circulation 5		100	-	-
15_Circulation 6		100	-	-
15_Circulation 7		100	-	-
15_Circulation 8		100	-	-
15_Circulation 9		100	-	-
15_Tea 1		100	-	-
15_Tea 2		100	-	-
16_Bath 1		95	-	-
16_Bath 2		95	-	-
16_Bath 3		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
16_Bath 4		95	-	-
16_Bath 5		95	-	-
16_Bath 6		95	-	-
16_Bath 7		95	-	-
16_Bath 8		95	-	-
16_Bath 9		95	-	-
16_Bath 10		95	-	-
16_Bath 11		95	-	-
16_Bath 12		95	-	-
16_Bath 13		95	-	-
16_Bath 14		95	-	-
16_Bath 15		95	-	-
16_Bath 16		95	-	-
16_Bed 1		110	-	-
16_Bed 2		110	-	-
16_Bed 3		110	-	-
16_Bed 4		110	-	-
16_Bed 5		110	-	-
16_Bed 6		110	-	-
16_Bed 7		110	-	-
16_Bed 8		110	-	-
16_Bed 9		110	-	-
16_Bed 10		110	-	-
16_Bed 11		110	-	-
16_Bed 12		110	-	-
16_Bed 13		110	-	-
16_Bed 14		110	-	-
16_Bed 15		110	-	-
16_Bed 16		110	-	-
16_Circulation 1		100	-	-
16_Circulation 2		100	-	-
16_Circulation 3		100	-	-
16_Circulation 4		100	-	-
16_Circulation 5		100	-	-
16_Circulation 6		100	-	-
16_Circulation 7		100	-	-
16_Circulation 8		100	-	-
16_Circulation 9		100	-	-
16_Tea 1		100	-	-
16_Tea 2		100	-	-
17_Bath 1		95	-	-
17_Bath 2		95	-	-
17_Bath 3		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
17_Bath 4		95	-	-
17_Bath 5		95	-	-
17_Bath 6		95	-	-
17_Bath 7		95	-	-
17_Bath 8		95	-	-
17_Bath 9		95	-	-
17_Bath 10		95	-	-
17_Bath 11		95	-	-
17_Bath 12		95	-	-
17_Bath 13		95	-	-
17_Bath 14		95	-	-
17_Bath 15		95	-	-
17_Bath 16		95	-	-
17_Bed 1		110	-	-
17_Bed 2		110	-	-
17_Bed 3		110	-	-
17_Bed 4		110	-	-
17_Bed 5		110	-	-
17_Bed 6		110	-	-
17_Bed 7		110	-	-
17_Bed 8		110	-	-
17_Bed 9		110	-	-
17_Bed 10		110	-	-
17_Bed 11		110	-	-
17_Bed 12		110	-	-
17_Bed 13		110	-	-
17_Bed 14		110	-	-
17_Bed 15		110	-	-
17_Bed 16		110	-	-
17_Circulation 1		100	-	-
17_Circulation 2		100	-	-
17_Circulation 3		100	-	-
17_Circulation 4		100	-	-
17_Circulation 5		100	-	-
17_Circulation 6		100	-	-
17_Circulation 7		100	-	-
17_Circulation 8		100	-	-
17_Circulation 9		100	-	-
17_Tea 1		100	-	-
17_Tea 2		100	-	-
18_Bath 1		95	-	-
18_Bath 2		95	-	-
18_Bath 3		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
18_Bath 4		95	-	-
18_Bath 5		95	-	-
18_Bath 6		95	-	-
18_Bath 7		95	-	-
18_Bath 8		95	-	-
18_Bath 9		95	-	-
18_Bath 10		95	-	-
18_Bath 11		95	-	-
18_Bath 12		95	-	-
18_Bath 13		95	-	-
18_Bath 14		95	-	-
18_Bath 15		95	-	-
18_Bath 16		95	-	-
18_Bed 1		110	-	-
18_Bed 2		110	-	-
18_Bed 3		110	-	-
18_Bed 4		110	-	-
18_Bed 5		110	-	-
18_Bed 6		110	-	-
18_Bed 7		110	-	-
18_Bed 8		110	-	-
18_Bed 9		110	-	-
18_Bed 10		110	-	-
18_Bed 11		110	-	-
18_Bed 12		110	-	-
18_Bed 13		110	-	-
18_Bed 14		110	-	-
18_Bed 15		110	-	-
18_Bed 16		110	-	-
18_Circulation 1		100	-	-
18_Circulation 2		100	-	-
18_Circulation 3		100	-	-
18_Circulation 4		100	-	-
18_Circulation 5		100	-	-
18_Circulation 6		100	-	-
18_Circulation 7		100	-	-
18_Circulation 8		100	-	-
18_Circulation 9		100	-	-
18_Tea 1		100	-	-
18_Tea 2		100	-	-
19_Bath 1		95	-	-
19_Bath 2		95	-	-
19_Bath 3		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
19_Bath 4		95	-	-
19_Bath 5		95	-	-
19_Bath 6		95	-	-
19_Bath 7		95	-	-
19_Bath 8		95	-	-
19_Bath 9		95	-	-
19_Bath 10		95	-	-
19_Bath 11		95	-	-
19_Bath 12		95	-	-
19_Bath 13		95	-	-
19_Bath 14		95	-	-
19_Bath 15		95	-	-
19_Bath 16		95	-	-
19_Bed 1		110	-	-
19_Bed 2		110	-	-
19_Bed 3		110	-	-
19_Bed 4		110	-	-
19_Bed 5		110	-	-
19_Bed 6		110	-	-
19_Bed 7		110	-	-
19_Bed 8		110	-	-
19_Bed 9		110	-	-
19_Bed 10		110	-	-
19_Bed 11		110	-	-
19_Bed 12		110	-	-
19_Bed 13		110	-	-
19_Bed 14		110	-	-
19_Bed 15		110	-	-
19_Bed 16		110	-	-
19_Circulation 1		100	-	-
19_Circulation 2		100	-	-
19_Circulation 3		100	-	-
19_Circulation 4		100	-	-
19_Circulation 5		100	-	-
19_Circulation 6		100	-	-
19_Circulation 7		100	-	-
19_Circulation 8		100	-	-
19_Circulation 9		100	-	-
19_Tea 1		100	-	-
19_Tea 2		100	-	-
20_Bath 1		95	-	-
20_Bath 2		95	-	-
20_Bath 3		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
20_Bath 4		95	-	-
20_Bath 5		95	-	-
20_Bath 6		95	-	-
20_Bath 7		95	-	-
20_Bath 8		95	-	-
20_Bath 9		95	-	-
20_Bath 10		95	-	-
20_Bath 11		95	-	-
20_Bath 12		95	-	-
20_Bath 13		95	-	-
20_Bath 14		95	-	-
20_Bath 15		95	-	-
20_Bath 16		95	-	-
20_Bed 1		110	-	-
20_Bed 2		110	-	-
20_Bed 3		110	-	-
20_Bed 4		110	-	-
20_Bed 5		110	-	-
20_Bed 6		110	-	-
20_Bed 7		110	-	-
20_Bed 8		110	-	-
20_Bed 9		110	-	-
20_Bed 10		110	-	-
20_Bed 11		110	-	-
20_Bed 12		110	-	-
20_Bed 13		110	-	-
20_Bed 14		110	-	-
20_Bed 15		110	-	-
20_Bed 16		110	-	-
20_Circulation 1		100	-	-
20_Circulation 2		100	-	-
20_Circulation 3		100	-	-
20_Circulation 4		100	-	-
20_Circulation 5		100	-	-
20_Circulation 6		100	-	-
20_Circulation 7		100	-	-
20_Circulation 8		100	-	-
20_Circulation 9		100	-	-
20_Tea 1		100	-	-
20_Tea 2		100	-	-
21_Bath 1		95	-	-
21_Bath 2		95	-	-
21_Bath 3		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
21_Bath 4		95	-	-
21_Bath 5		95	-	-
21_Bath 6		95	-	-
21_Bath 7		95	-	-
21_Bath 8		95	-	-
21_Bath 9		95	-	-
21_Bath 10		95	-	-
21_Bath 11		95	-	-
21_Bath 12		95	-	-
21_Bath 13		95	-	-
21_Bath 14		95	-	-
21_Bath 15		95	-	-
21_Bath 16		95	-	-
21_Bed 1		110	-	-
21_Bed 2		110	-	-
21_Bed 3		110	-	-
21_Bed 4		110	-	-
21_Bed 5		110	-	-
21_Bed 6		110	-	-
21_Bed 7		110	-	-
21_Bed 8		110	-	-
21_Bed 9		110	-	-
21_Bed 10		110	-	-
21_Bed 11		110	-	-
21_Bed 12		110	-	-
21_Bed 13		110	-	-
21_Bed 14		110	-	-
21_Bed 15		110	-	-
21_Bed 16		110	-	-
21_Circulation 1		100	-	-
21_Circulation 2		100	-	-
21_Circulation 3		100	-	-
21_Circulation 4		100	-	-
21_Circulation 5		100	-	-
21_Circulation 6		100	-	-
21_Circulation 7		100	-	-
21_Circulation 8		100	-	-
21_Circulation 9		100	-	-
21_Tea 1		100	-	-
21_Tea 2		100	-	-
22_Bath 1		95	-	-
22_Bath 2		95	-	-
22_Bath 3		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
22_Bath 4		95	-	-
22_Bath 5		95	-	-
22_Bath 6		95	-	-
22_Bath 7		95	-	-
22_Bath 8		95	-	-
22_Bath 9		95	-	-
22_Bath 10		95	-	-
22_Bath 11		95	-	-
22_Bath 12		95	-	-
22_Bath 13		95	-	-
22_Bath 14		95	-	-
22_Bath 15		95	-	-
22_Bath 16		95	-	-
22_Bed 1		110	-	-
22_Bed 2		110	-	-
22_Bed 3		110	-	-
22_Bed 4		110	-	-
22_Bed 5		110	-	-
22_Bed 6		110	-	-
22_Bed 7		110	-	-
22_Bed 8		110	-	-
22_Bed 9		110	-	-
22_Bed 10		110	-	-
22_Bed 11		110	-	-
22_Bed 12		110	-	-
22_Bed 13		110	-	-
22_Bed 14		110	-	-
22_Bed 15		110	-	-
22_Bed 16		110	-	-
22_Circulation 1		100	-	-
22_Circulation 2		100	-	-
22_Circulation 3		100	-	-
22_Circulation 4		100	-	-
22_Circulation 5		100	-	-
22_Circulation 6		100	-	-
22_Circulation 7		100	-	-
22_Circulation 8		100	-	-
22_Circulation 9		100	-	-
23_Bath 1		95	-	-
23_Bath 2		95	-	-
23_Bath 3		95	-	-
23_Bath 4		95	-	-
23_Bath 5		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
23_Bath 6		95	-	-
23_Bath 7		95	-	-
23_Bath 8		95	-	-
23_Bath 9		95	-	-
23_Bath 10		95	-	-
23_Bath 11		95	-	-
23_Bath 12		95	-	-
23_Bath 13		95	-	-
23_Bath 14		95	-	-
23_Bath 15		95	-	-
23_Bath 16		95	-	-
23_Bed 1		110	-	-
23_Bed 2		110	-	-
23_Bed 3		110	-	-
23_Bed 4		110	-	-
23_Bed 5		110	-	-
23_Bed 6		110	-	-
23_Bed 7		110	-	-
23_Bed 8		110	-	-
23_Bed 9		110	-	-
23_Bed 10		110	-	-
23_Bed 11		110	-	-
23_Bed 12		110	-	-
23_Bed 13		110	-	-
23_Bed 14		110	-	-
23_Bed 15		110	-	-
23_Bed 16		110	-	-
23_Circulation 1		100	-	-
23_Circulation 2		100	-	-
23_Circulation 3		100	-	-
23_Circulation 4		100	-	-
23_Circulation 5		100	-	-
23_Circulation 6		100	-	-
23_Circulation 7		100	-	-
23_Circulation 8		100	-	-
23_Circulation 9		100	-	-
24_Bath 1		95	-	-
24_Bath 2		95	-	-
24_Bath 3		95	-	-
24_Bath 4		95	-	-
24_Bath 5		95	-	-
24_Bath 6		95	-	-
24_Bath 7		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
24_Bath 8		95	-	-
24_Bath 9		95	-	-
24_Bath 10		95	-	-
24_Bath 11		95	-	-
24_Bath 12		95	-	-
24_Bath 13		95	-	-
24_Bath 14		95	-	-
24_Bath 15		95	-	-
24_Bath 16		95	-	-
24_Bed 1		110	-	-
24_Bed 2		110	-	-
24_Bed 3		110	-	-
24_Bed 4		110	-	-
24_Bed 5		110	-	-
24_Bed 6		110	-	-
24_Bed 7		110	-	-
24_Bed 8		110	-	-
24_Bed 9		110	-	-
24_Bed 10		110	-	-
24_Bed 11		110	-	-
24_Bed 12		110	-	-
24_Bed 13		110	-	-
24_Bed 14		110	-	-
24_Bed 15		110	-	-
24_Bed 16		110	-	-
24_Circulation 1		100	-	-
24_Circulation 2		100	-	-
24_Circulation 3		100	-	-
24_Circulation 4		100	-	-
24_Circulation 5		100	-	-
24_Circulation 6		100	-	-
24_Circulation 7		100	-	-
25_Bath 1		95	-	-
25_Bath 2		95	-	-
25_Bath 3		95	-	-
25_Bath 4		95	-	-
25_Bath 5		95	-	-
25_Bath 6		95	-	-
25_Bath 7		95	-	-
25_Bath 8		95	-	-
25_Bath 9		95	-	-
25_Bath 10		95	-	-
25_Bath 11		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
25_Bath 12		95	-	-
25_Bath 13		95	-	-
25_Bath 14		95	-	-
25_Bath 15		95	-	-
25_Bath 16		95	-	-
25_Bed 1		110	-	-
25_Bed 2		110	-	-
25_Bed 3		110	-	-
25_Bed 4		110	-	-
25_Bed 5		110	-	-
25_Bed 6		110	-	-
25_Bed 7		110	-	-
25_Bed 8		110	-	-
25_Bed 9		110	-	-
25_Bed 10		110	-	-
25_Bed 11		110	-	-
25_Bed 12		110	-	-
25_Bed 13		110	-	-
25_Bed 14		110	-	-
25_Bed 15		110	-	-
25_Bed 16		110	-	-
25_Circulation 1		100	-	-
25_Circulation 2		100	-	-
25_Circulation 3		100	-	-
25_Circulation 4		100	-	-
25_Circulation 5		100	-	-
25_Circulation 6		100	-	-
25_Circulation 7		100	-	-
25_Circulation 8		100	-	-
25_Circulation 9		100	-	-
26_Bath 1		95	-	-
26_Bath 2		95	-	-
26_Bath 3		95	-	-
26_Bath 4		95	-	-
26_Bath 5		95	-	-
26_Bath 6		95	-	-
26_Bath 7		95	-	-
26_Bath 8		95	-	-
26_Bath 9		95	-	-
26_Bath 10		95	-	-
26_Bath 11		95	-	-
26_Bath 12		95	-	-
26_Bath 13		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
26_Bath 14		95	-	-
26_Bath 15		95	-	-
26_Bath 16		95	-	-
26_Bed 1		110	-	-
26_Bed 2		110	-	-
26_Bed 3		110	-	-
26_Bed 4		110	-	-
26_Bed 5		110	-	-
26_Bed 6		110	-	-
26_Bed 7		110	-	-
26_Bed 8		110	-	-
26_Bed 9		110	-	-
26_Bed 10		110	-	-
26_Bed 11		110	-	-
26_Bed 12		110	-	-
26_Bed 13		110	-	-
26_Bed 14		110	-	-
26_Bed 15		110	-	-
26_Bed 16		110	-	-
26_Circulation 1		100	-	-
26_Circulation 2		100	-	-
26_Circulation 3		100	-	-
26_Circulation 4		100	-	-
26_Circulation 5		100	-	-
26_Circulation 6		100	-	-
26_Circulation 7		100	-	-
26_Circulation 8		100	-	-
26_Circulation 9		100	-	-
27_Bath 1		95	-	-
27_Bath 2		95	-	-
27_Bath 3		95	-	-
27_Bath 4		95	-	-
27_Bath 5		95	-	-
27_Bath 6		95	-	-
27_Bath 7		95	-	-
27_Bath 8		95	-	-
27_Bath 9		95	-	-
27_Bath 10		95	-	-
27_Bath 11		95	-	-
27_Bath 12		95	-	-
27_Bath 13		95	-	-
27_Bath 14		95	-	-
27_Bath 15		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
27_Bath 16		95	-	-
27_Bed 1		110	-	-
27_Bed 2		110	-	-
27_Bed 3		110	-	-
27_Bed 4		110	-	-
27_Bed 5		110	-	-
27_Bed 6		110	-	-
27_Bed 7		110	-	-
27_Bed 8		110	-	-
27_Bed 9		110	-	-
27_Bed 10		110	-	-
27_Bed 11		110	-	-
27_Bed 12		110	-	-
27_Bed 13		110	-	-
27_Bed 14		110	-	-
27_Bed 15		110	-	-
27_Bed 16		110	-	-
27_Circulation 1		100	-	-
27_Circulation 2		100	-	-
27_Circulation 3		100	-	-
27_Circulation 4		100	-	-
27_Circulation 5		100	-	-
27_Circulation 6		100	-	-
27_Circulation 7		100	-	-
27_Circulation 8		100	-	-
27_Circulation 9		100	-	-
28_Bath 1		95	-	-
28_Bath 2		95	-	-
28_Bath 3		95	-	-
28_Bath 4		95	-	-
28_Bath 5		95	-	-
28_Bath 6		95	-	-
28_Bath 7		95	-	-
28_Bath 8		95	-	-
28_Bath 9		95	-	-
28_Bath 10		95	-	-
28_Bath 11		95	-	-
28_Bath 12		95	-	-
28_Bath 13		95	-	-
28_Bath 14		95	-	-
28_Bath 15		95	-	-
28_Bath 16		95	-	-
28_Bed 1		110	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
28_Bed 2		110	-	-
28_Bed 3		110	-	-
28_Bed 4		110	-	-
28_Bed 5		110	-	-
28_Bed 6		110	-	-
28_Bed 7		110	-	-
28_Bed 8		110	-	-
28_Bed 9		110	-	-
28_Bed 10		110	-	-
28_Bed 11		110	-	-
28_Bed 12		110	-	-
28_Bed 13		110	-	-
28_Bed 14		110	-	-
28_Bed 15		110	-	-
28_Bed 16		110	-	-
28_Circulation 1		100	-	-
28_Circulation 2		100	-	-
28_Circulation 3		100	-	-
28_Circulation 4		100	-	-
28_Circulation 5		100	-	-
28_Circulation 6		100	-	-
28_Circulation 7		100	-	-
28_Circulation 8		100	-	-
28_Circulation 9		100	-	-
29_Bath 1		95	-	-
29_Bath 2		95	-	-
29_Bath 3		95	-	-
29_Bath 4		95	-	-
29_Bath 5		95	-	-
29_Bath 6		95	-	-
29_Bath 7		95	-	-
29_Bath 8		95	-	-
29_Bath 9		95	-	-
29_Bath 10		95	-	-
29_Bath 11		95	-	-
29_Bath 12		95	-	-
29_Bath 13		95	-	-
29_Bath 14		95	-	-
29_Bath 15		95	-	-
29_Bath 16		95	-	-
29_Bed 1		110	-	-
29_Bed 2		110	-	-
29_Bed 3		110	-	-

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]		Efficacy [lm/W] Power density [W/m ²]	
Standard value		95		80 0.3	
29_Bed 4		110		- -	
29_Bed 5		110		- -	
29_Bed 6		110		- -	
29_Bed 7		110		- -	
29_Bed 8		110		- -	
29_Bed 9		110		- -	
29_Bed 10		110		- -	
29_Bed 11		110		- -	
29_Bed 12		110		- -	
29_Bed 13		110		- -	
29_Bed 14		110		- -	
29_Bed 15		110		- -	
29_Bed 16		110		- -	
29_Circulation 1		100		- -	
29_Circulation 2		100		- -	
29_Circulation 3		100		- -	
29_Circulation 4		100		- -	
29_Circulation 5		100		- -	
29_Circulation 6		100		- -	
29_Circulation 7		100		- -	
29_Circulation 8		100		- -	
29_Circulation 9		100		- -	
30_Bath 1		95		- -	
30_Bath 2		95		- -	
30_Bath 3		95		- -	
30_Bath 4		95		- -	
30_Bath 5		95		- -	
30_Bath 6		95		- -	
30_Bath 7		95		- -	
30_Bath 8		95		- -	
30_Bath 9		95		- -	
30_Bath 10		95		- -	
30_Bath 11		95		- -	
30_Bath 12		95		- -	
30_Bath 13		95		- -	
30_Bath 14		95		- -	
30_Bath 15		95		- -	
30_Bath 16		95		- -	
30_Bed 1		110		- -	
30_Bed 2		110		- -	
30_Bed 3		110		- -	
30_Bed 4		110		- -	
30_Bed 5		110		- -	

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
30_Bed 6		110	-	-
30_Bed 7		110	-	-
30_Bed 8		110	-	-
30_Bed 9		110	-	-
30_Bed 10		110	-	-
30_Bed 11		110	-	-
30_Bed 12		110	-	-
30_Bed 13		110	-	-
30_Bed 14		110	-	-
30_Bed 15		110	-	-
30_Bed 16		110	-	-
30_Circulation 1		100	-	-
30_Circulation 2		100	-	-
30_Circulation 3		100	-	-
30_Circulation 4		100	-	-
30_Circulation 5		100	-	-
30_Circulation 6		100	-	-
30_Circulation 7		100	-	-
30_Circulation 8		100	-	-
30_Circulation 9		100	-	-
31_Bath 1		95	-	-
31_Bath 2		95	-	-
31_Bath 3		95	-	-
31_Bath 4		95	-	-
31_Bath 5		95	-	-
31_Bath 6		95	-	-
31_Bath 7		95	-	-
31_Bath 8		95	-	-
31_Bath 9		95	-	-
31_Bath 10		95	-	-
31_Bath 11		95	-	-
31_Bath 12		95	-	-
31_Bath 13		95	-	-
31_Bath 14		95	-	-
31_Bed 1		110	-	-
31_Bed 2		110	-	-
31_Bed 3		110	-	-
31_Bed 4		110	-	-
31_Bed 5		110	-	-
31_Bed 6		110	-	-
31_Bed 7		110	-	-
31_Bed 8		110	-	-
31_Bed 9		110	-	-

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]	
Standard value		95	80	0.3	
31_Bed 10		110	-	-	
31_Bed 11		110	-	-	
31_Bed 12		110	-	-	
31_Bed 13		110	-	-	
31_Bed 14		110	-	-	
31_Circulation 1		100	-	-	
31_Circulation 2		100	-	-	
31_Circulation 3		100	-	-	
31_Circulation 4		100	-	-	
31_Circulation 5		100	-	-	
31_Circulation 6		100	-	-	
31_Circulation 7		100	-	-	
31_Circulation 8		100	-	-	
31_Circulation 9		100	-	-	
03_Circulation 11		100	-	-	
32_Bath 1		95	-	-	
32_Bath 2		95	-	-	
32_Bath 3		95	-	-	
32_Bath 4		95	-	-	
32_Bath 5		95	-	-	
32_Bath 6		95	-	-	
32_Bath 7		95	-	-	
32_Bath 8		95	-	-	
32_Bath 9		95	-	-	
32_Bath 10		95	-	-	
32_Bath 11		95	-	-	
32_Bath 12		95	-	-	
32_Bath 13		95	-	-	
32_Bath 14		95	-	-	
32_Bed 1		110	-	-	
32_Bed 2		110	-	-	
32_Bed 3		110	-	-	
32_Bed 4		110	-	-	
32_Bed 5		110	-	-	
32_Bed 6		110	-	-	
32_Bed 7		110	-	-	
32_Bed 8		110	-	-	
32_Bed 9		110	-	-	
32_Bed 10		110	-	-	
32_Bed 11		110	-	-	
32_Bed 12		110	-	-	
32_Bed 13		110	-	-	
32_Bed 14		110	-	-	

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
32_Circulation 1		100	-	-
32_Circulation 2		100	-	-
32_Circulation 3		100	-	-
32_Circulation 4		100	-	-
32_Circulation 5		100	-	-
32_Circulation 6		100	-	-
32_Circulation 7		100	-	-
32_Circulation 8		100	-	-
32_Circulation 9		100	-	-
33_Bath 1		95	-	-
33_Bath 2		95	-	-
33_Bath 3		95	-	-
33_Bath 4		95	-	-
33_Bath 5		95	-	-
33_Bath 6		95	-	-
33_Bath 7		95	-	-
33_Bath 8		95	-	-
33_Bath 9		95	-	-
33_Bath 10		95	-	-
33_Bath 11		95	-	-
33_Bath 12		95	-	-
33_Bath 13		95	-	-
33_Bath 14		95	-	-
33_Bed 1		110	-	-
33_Bed 2		110	-	-
33_Bed 3		110	-	-
33_Bed 4		110	-	-
33_Bed 5		110	-	-
33_Bed 6		110	-	-
33_Bed 7		110	-	-
33_Bed 8		110	-	-
33_Bed 9		110	-	-
33_Bed 10		110	-	-
33_Bed 11		110	-	-
33_Bed 12		110	-	-
33_Bed 13		110	-	-
33_Bed 14		110	-	-
33_Circulation 1		100	-	-
33_Circulation 2		100	-	-
33_Circulation 3		100	-	-
33_Circulation 4		100	-	-
33_Circulation 5		100	-	-
33_Circulation 6		100	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
33_Circulation 7		100	-	-
33_Circulation 8		100	-	-
33_Circulation 9		100	-	-
33m_Plant		110	-	-
00_Switch		110	-	-

The spaces in the building should have appropriate passive control measures to limit solar gains in summer

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
-01_Gallery	N/A	N/A
-01_Lounge - Perimeter	NO (-48%)	NO
-01_Lounge - Non-Perimeter	NO (-79%)	NO
-01_Games	NO (-58%)	NO
-01_Multi-Media Lounge	NO (-45%)	NO
-01_Comms	N/A	N/A
00_Gallery - Perimeter 1	NO (-24%)	NO
00_Gallery - Perimeter 2	NO (-23%)	NO
00_Gallery - Non-Perimeter	NO (-43%)	NO
00_Residents' Lounge - Perimeter	YES (+97%)	NO
00_Residents' Lounge - Non-Perimeter	NO (-4%)	NO
00_Study - Perimeter	NO (-52%)	NO
00_Study - Non-Perimeter	NO (-83%)	NO
00_Study Room - Large	NO (-28%)	NO
00_Study Room - Small	NO (-43%)	NO
00_Café	YES (+70%)	NO
00_Welfare	N/A	N/A
00_Reception	YES (+29%)	NO
00_Lobby	YES (+60%)	NO
-01_Cinema	N/A	N/A
01_Bed 1	NO (-61%)	NO
01_Bed 2	NO (-60%)	NO
01_Bed 3	NO (-59%)	NO
01_Bed 4	NO (-58%)	NO
01_Bed 5	NO (-58%)	NO
01_Bed 6	NO (-58%)	NO
01_Bed 7	NO (-58%)	NO
01_Bed 8	NO (-36%)	NO
01_Bed 9	NO (-60%)	NO
01_Bed 10	NO (-58%)	NO
01_Bed 11	NO (-60%)	NO
01_Bed 12	NO (-63%)	NO
01_Bed 13	NO (-53%)	NO
01_Bed 14	NO (-64%)	NO
01_Bed 15	NO (-80%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
01_Bed 16	NO (-61%)	NO
01_Bed 17	NO (-79%)	NO
01_Bed 18	NO (-78%)	NO
01_Bed 19	NO (-62%)	NO
01_Bed 20	NO (-76%)	NO
01_Bed 21	NO (-72%)	NO
01_Bed 22	NO (-87%)	NO
01_Bed 23	NO (-86%)	NO
02_Bed 1	NO (-62%)	NO
02_Bed 2	NO (-62%)	NO
02_Bed 3	NO (-61%)	NO
02_Bed 4	NO (-60%)	NO
02_Bed 5	NO (-60%)	NO
02_Bed 6	NO (-60%)	NO
02_Bed 7	NO (-60%)	NO
02_Bed 8	NO (-36%)	NO
02_Bed 9	NO (-60%)	NO
02_Bed 10	NO (-58%)	NO
02_Bed 11	NO (-60%)	NO
02_Bed 12	NO (-63%)	NO
02_Bed 13	NO (-53%)	NO
02_Bed 14	NO (-64%)	NO
02_Bed 15	NO (-81%)	NO
02_Bed 16	NO (-64%)	NO
02_Bed 17	NO (-80%)	NO
02_Bed 18	NO (-79%)	NO
02_Bed 19	NO (-64%)	NO
02_Bed 20	NO (-77%)	NO
02_Bed 21	NO (-73%)	NO
02_Bed 22	NO (-89%)	NO
02_Bed 23	NO (-88%)	NO
03_Bed 1	NO (-97%)	NO
03_Bed 2	NO (-98%)	NO
03_Bed 3	NO (-78%)	NO
03_Bed 4	NO (-67%)	NO
03_Bed 5	NO (-66%)	NO
03_Bed 6	NO (-66%)	NO
03_Bed 7	NO (-66%)	NO
03_Bed 8	NO (-66%)	NO
03_Bed 9	NO (-35%)	NO
03_Bed 10	NO (-59%)	NO
03_Bed 11	NO (-57%)	NO
03_Bed 12	NO (-59%)	NO
03_Bed 13	NO (-62%)	NO
03_Bed 14	NO (-52%)	NO
03_Bed 15	NO (-87%)	NO
03_Bed 16	NO (-92%)	NO
03_Bed 17	NO (-90%)	NO
03_Bed 18	NO (-90%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
03_Bed 19	NO (-83%)	NO
03_Indoor Terrace	NO (-78%)	NO
04_Bed 1	NO (-48%)	NO
04_Bed 2	NO (-56%)	NO
04_Bed 3	NO (-45%)	NO
04_Bed 4	NO (-45%)	NO
04_Bed 5	NO (-54%)	NO
04_Bed 6	NO (-50%)	NO
04_Bed 7	NO (-19%)	NO
04_Bed 8	NO (-46%)	NO
04_Bed 9	NO (-49%)	NO
04_Bed 10	NO (-53%)	NO
04_Bed 11	NO (-33%)	NO
04_Bed 12	NO (-33%)	NO
04_Bed 13	NO (-44%)	NO
04_Bed 14	NO (-53%)	NO
04_Bed 15	NO (-41%)	NO
04_Bed 16	NO (-27%)	NO
05_Bed 1	NO (-51%)	NO
05_Bed 2	NO (-54%)	NO
05_Bed 3	NO (-45%)	NO
05_Bed 4	NO (-44%)	NO
05_Bed 5	NO (-56%)	NO
05_Bed 6	NO (-48%)	NO
05_Bed 7	NO (-27%)	NO
05_Bed 8	NO (-49%)	NO
05_Bed 9	NO (-46%)	NO
05_Bed 10	NO (-55%)	NO
05_Bed 11	NO (-33%)	NO
05_Bed 12	NO (-33%)	NO
05_Bed 13	NO (-45%)	NO
05_Bed 14	NO (-55%)	NO
05_Bed 15	NO (-37%)	NO
05_Bed 16	NO (-36%)	NO
06_Bed 1	NO (-48%)	NO
06_Bed 2	NO (-56%)	NO
06_Bed 3	NO (-45%)	NO
06_Bed 4	NO (-45%)	NO
06_Bed 5	NO (-54%)	NO
06_Bed 6	NO (-50%)	NO
06_Bed 7	NO (-19%)	NO
06_Bed 8	NO (-46%)	NO
06_Bed 9	NO (-49%)	NO
06_Bed 10	NO (-53%)	NO
06_Bed 11	NO (-33%)	NO
06_Bed 12	NO (-33%)	NO
06_Bed 13	NO (-44%)	NO
06_Bed 14	NO (-53%)	NO
06_Bed 15	NO (-41%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
06_Bed 16	NO (-27%)	NO
07_Bed 1	NO (-51%)	NO
07_Bed 2	NO (-54%)	NO
07_Bed 3	NO (-45%)	NO
07_Bed 4	NO (-44%)	NO
07_Bed 5	NO (-56%)	NO
07_Bed 6	NO (-48%)	NO
07_Bed 7	NO (-27%)	NO
07_Bed 8	NO (-49%)	NO
07_Bed 9	NO (-46%)	NO
07_Bed 10	NO (-55%)	NO
07_Bed 11	NO (-33%)	NO
07_Bed 12	NO (-33%)	NO
07_Bed 13	NO (-45%)	NO
07_Bed 14	NO (-55%)	NO
07_Bed 15	NO (-37%)	NO
07_Bed 16	NO (-36%)	NO
08_Bed 1	NO (-48%)	NO
08_Bed 2	NO (-56%)	NO
08_Bed 3	NO (-45%)	NO
08_Bed 4	NO (-45%)	NO
08_Bed 5	NO (-54%)	NO
08_Bed 6	NO (-50%)	NO
08_Bed 7	NO (-19%)	NO
08_Bed 8	NO (-46%)	NO
08_Bed 9	NO (-49%)	NO
08_Bed 10	NO (-53%)	NO
08_Bed 11	NO (-33%)	NO
08_Bed 12	NO (-33%)	NO
08_Bed 13	NO (-44%)	NO
08_Bed 14	NO (-53%)	NO
08_Bed 15	NO (-41%)	NO
08_Bed 16	NO (-27%)	NO
09_Bed 1	NO (-51%)	NO
09_Bed 2	NO (-54%)	NO
09_Bed 3	NO (-45%)	NO
09_Bed 4	NO (-44%)	NO
09_Bed 5	NO (-56%)	NO
09_Bed 6	NO (-48%)	NO
09_Bed 7	NO (-27%)	NO
09_Bed 8	NO (-49%)	NO
09_Bed 9	NO (-46%)	NO
09_Bed 10	NO (-55%)	NO
09_Bed 11	NO (-33%)	NO
09_Bed 12	NO (-33%)	NO
09_Bed 13	NO (-45%)	NO
09_Bed 14	NO (-55%)	NO
09_Bed 15	NO (-37%)	NO
09_Bed 16	NO (-36%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
10_Bed 1	NO (-48%)	NO
10_Bed 2	NO (-56%)	NO
10_Bed 3	NO (-45%)	NO
10_Bed 4	NO (-45%)	NO
10_Bed 5	NO (-54%)	NO
10_Bed 6	NO (-50%)	NO
10_Bed 7	NO (-19%)	NO
10_Bed 8	NO (-46%)	NO
10_Bed 9	NO (-49%)	NO
10_Bed 10	NO (-53%)	NO
10_Bed 11	NO (-33%)	NO
10_Bed 12	NO (-33%)	NO
10_Bed 13	NO (-44%)	NO
10_Bed 14	NO (-53%)	NO
10_Bed 15	NO (-41%)	NO
10_Bed 16	NO (-27%)	NO
11_Bed 1	NO (-51%)	NO
11_Bed 2	NO (-54%)	NO
11_Bed 3	NO (-45%)	NO
11_Bed 4	NO (-44%)	NO
11_Bed 5	NO (-56%)	NO
11_Bed 6	NO (-48%)	NO
11_Bed 7	NO (-27%)	NO
11_Bed 8	NO (-49%)	NO
11_Bed 9	NO (-46%)	NO
11_Bed 10	NO (-55%)	NO
11_Bed 11	NO (-33%)	NO
11_Bed 12	NO (-33%)	NO
11_Bed 13	NO (-45%)	NO
11_Bed 14	NO (-55%)	NO
11_Bed 15	NO (-37%)	NO
11_Bed 16	NO (-36%)	NO
12_Bed 1	NO (-48%)	NO
12_Bed 2	NO (-56%)	NO
12_Bed 3	NO (-45%)	NO
12_Bed 4	NO (-45%)	NO
12_Bed 5	NO (-54%)	NO
12_Bed 6	NO (-50%)	NO
12_Bed 7	NO (-19%)	NO
12_Bed 8	NO (-46%)	NO
12_Bed 9	NO (-49%)	NO
12_Bed 10	NO (-53%)	NO
12_Bed 11	NO (-33%)	NO
12_Bed 12	NO (-33%)	NO
12_Bed 13	NO (-44%)	NO
12_Bed 14	NO (-53%)	NO
12_Bed 15	NO (-41%)	NO
12_Bed 16	NO (-27%)	NO
13_Bed 1	NO (-51%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
13_Bed 2	NO (-54%)	NO
13_Bed 3	NO (-45%)	NO
13_Bed 4	NO (-44%)	NO
13_Bed 5	NO (-56%)	NO
13_Bed 6	NO (-48%)	NO
13_Bed 7	NO (-27%)	NO
13_Bed 8	NO (-49%)	NO
13_Bed 9	NO (-46%)	NO
13_Bed 10	NO (-55%)	NO
13_Bed 11	NO (-33%)	NO
13_Bed 12	NO (-33%)	NO
13_Bed 13	NO (-45%)	NO
13_Bed 14	NO (-55%)	NO
13_Bed 15	NO (-37%)	NO
13_Bed 16	NO (-36%)	NO
14_Bed 1	NO (-48%)	NO
14_Bed 2	NO (-56%)	NO
14_Bed 3	NO (-45%)	NO
14_Bed 4	NO (-45%)	NO
14_Bed 5	NO (-54%)	NO
14_Bed 6	NO (-50%)	NO
14_Bed 7	NO (-19%)	NO
14_Bed 8	NO (-46%)	NO
14_Bed 9	NO (-49%)	NO
14_Bed 10	NO (-53%)	NO
14_Bed 11	NO (-33%)	NO
14_Bed 12	NO (-33%)	NO
14_Bed 13	NO (-44%)	NO
14_Bed 14	NO (-53%)	NO
14_Bed 15	NO (-41%)	NO
14_Bed 16	NO (-27%)	NO
15_Bed 1	NO (-51%)	NO
15_Bed 2	NO (-54%)	NO
15_Bed 3	NO (-47%)	NO
15_Bed 4	NO (-46%)	NO
15_Bed 5	NO (-56%)	NO
15_Bed 6	NO (-48%)	NO
15_Bed 7	NO (-27%)	NO
15_Bed 8	NO (-49%)	NO
15_Bed 9	NO (-46%)	NO
15_Bed 10	NO (-55%)	NO
15_Bed 11	NO (-33%)	NO
15_Bed 12	NO (-33%)	NO
15_Bed 13	NO (-45%)	NO
15_Bed 14	NO (-55%)	NO
15_Bed 15	NO (-37%)	NO
15_Bed 16	NO (-36%)	NO
16_Bed 1	NO (-48%)	NO
16_Bed 2	NO (-56%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
16_Bed 3	NO (-46%)	NO
16_Bed 4	NO (-47%)	NO
16_Bed 5	NO (-53%)	NO
16_Bed 6	NO (-50%)	NO
16_Bed 7	NO (-19%)	NO
16_Bed 8	NO (-46%)	NO
16_Bed 9	NO (-49%)	NO
16_Bed 10	NO (-53%)	NO
16_Bed 11	NO (-33%)	NO
16_Bed 12	NO (-33%)	NO
16_Bed 13	NO (-44%)	NO
16_Bed 14	NO (-53%)	NO
16_Bed 15	NO (-41%)	NO
16_Bed 16	NO (-27%)	NO
17_Bed 1	NO (-51%)	NO
17_Bed 2	NO (-54%)	NO
17_Bed 3	NO (-47%)	NO
17_Bed 4	NO (-46%)	NO
17_Bed 5	NO (-56%)	NO
17_Bed 6	NO (-48%)	NO
17_Bed 7	NO (-27%)	NO
17_Bed 8	NO (-49%)	NO
17_Bed 9	NO (-46%)	NO
17_Bed 10	NO (-55%)	NO
17_Bed 11	NO (-33%)	NO
17_Bed 12	NO (-33%)	NO
17_Bed 13	NO (-45%)	NO
17_Bed 14	NO (-55%)	NO
17_Bed 15	NO (-37%)	NO
17_Bed 16	NO (-36%)	NO
18_Bed 1	NO (-48%)	NO
18_Bed 2	NO (-56%)	NO
18_Bed 3	NO (-46%)	NO
18_Bed 4	NO (-47%)	NO
18_Bed 5	NO (-53%)	NO
18_Bed 6	NO (-50%)	NO
18_Bed 7	NO (-19%)	NO
18_Bed 8	NO (-46%)	NO
18_Bed 9	NO (-49%)	NO
18_Bed 10	NO (-53%)	NO
18_Bed 11	NO (-33%)	NO
18_Bed 12	NO (-33%)	NO
18_Bed 13	NO (-44%)	NO
18_Bed 14	NO (-53%)	NO
18_Bed 15	NO (-41%)	NO
18_Bed 16	NO (-27%)	NO
19_Bed 1	NO (-51%)	NO
19_Bed 2	NO (-54%)	NO
19_Bed 3	NO (-47%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
19_Bed 4	NO (-46%)	NO
19_Bed 5	NO (-56%)	NO
19_Bed 6	NO (-48%)	NO
19_Bed 7	NO (-27%)	NO
19_Bed 8	NO (-49%)	NO
19_Bed 9	NO (-46%)	NO
19_Bed 10	NO (-55%)	NO
19_Bed 11	NO (-33%)	NO
19_Bed 12	NO (-33%)	NO
19_Bed 13	NO (-45%)	NO
19_Bed 14	NO (-55%)	NO
19_Bed 15	NO (-37%)	NO
19_Bed 16	NO (-36%)	NO
20_Bed 1	NO (-48%)	NO
20_Bed 2	NO (-56%)	NO
20_Bed 3	NO (-46%)	NO
20_Bed 4	NO (-47%)	NO
20_Bed 5	NO (-53%)	NO
20_Bed 6	NO (-50%)	NO
20_Bed 7	NO (-19%)	NO
20_Bed 8	NO (-46%)	NO
20_Bed 9	NO (-49%)	NO
20_Bed 10	NO (-53%)	NO
20_Bed 11	NO (-33%)	NO
20_Bed 12	NO (-33%)	NO
20_Bed 13	NO (-44%)	NO
20_Bed 14	NO (-53%)	NO
20_Bed 15	NO (-41%)	NO
20_Bed 16	NO (-27%)	NO
21_Bed 1	NO (-51%)	NO
21_Bed 2	NO (-54%)	NO
21_Bed 3	NO (-47%)	NO
21_Bed 4	NO (-46%)	NO
21_Bed 5	NO (-56%)	NO
21_Bed 6	NO (-48%)	NO
21_Bed 7	NO (-27%)	NO
21_Bed 8	NO (-49%)	NO
21_Bed 9	NO (-46%)	NO
21_Bed 10	NO (-55%)	NO
21_Bed 11	NO (-33%)	NO
21_Bed 12	NO (-33%)	NO
21_Bed 13	NO (-45%)	NO
21_Bed 14	NO (-55%)	NO
21_Bed 15	NO (-37%)	NO
21_Bed 16	NO (-36%)	NO
22_Bed 1	NO (-39%)	NO
22_Bed 2	NO (-38%)	NO
22_Bed 3	NO (-59%)	NO
22_Bed 4	NO (-46%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
22_Bed 5	NO (-47%)	NO
22_Bed 6	NO (-57%)	NO
22_Bed 7	NO (-38%)	NO
22_Bed 8	NO (-31%)	NO
22_Bed 9	NO (-25%)	NO
22_Bed 10	NO (-24%)	NO
22_Bed 11	NO (-58%)	NO
22_Bed 12	NO (-34%)	NO
22_Bed 13	NO (-34%)	NO
22_Bed 14	NO (-60%)	NO
22_Bed 15	NO (-25%)	NO
22_Bed 16	NO (-32%)	NO
23_Bed 1	NO (-46%)	NO
23_Bed 2	NO (-38%)	NO
23_Bed 3	NO (-57%)	NO
23_Bed 4	NO (-47%)	NO
23_Bed 5	NO (-46%)	NO
23_Bed 6	NO (-59%)	NO
23_Bed 7	NO (-38%)	NO
23_Bed 8	NO (-37%)	NO
23_Bed 9	NO (-32%)	NO
23_Bed 10	NO (-24%)	NO
23_Bed 11	NO (-60%)	NO
23_Bed 12	NO (-34%)	NO
23_Bed 13	NO (-34%)	NO
23_Bed 14	NO (-57%)	NO
23_Bed 15	NO (-25%)	NO
23_Bed 16	NO (-40%)	NO
24_Bed 1	NO (-39%)	NO
24_Bed 2	NO (-38%)	NO
24_Bed 3	NO (-59%)	NO
24_Bed 4	NO (-46%)	NO
24_Bed 5	NO (-47%)	NO
24_Bed 6	NO (-57%)	NO
24_Bed 7	NO (-38%)	NO
24_Bed 8	NO (-31%)	NO
24_Bed 9	NO (-25%)	NO
24_Bed 10	NO (-24%)	NO
24_Bed 11	NO (-58%)	NO
24_Bed 12	NO (-34%)	NO
24_Bed 13	NO (-34%)	NO
24_Bed 14	NO (-60%)	NO
24_Bed 15	NO (-25%)	NO
24_Bed 16	NO (-32%)	NO
25_Bed 1	NO (-46%)	NO
25_Bed 2	NO (-38%)	NO
25_Bed 3	NO (-57%)	NO
25_Bed 4	NO (-47%)	NO
25_Bed 5	NO (-46%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
25_Bed 6	NO (-59%)	NO
25_Bed 7	NO (-38%)	NO
25_Bed 8	NO (-37%)	NO
25_Bed 9	NO (-32%)	NO
25_Bed 10	NO (-24%)	NO
25_Bed 11	NO (-60%)	NO
25_Bed 12	NO (-34%)	NO
25_Bed 13	NO (-34%)	NO
25_Bed 14	NO (-57%)	NO
25_Bed 15	NO (-25%)	NO
25_Bed 16	NO (-40%)	NO
26_Bed 1	NO (-39%)	NO
26_Bed 2	NO (-38%)	NO
26_Bed 3	NO (-59%)	NO
26_Bed 4	NO (-46%)	NO
26_Bed 5	NO (-47%)	NO
26_Bed 6	NO (-57%)	NO
26_Bed 7	NO (-38%)	NO
26_Bed 8	NO (-31%)	NO
26_Bed 9	NO (-25%)	NO
26_Bed 10	NO (-24%)	NO
26_Bed 11	NO (-58%)	NO
26_Bed 12	NO (-34%)	NO
26_Bed 13	NO (-34%)	NO
26_Bed 14	NO (-60%)	NO
26_Bed 15	NO (-25%)	NO
26_Bed 16	NO (-32%)	NO
27_Bed 1	NO (-46%)	NO
27_Bed 2	NO (-38%)	NO
27_Bed 3	NO (-57%)	NO
27_Bed 4	NO (-47%)	NO
27_Bed 5	NO (-46%)	NO
27_Bed 6	NO (-59%)	NO
27_Bed 7	NO (-38%)	NO
27_Bed 8	NO (-37%)	NO
27_Bed 9	NO (-32%)	NO
27_Bed 10	NO (-24%)	NO
27_Bed 11	NO (-60%)	NO
27_Bed 12	NO (-34%)	NO
27_Bed 13	NO (-34%)	NO
27_Bed 14	NO (-57%)	NO
27_Bed 15	NO (-25%)	NO
27_Bed 16	NO (-40%)	NO
28_Bed 1	NO (-39%)	NO
28_Bed 2	NO (-38%)	NO
28_Bed 3	NO (-59%)	NO
28_Bed 4	NO (-46%)	NO
28_Bed 5	NO (-47%)	NO
28_Bed 6	NO (-57%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
28_Bed 7	NO (-38%)	NO
28_Bed 8	NO (-31%)	NO
28_Bed 9	NO (-25%)	NO
28_Bed 10	NO (-24%)	NO
28_Bed 11	NO (-58%)	NO
28_Bed 12	NO (-34%)	NO
28_Bed 13	NO (-34%)	NO
28_Bed 14	NO (-60%)	NO
28_Bed 15	NO (-25%)	NO
28_Bed 16	NO (-32%)	NO
29_Bed 1	NO (-46%)	NO
29_Bed 2	NO (-38%)	NO
29_Bed 3	NO (-57%)	NO
29_Bed 4	NO (-47%)	NO
29_Bed 5	NO (-46%)	NO
29_Bed 6	NO (-59%)	NO
29_Bed 7	NO (-38%)	NO
29_Bed 8	NO (-37%)	NO
29_Bed 9	NO (-32%)	NO
29_Bed 10	NO (-24%)	NO
29_Bed 11	NO (-60%)	NO
29_Bed 12	NO (-34%)	NO
29_Bed 13	NO (-34%)	NO
29_Bed 14	NO (-57%)	NO
29_Bed 15	NO (-25%)	NO
29_Bed 16	NO (-40%)	NO
30_Bed 1	NO (-39%)	NO
30_Bed 2	NO (-38%)	NO
30_Bed 3	NO (-59%)	NO
30_Bed 4	NO (-46%)	NO
30_Bed 5	NO (-47%)	NO
30_Bed 6	NO (-57%)	NO
30_Bed 7	NO (-38%)	NO
30_Bed 8	NO (-31%)	NO
30_Bed 9	NO (-25%)	NO
30_Bed 10	NO (-24%)	NO
30_Bed 11	NO (-58%)	NO
30_Bed 12	NO (-34%)	NO
30_Bed 13	NO (-34%)	NO
30_Bed 14	NO (-60%)	NO
30_Bed 15	NO (-25%)	NO
30_Bed 16	NO (-32%)	NO
31_Bed 1	NO (-46%)	NO
31_Bed 2	NO (-42%)	NO
31_Bed 3	NO (-52%)	NO
31_Bed 4	NO (-46%)	NO
31_Bed 5	NO (-59%)	NO
31_Bed 6	NO (-38%)	NO
31_Bed 7	NO (-37%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
31_Bed 8	NO (-32%)	NO
31_Bed 9	NO (-24%)	NO
31_Bed 10	NO (-60%)	NO
31_Bed 11	NO (-34%)	NO
31_Bed 12	NO (-34%)	NO
31_Bed 13	NO (-50%)	NO
31_Bed 14	NO (-36%)	NO
32_Bed 1	NO (-40%)	NO
32_Bed 2	NO (-43%)	NO
32_Bed 3	NO (-51%)	NO
32_Bed 4	NO (-47%)	NO
32_Bed 5	NO (-57%)	NO
32_Bed 6	NO (-38%)	NO
32_Bed 7	NO (-31%)	NO
32_Bed 8	NO (-25%)	NO
32_Bed 9	NO (-24%)	NO
32_Bed 10	NO (-58%)	NO
32_Bed 11	NO (-34%)	NO
32_Bed 12	NO (-34%)	NO
32_Bed 13	NO (-51%)	NO
32_Bed 14	NO (-29%)	NO
33_Bed 1	NO (-46%)	NO
33_Bed 2	NO (-42%)	NO
33_Bed 3	NO (-52%)	NO
33_Bed 4	NO (-46%)	NO
33_Bed 5	NO (-59%)	NO
33_Bed 6	NO (-38%)	NO
33_Bed 7	NO (-37%)	NO
33_Bed 8	NO (-32%)	NO
33_Bed 9	NO (-24%)	NO
33_Bed 10	NO (-60%)	NO
33_Bed 11	NO (-34%)	NO
33_Bed 12	NO (-34%)	NO
33_Bed 13	NO (-50%)	NO
33_Bed 14	NO (-36%)	NO

Regulation 25A: Consideration of high efficiency alternative energy systems

Were alternative energy systems considered and analysed as part of the design process?	YES
Is evidence of such assessment available as a separate submission?	NO
Are any such measures included in the proposed design?	YES

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Floor area [m ²]	17378	17378
External area [m ²]	13132	13132
Weather	MAN	MAN
Infiltration [m ³ /hm ² @ 50Pa]	3	3
Average conductance [W/K]	7468	6474
Average U-value [W/m ² K]	0.57	0.49
Alpha value* [%]	36.06	21.06

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

Building Use

% Area Building Type

Retail/Financial and Professional Services
 Restaurants and Cafes/Drinking Establishments/Takeaways
 Offices and Workshop Businesses
 General Industrial and Special Industrial Groups
 Storage or Distribution
 Hotels
 Residential Institutions: Hospitals and Care Homes
 Residential Institutions: Residential Schools

100 Residential Institutions: Universities and Colleges

Secure Residential Institutions
 Residential Spaces
 Non-residential Institutions: Community/Day Centre
 Non-residential Institutions: Libraries, Museums, and Galleries
 Non-residential Institutions: Education
 Non-residential Institutions: Primary Health Care Building
 Non-residential Institutions: Crown and County Courts
 General Assembly and Leisure, Night Clubs, and Theatres
 Others: Passenger Terminals
 Others: Emergency Services
 Others: Miscellaneous 24hr Activities
 Others: Car Parks 24 hrs
 Others: Stand Alone Utility Block

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	6.29	5.51
Cooling	0.2	0.24
Auxiliary	6.31	7.29
Lighting	7.23	7.18
Hot water	4.89	6.67
Equipment*	47.62	47.62
TOTAL **	24.92	26.89

* 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
Displaced electricity	0	0

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	87.12	59.18
Primary energy [kWh _{PE} /m ²]	37.16	40.01
Total emissions [kg/m ²]	3.48	3.73

HVAC Systems Performance									
System Type	Heat dem MJ/m2	Cool dem MJ/m2	Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEEF	Cool SSEER	Heat gen SEFF	Cool gen SEER
[ST] Central heating using water: radiators, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	99.2	0	7.7	0	4	3.59	0	3.7	0
Notional	73.1	0	7.7	0	10.7	2.64	0	----	----
[ST] Central heating using water: radiators, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	113.4	0	8.8	0	10.7	3.59	0	3.7	0
Notional	69.8	0	7.3	0	10.6	2.64	0	----	----
[ST] Central heating using water: radiators, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	50.2	0	3.9	0	2.2	3.59	0	3.7	0
Notional	4.8	0	0.5	0	4.9	2.64	0	----	----
[ST] Variable refrigerant flow, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	73.6	26.8	3.5	1.3	14.1	5.88	5.88	5.88	5.88
Notional	52.1	31.9	5.5	2	4.9	2.64	4.4	----	----
[ST] Variable refrigerant flow, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	58.1	32.8	2.8	1.6	16.5	5.88	5.88	5.88	5.88
Notional	64.1	40.9	6.7	2.6	5.1	2.64	4.4	----	----
[ST] Variable refrigerant flow, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	36.2	12.5	1.7	0.6	16	5.88	5.88	5.88	5.88
Notional	26.3	31.3	2.8	2	5	2.64	4.4	----	----
[ST] Central heating using water: radiators, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	23.6	0	1.8	0	16	3.59	0	3.7	0
Notional	32.5	0	3.4	0	15.2	2.64	0	----	----
[ST] Central heating using water: radiators, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	92.7	0	7.2	0	22.8	3.59	0	3.7	0
Notional	71.8	0	7.6	0	22	2.64	0	----	----
[ST] Central heating using water: radiators, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	95.5	0	7.4	0	4.7	3.59	0	3.7	0
Notional	101.4	0	10.7	0	9	2.64	0	----	----
[ST] No Heating or Cooling									
Actual	59.4	0	4.6	0	0	3.59	0	3.7	0
Notional	56.2	0	5.9	0	0	2.64	0	----	----
[ST] Variable refrigerant flow, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	78.2	155.2	3.7	7.3	4.1	5.88	5.88	5.88	5.88
Notional	94.8	97.9	10	6.2	6.7	2.64	4.4	----	----
[ST] Central heating using water: radiators, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	2.3	0	0.2	0	19	3.59	0	3.7	0
Notional	0.1	0	0	0	7.4	2.64	0	----	----
[ST] Split or multi-split system, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	0	1098.5	0	51.9	0	0	5.88	0	5.88
Notional	0	1222.5	0	77.2	0	0	4.4	----	----
[ST] Central heating using water: radiators, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	52.1	0	4	0	3.3	3.59	0	3.7	0
Notional	42	0	4.4	0	2	2.64	0	----	----

Key to terms

Heat dem [MJ/m ²]	= Heating energy demand
Cool dem [MJ/m ²]	= Cooling energy demand
Heat con [kWh/m ²]	= Heating energy consumption
Cool con [kWh/m ²]	= Cooling energy consumption
Aux con [kWh/m ²]	= Auxiliary energy consumption
Heat SSEFF	= Heating system seasonal efficiency (for notional building, value depends on activity glazing class)
Cool SSEER	= Cooling system seasonal energy efficiency ratio
Heat gen SSEFF	= Heating generator seasonal efficiency
Cool gen SSEER	= Cooling generator seasonal energy efficiency ratio
ST	= System type
HS	= Heat source
HFT	= Heating fuel type
CFT	= Cooling fuel type