



Reading Park Station
Caversham Road
Reading
RG1 8BA

Non-Residential Development
Energy and Sustainability
Statement/Strategy

Issue 03



Client Name: Aviva Life and Pensions UK Limited

Client Address: Saint Helen's
1 Undershaft
London
EC3P 3DQ

Property: Reading Station Park
Caversham Road
Reading
RG1 8BA

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Prepared by: MW/SH

Checked by: KA

Validated by: KA



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EXECUTIVE SUMMARY

The energy strategy adopts a hierarchical approach using passive and low energy design technologies to reduce baseline energy demand and CO₂ emissions followed by the application of low and zero carbon technologies. This strategy is in line with the relevant Reading SPG Policies. In accordance with the December 2019 issue of the SPG, a target carbon emission savings is not stated but BREEAM 'Excellent' is to be achieved for all major non-residential developments.

The focus of this energy strategy is on CO₂ reduction by using a highly efficient building envelope with high efficiency mechanical and electrical services, along with photovoltaic panel renewable technology. The result is a proposed development with predicted performance of:

- CO₂ emissions reduction of 15.59 % over the Building Regulations 2013 compliant baseline scheme for the entire development.
- The energy strategy is predicted, using the Building Regulations calculation methodologies, to achieve an annual development carbon emission saving of 282.99 tonnes over the baseline scheme.

The carbon dioxide emission and savings values for the development as a whole are as follows:

	CO ₂ Emissions (Tonnes per annum)	
	Regulated	Unregulated
Baseline Building Regulations 2013 Part L Compliant Development	1815.64	3810.43
After passive/low energy (energy demand) reduction	1649.48	3644.27
After CHP or decentralised heating	1646.89	3641.67
After renewable energy	1438.32	3433.11

	Regulated CO ₂ Savings	
	Tonnes per annum	%
Savings from passive/low energy (energy demand) reduction	166.16	9.15
Savings from CHP or decentralised heating	2.6	0.14
Savings from renewable energy	208.57	11.49
Total Cumulative Savings	377.32	20.78



1.00 INTRODUCTION

1.01 Purpose

This report has been prepared on behalf of Aviva Life and Pensions UK Limited for the proposed Reading Station Park development energy strategy. The report contains the predicted energy and carbon emission assessment results and identifies savings from proposed low and zero carbon (renewable) technologies to be incorporated into the scheme.

The energy and carbon dioxide emission assessment has been undertaken using dynamic simulation modelling software TAS Version 9.4.4 for the commercial areas. Based on the building design submitted with the planning application the modelling will identify the energy and carbon dioxide savings related to the building envelope design and efficient mechanical and electrical services systems followed by the improvement using the proposed low and zero carbon (renewable) technologies for the scheme.

1.02 Existing Buildings

The existing development comprise a number of low-level retail buildings arranged facing Vastern Road. This development will be demolished and the land repurposed.

1.03 Proposed Development

The proposed development is submitted in outline based on Development Parameters, which allow the mix of commercial and residential use to be determined at a later stage. Under all land use mix scenarios, the development would come forward on the four defined development plots within the application site. For the purposes of this report we have assumed the development will be commercial led and is based on the illustrative scheme contained in the Design & Access Statement.

The proposed development consists of four new Tower referred to as Block A, Block B, Block C and Block D. The site is located next to Reading railway station on the corner of Caversham Road and Vastern Road.

The four blocks will provide approximately 115,000 m² (GEA) of commercial area. The ground level on all four blocks will consist of retail demises. The towers increase in height with Block D being the tallest tower within the proposed development.

1.04 Reservation

This report has been prepared solely for the use of the applicant and Watkins Payne Partnership accept no responsibility for its use by any third parties.



2.00 POLICY REVIEW

2.01 National Policy

The National Planning Policy Framework (NPPF) sets out the planning policies for England that are to be taken into account within local planning policies. The framework itself does not have specific policies but identifies the purpose of achieving sustainable development. The NPPF launched in February 2019 states;

“The planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal changes. It should help to: shape places in ways that contribute to radical reduction in greenhouse gas emission, minimise vulnerability of existing buildings; and support renewable and low carbon energy and associate infrastructure”.

2.02 Reading Sustainable Policies

Reading Borough Local Plan came into effect in November 2019. This document contains the policies for how Reading will develop up to 2036. The policies favours sustainable developments at the heart of its approach to planning and this is articulated in the National Planning Policy Framework, published in February 2019. The key policies associated with building design and energy strategy as noted below:

Sustainable Design and Construction

CC2: SUSTAINABLE DESIGN AND CONSTRUCTION

Proposals for new development, including the construction of new buildings and the redevelopment and refurbishment of existing building stock, will be acceptable where the design of buildings and site layouts use energy, water, minerals, materials and other natural resources appropriately, efficiently and with care and take account of the effects of climate change.

To meet these requirements:

- All major non-residential developments or conversions to residential are required to meet the most up-to-date BREEAM ‘Excellent’ standards, where possible;*
- All minor non-residential developments or conversions to residential are required to meet the most up-to-date BREEAM ‘Very Good’ standard as a minimum;*
- All non-residential development or conversions to residential should incorporate water conservation measures so that predicted per capita consumption does not exceed the appropriate levels set out in the applicable BREEAM standard. Both residential and non-residential development should include recycling greywater and rainwater harvesting where systems are energy and cost effective.*



Adaptation to Climate Change

CC3: ADAPTATION TO CLIMATE CHANGE

All developments will demonstrate how they have been designed to incorporate measures to adapt to climate change. The following measures shall be incorporated into development:

- *Wherever possible, new buildings shall be orientated to maximise the opportunities for both natural heating and ventilation and reducing exposure to wind and other elements;*
- *Proposals involving both new and existing buildings shall demonstrate how they have been designed to maximise resistance and resilience to climate change for example by including measures such as solar shading, thermal mass, heating and ventilation of the building and appropriately coloured materials in areas exposed to direct sunlight, green and brown roofs, green walls, etc;*
- *Use of trees and other planting, where appropriate as part of a landscape scheme, to provide shading of amenity areas, buildings and streets and to help to connect habitat, designed with native plants that are carefully selected, managed and adaptable to meet the predicted changed climatic conditions; and*
- *All development shall minimise the impact of surface water runoff from the development in the design of the drainage system, and where possible incorporate mitigation and resilience measures for any increases in river flooding levels as a result of climate change*

Decentralised Energy

CC4: DECENTRALISED ENERGY

In meeting the sustainability requirements of this plan, developments of the sizes set out below shall demonstrate how consideration has been given to securing energy for the development from a decentralised energy source.

Any development of more than 20 dwellings and/ or non-residential development of over 1,000 sq m shall consider the inclusion of decentralised energy provision, within the site, unless it can be demonstrated that the scheme is not suitable, feasible or viable for this form of energy provision.

Where there is existing decentralised energy provision present within the vicinity of an application site, further developments of 10 dwellings or more or non-residential development of 1,000 sq m or more will be expected to link into the existing decentralised energy network or demonstrate why this is not feasible.



Standards for New Housing

H5: STANDARDS FOR NEW HOUSING

New build housing should be built to the following standards, unless it can be clearly demonstrated that this would render a development unviable:

- a. All new build housing outside the Central Area as defined on the Proposals Map will comply with the nationally-described space standard.*
- b. All new build housing will be built to the higher water efficiency standard under Regulation 36(3) of the Building Regulations⁷⁹.*
- c. All major new-build residential development should be designed to achieve zero carbon homes.*
- d. All other new build housing will achieve at a minimum a 19% improvement in the dwelling emission rate over the target emission rate, as defined in the 2013 Building Regulations.*
- e. All new build housing will be accessible and adaptable in line with M4(2) of the Building Regulations, unless it is built in line with M4(3) (see below).*
- f. On developments of 20 or more new build dwellings, at least 5% of dwellings will be wheelchair user dwellings in line with M4(3) of the Building Regulations. Any market homes provided to meet this requirement will be 'wheelchair adaptable' as defined in part M, whilst homes where the Council is responsible for allocating or nominating an individual may be 'wheelchair accessible'.*

2.03 Reading Supplementary Planning Guidance

The further clarification to the Reading Local Plan 2019 is supported by supplementary planning guidance (SPG) that includes "Sustainable Design and Construction" dated December 2019 that relates specifically to sustainability issues.

The SPD is intended to guide developers and decision-makers on the implementation of key sustainability policies set out in the Reading Local Plan, namely CC2-CC5, EN18 and H5. Summary of these policies are below;

- **CC2: Sustainable Design and Construction**

This policy seeks improved sustainability performance of buildings by setting out BREEAM requirements for non-residential developments conversions to residential. It also sets out the general principles of sustainability in new development that applies to both residential and non-residential uses. Requiring the specified BREEAM levels will significantly contribute to achieving Reading's emissions targets, as well as mitigating the effects of climate change.

- **CC3: Adaptation to Climate Change**

This identifies measures including building orientation, shading, heating, ventilation, green or brown roofs and walls, planting and surface water run-off to deal with the effects of climate change. Where these measures are not appropriately incorporated, planners will consider whether or not this is a reason for refusal. This policy will ensure that development within the Borough is resilient in the face of climate change.



- CC4: Decentralised Energy

This policy requires developers to consider inclusion of decentralised energy infrastructure, increasing the amount of decentralised energy provision in the Borough. This will help to achieve a shift to sustainable energy consumption and production and covers a wide range of technologies that reduce dependence on a centralised network or grid.

- CC5: Waste Minimisation and Storage

This policy requires developers to identify measures to minimise the generation of waste and to handle waste appropriately during the lifetime of a development. It will help to achieve the aims of the Council's Waste Minimisation Strategy⁹, as well as to comply with national policy, such as the Landfill Directive¹⁰.

- EN18: Flooding and Sustainable Drainage Systems

This policy directs development away from areas that are liable to flood. In areas of lower risk, development may move forward if it passes the exception test in the NPPF. It also requires major developments to incorporate Sustainable Drainage Systems (SuDS). This policy will help to protect people and property from flooding.

- H5: Standards for New Housing

This policy outlines standards for new-build housing, including those for sustainable design and construction. All new-build housing must be built to the higher water efficiency standard under the Building Regulations. All major new-build residential should achieve zero carbon homes and all other new-build housing must achieve a minimum 19% improvement over the 2013 Building Regulations target. This policy will help to deliver high-quality new homes and achieve Reading's emissions targets, as well as mitigate the effects of climate change.

According to the SPD an energy statement would typically include the following information:
Energy efficiency of the building:

- Baseline annual predicted energy demand of the development (regulated and unregulated);
- Baseline annual predicted carbon emission of the development (regulated and unregulated), the Target Emission Rate (TER);
- The contribution of each proposed renewable energy technology;
- Cost information of technically feasible low zero carbon renewable technologies, including additional insulation, low carbon decentralised energy, heat pumps etc;
- Feasibility of district or community heating;
- Summary of the benefits of various energy technologies;
- The total estimated reduction in the development's baseline carbon and/or energy emissions.



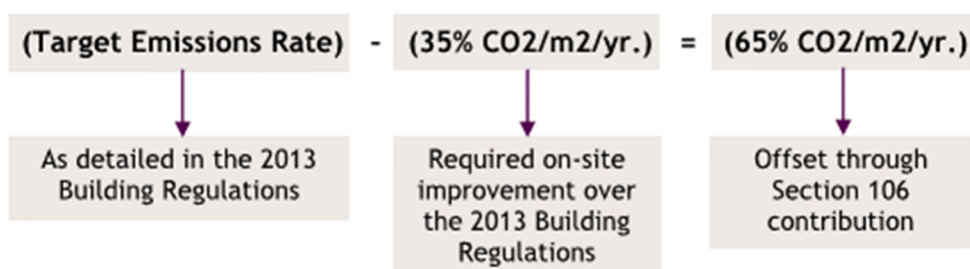
The relevant sections from the Sustainable Design and Construction SPG are as follows:

Table 3.1: Required level of sustainability standard

	Size of Development	Required Standard
New-build residential	Minor (fewer than 10 dwellings)	19% improvement in the dwelling emission rate over the target emission rate, as defined in the 2013 Building Regulations
	Major (10 dwellings or more)	Zero Carbon (or if unachievable, a minimum 35% improvement in the dwelling emission rate over the target emission rate, as defined in the 2013 Building Regulations and planning contribution to offset remaining carbon emissions to zero)
Creation of new residential units through conversion from other uses and/or	Minor (fewer than 10 dwellings)	BREEAM 'Very Good'
	Major (10 dwellings or more)	BREEAM 'Excellent'
Non-residential development (including development for non-C3 residential)	Minor (less than 1,000 sq. m of floorspace)	BREEAM 'Very Good'
	Major (1,000 sq. m of floorspace or more)	BREEAM 'Excellent'
Non-residential refurbishment (including refurbishment for non-C3 residential)	Minor (less than 1,000 sq. m of floorspace)	BREEAM 'Very Good'
	Major (1,000 sq. m of floorspace or more)	BREEAM 'Excellent'

As stated above the requirement for major new residential developments is to achieve Zero Carbon Homes. The policy recognised that is not always achievable and such if not achievable, it must achieve a minimum of 35% improvement in regulated emissions over the Target Emissions Rate (TER) in the 2013 Building Regulations, plus a Section 106 contribution of £1,800 per remaining tonne towards carbon offsetting within the Borough calculated as £60/tonne over a 30 year period). £60 per tonne of carbon is nationally recognized price of carbon and reflects the amount established by the Zero Carbon Hub.

The following calculation should be used to determine contribution:





3.00 ENERGY STRATEGY METHODOLOGY

3.01 Energy Strategy

The fundamental approach adopted for this energy strategy is as follows:

- Establish the baseline energy demand in line with statutory requirements in terms of Building Regulations Part L2A:2013 compliance using accredited thermal modelling software.
- Adopt passive and low energy design techniques in order to reduce the energy demand for the development beyond the baseline energy demand requirements.
- Assess the potential use of decentralised heating, cooling and power.
- Assess the potential use of sitewide district heating type network.
- Assess the potential low and zero carbon (renewable) technologies to suit the development and establish potential energy/carbon dioxide reduction for viable solutions.
- Establish the anticipated energy and carbon dioxide emission reductions for the development using Building Regulations 2013 Calculations Methodology.

This approach is in line with the principles detailed within the relevant policy statements and regulatory guidelines listed in section 2.00.

3.02 Energy Strategy Targets

The target carbon emission savings for this energy strategy are 10% less than the Building Regulations Part L2A:2013 baseline.



4.00 ENERGY DEMAND ASSESSMENT

4.01 General

4.01.01 Principles

The energy demand assessment work has been undertaken using EDSL TAS dynamic simulation software Version 9.4.4 that incorporates the SBEM calculation methodology in line with Building Regulations Part L2A:2013 requirements in order to generate a predicted annual CO₂ emission rate.

Within the energy demand assessment the following fuel carbon dioxide emission intensity factors have been used in line with Part L2A:2013.

Fuel	kg CO₂ / kWhr
Natural gas	0.216
Grid supplied electricity	0.519
Grid displaced electricity	0.519

4.01.02 Regulated and Un-regulated Energy

The planning application energy strategy will be provided in a format that reflects the recommendations of the Reading SPA December 2019.

Therefore this framework energy strategy shows how policy compliance for the “regulated” energy can be achieved at the development and makes reference to the estimated “un-regulated” energy usage by means of energy benchmarks.

For clarity “regulated” and “un-regulated” energy are summarised as follows:

- **Regulated Energy** This is the energy covered by Approved Document L2A of the Building Regulations i.e. the energy used in heating, cooling, fans and pumps plus domestic hot water
- **Un - regulated Energy** This is energy used within a building that is not covered by the Building Regulations i.e. the energy used for general small power loads, lifts, external lighting, catering electricity, etc.

The planning policy CO₂ reduction targets are based in “regulated” energy only. Hence the % CO₂ emission savings target is not adversely affected by the estimated “un-regulated” energy in a building.

The assessed un-regulated energy uses for the proposed development are as follows:

- General small power
- Lifts
- External lighting
- Catering electricity
- Catering gas
- Computer room power



4.01.03 Energy Benchmarks

The “un-regulated” energy use and benchmarks for this energy strategy have been derived from data and guidance taken from the following Chartered Institute of Building Services Engineers (CIBSE) documents:

1. CIBSE Guide F – Energy Efficiency in Buildings: 2012
2. CIBSE Technical Memorandum – Energy Benchmarks TM46: 2008

The un-regulated energy use values have been derived from the CIBSE Guide F Benchmark Section. The specific benchmarks used and the resultant estimated un-regulated energy values are as follows:

Office Office benchmarks good practice type 3 ('standard' air conditioned office) of 49 kWh/m²/year that equates to 23.05 kgCO₂/m²

4.02 Baseline Scheme

The baseline demand is the Building Regulations Part L2A:2013 target emission rate (TER).

The Part L2A:2013 TER is derived from the thermal model based on the National Calculation Methodology (NCM). The review has been carried out utilising the TAS dynamic thermal modelling software version 9.4.4 that has achieved accreditation from the Department of Communities and Local Government (DCLG).

The baseline CO₂ emissions are modelled as follows:-

	CO₂ Emission (kg CO₂/ m²/year)
	Development
Heating	0.59
Cooling	4.71
Fans & pumps	5.19
Lighting	9.91
Domestic Hot Water	0.59
Part L2A: 2013 TER	20.98
Unregulated Uses	23.05
Total	44.03

The annual CO₂ emission resulting from the baseline demand equates to the following:

	CO₂ Emission (tonnes CO₂/year)
	Development
Without unregulated uses	1815.64
With unregulated uses	3810.43



4.03 Energy Efficiency Measures

4.03.01 General

The energy strategy prioritises the reduction in energy consumption and hence CO₂ emissions through the building envelope design together with the use of efficient mechanical and electrical services.

The passive and low energy design principles that have been adopted in the current design include:

- High performance glazing
- Improved building fabric thermal insulation
- Low building air leakage rate (3 m³/hr/m² at 50 Pa which represents a 70 % improvement over the minimum 2013 Building Regulations requirements)
- High efficiency heating and cooling plant
- Variable speed fans and pumps
- Low energy lighting (LED lamp sources)
- Automatic lighting control with occupancy and daylight dimming controls

4.03.02 Development

The Building Regulations thermal model analysis identifies the following CO₂ emissions for the overall Cockfosters Commercial development:

	Part L2A:2013	
	Baseline Scheme (kg CO ₂ /m ² /year)	Lean Scheme (kg CO ₂ /m ² /year)
Heating	0.59	0.58
Cooling	4.71	4.18
Fans and pumps	5.19	7.44
Lighting	9.91	6.27
Domestic Hot Water	0.59	0.59
Part L2A :2013 Total	20.98	19.06
Unregulated Power	23.05	23.05
Total	44.03	42.11

The comparison of the energy efficient scheme against the baseline scheme identifies that for the proposed development there is a predicted 9.15 % (Part L2A 2013) improvement in terms of building emission rate (BER) over the baseline scheme (TER) and then a predicted improvement of 4.36 % (Part L2A:2013) when allowance is made for the unregulated uses.



The annual CO₂ emissions resulting from the passive/low energy scheme equates to the following:

	CO₂ Emission (tonnes CO₂/year)
	Part LA:2013
Without unregulated uses	1649.48
With unregulated uses	3644.27



5.00 DECENTRALISED HEATING, COOLING AND POWER ASSESSMENT

5.01 General

The potential use of decentralised heating, cooling and power for the building has been assessed in relation to the following:

- Decentralised heating
- Decentralised cooling
- Combined heat and power (CHP)
- Combined cooling heat and power (CCHP/trigeneration)

5.02 Decentralised Heating and Cooling

Decentralised heating and cooling relate to a central system that provides the necessary heating and cooling water to more than one use or part of a building or to more than one building. For example, a decentralised heating system can comprise central boiler plant that provides heat to separate dwellings and similarly a decentralised cooling system can comprise central refrigeration plant that provides cooling to individual retail units in a shopping centre.

Two types of decentralised heating and cooling schemes have been considered for the development.

1. Connection to a district energy network (DEN)
2. The provision of a development decentralised energy centre

District Energy Network

Investigations into existing or proposed district energy networks to provide decentralised heating and / or cooling to the development has established that there are proposals by Reading Borough Council to develop networks in some prominent areas in Reading. Heat map has been created by Element Energy which highlight four clusters which will be suitable for heat network schemes. The heat map is demonstrated on Appendix 2 within this report.

The site proposed for the Reading Station Park development discussed within this report will be located in an area where the development could connect to the district heating network in the future.

Therefore, the DES is not a viable option for the development site, however connections will be provided for future connectivity.

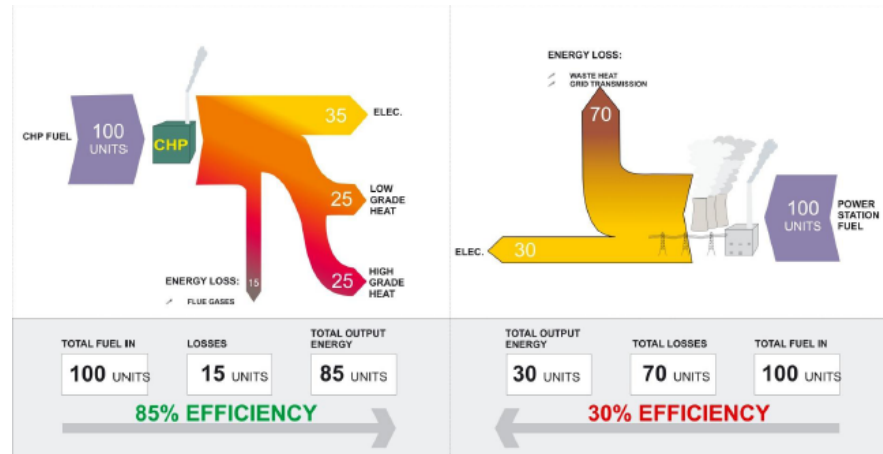
Decentralised Energy Centre

The development will be provided with central plant serving both the office and retail uses. The condenser water system will incorporate heat exchangers that will be used by the retail tenants as their heat source when in heating mode and heat sink when in cooling mode from their fit-out systems. The tenants fit out guide will stipulate that the retail tenants will have to use the condenser water system for their primary heating and cooling.



5.03 Combined Heat and Power

Combined Heat and Power (CHP) generates electricity on site and recovers a proportion of the waste heat for use in heating and/or hot water generation for the building. This allows the overall efficiency to be significantly greater than the electricity generated via power stations feeding the National Grid. The CHP plant typically uses gas as the primary energy source and often incorporates a thermal store. Biomass fuelled CHP is possible however this is typically only for very large schemes due to operational difficulties with smaller capacity units.



CHP systems are typically considered only to be viable where they are able to run for at least 5000 hours per annum and have an appropriate year-round heating demand.

The domestic hot water service (HWS) requirement for a hotel development is relatively high. The CHP has the potential to operate beyond 5000 hours per annum in a hotel environment unlike an office where the HWS demand is very low. The displaced electricity produced shall be utilised by the development which offers a clean source of energy.

With the de-carbonisation of the grid using natural gas as a fuel source is no longer sustainable. CHP systems is also considered to contribute to air pollution and as such this system is not viable system for the development.

5.04 Combined Cooling, Heat and Power





Combined Cooling, Heat and Power (CCHP) that is often referred to as trigeneration uses the same principles as detailed above for a CHP system however the heat produced is also used to generate cooling via an absorption chiller. The CCHP plant can make use of heat generated by the CHP plant in buildings with a cooling demand.

Similar to CHP plant the CCHP system is typically considered only to be viable where they are able to run for at least 5,000 hours per year and have an appropriate year-round usage for the heat generated from the CCHP plant.

The absorption chiller incorporated within a CCHP scheme has a very low efficiency that means due to the building size, load characteristics and use of a high efficiency water cooled system it realistically offers very limited benefits. Therefore, a CCHP system is not considered to be suitable for the development.

5.05 Decentralised Heating, Cooling and Power Analysis

The thermal model has been repeated incorporating a CHP system to contribute to the domestic hot water load for the hotel areas only and the results are:

	Baseline Scheme (kg CO ₂ /m ² /year)	Lean Scheme (kg CO ₂ /m ² /year)	Clean Scheme (kg CO ₂ /m ² /year)
Heating	0.59	0.58	0.59
Cooling	4.71	4.18	4.18
Fans and pumps	5.19	7.44	7.44
Lighting	9.91	6.27	6.27
Domestic Hot Water	0.59	0.59	0.71
Displaced Electricity	0.00	0.00	-0.16
Part L2A: 2013 Total	20.98	19.06	19.03
Unregulated Power	23.05	23.05	23.05
Total	44.03	42.11	42.08

The annual CO₂ emissions incorporating a CHP system are 17.70 kg CO₂/m².
The improvement over the lean scheme is 0.16%.

The annual CO₂ emissions allowing for un-regulated energy uses are 42.08 kg CO₂/m².

The improvement over the lean scheme when un-regulated energy uses are incorporated is 0.07%.

The annual CO₂ emissions resulting from the clean scheme with a CHP system equates to 1646.89 tonnes without un-regulated uses and then 3641.67 tonnes when un-regulated uses are taken into account.



6.00 RENEWABLE ENERGY ASSESSMENT

6.01 General

The potential use of renewable energy technology has been undertaken for the following:

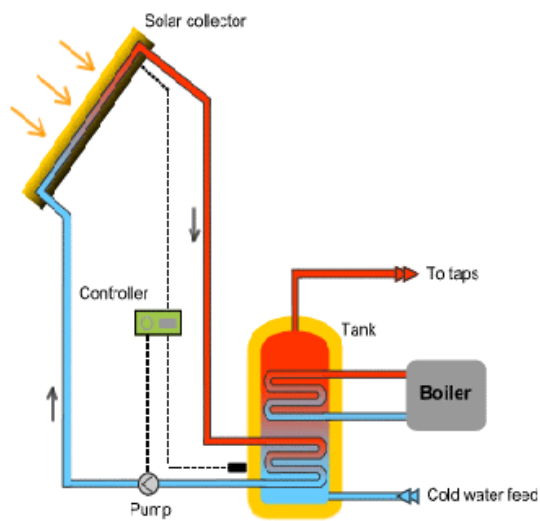
- Solar water heating
- Wind turbines
- Photovoltaic cells
- Biomass
- Ground source heating and cooling
- Air source heating and cooling
- Fuel cell

6.02 Solar Water Heating

Solar thermal panels utilise the sun's energy to generate hot water for use within the building. The panels are commonly provided in either flat plate or evacuated tube arrangements. The panels are ideally located facing south at an approximate 30° inclination angle in areas where they are not subjected to shade.



The development has the potential to use solar water heating to pre-heat the domestic hot water service, but as the development is provided with a heat pump the benefit of having solar thermal panels is limited and as such not viable for the development.



6.03 Wind Turbines

Wind turbines generate electrical energy derived from kinetic energy provided by the local wind resource. The performance of wind turbines depends greatly on the wind speed and turbulence that in turn is influenced by the terrain and installation height.





In urban areas non-laminar wind flow occurs as a result of turbulence due primarily to adjacent buildings. There is growing evidence of urban wind turbines failing to perform in line with manufacturer's estimated outputs and as a result wind turbines are likely to produce only modest power outputs with corresponding low carbon dioxide emission reduction within urban sites.

For the reasons detailed above wind turbines are not considered viable for the development.

6.04 Photovoltaic Cells

Photovoltaic (PV) panels utilise the sun's energy to generate electricity. The optimum location for PV panels is south facing at an approximate 30° inclination angle in areas where they are not subjected to shade.





The development has unshaded roof areas that could be utilised for PV panels. Based on various site constraints only the roof of Block D has available space for a PV installation and an area of 30m² of PV panels can be accommodated. The contribution from the PV installation shall be put towards Block A, Block B, Block C and Block D.

6.05 Biomass

Biomass is considered to be a renewable fuel source as the CO₂ absorbed during the growth period is assessed as being approximately equal to the CO₂ emitted during combustion and hence deemed "carbon neutral". Biomass for boilers is typically wood either in chip or pellet form.

Biomass boilers require fuel storage together with associated transportation and delivery to the store location. Biomass boilers also increase the NO_x emissions when compared to gas fired boilers.



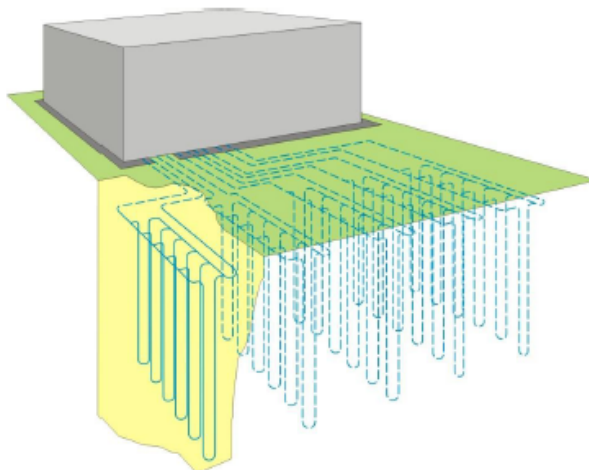


For this development there is no realistic space within the overall development for fuel storage together with the site constraints related to the associated delivery requirements. In addition, there are on-going concerns with regard to the potential impact on local air quality.

For the reasons defined above the use of biomass is not considered viable for the development.

6.06 Ground Source Heating and Cooling

Ground source heating and cooling systems utilise the principle during heating mode of upgrading heat from the ground to a usable temperature and during cooling mode of rejecting heat from the building into the ground. There are two primary methods utilising either open or closed loop systems.



The open loop system extracts water, typically from the chalk aquifer, and uses this water in either the heating or cooling process before rejecting this heat back to the aquifer in a separate borehole. The open loop system requires licence approval from the Environment Agency that typically has a 10-year duration.

The closed loop system dissipates heat to or extracts heat from the ground via pipework circuits that are typically inserted into vertical boreholes. These generally do not require Environment Agency licences as no extraction of water from the aquifer takes place.



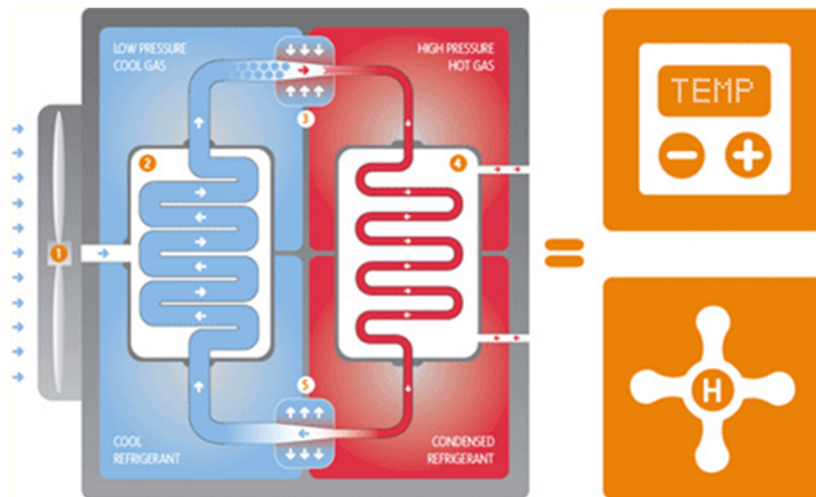
Generally, for both the open and closed loop options heat pumps are used in order to generate the heating and cooling water temperatures needed within a building.

A combined heat and power (CHP) system is proposed for the development which will meet the demand of this development. A connection shall be provided to the district energy network when available.

For these reasons a ground source heating and cooling system is not considered viable for the development.

6.07 Air Source Heating and Cooling

Air sourced heat pump (ASHP) works on the same principles as a ground source heat pump (GSHP) however the medium in which heat is extracted is the external air rather than the ground. The ASHP can be reversed to provide cooling when required. ASHP will generally have a lower seasonal coefficient of performance when compared to GSHP.



A condensate water system (water to water heat pump) is proposed for the development which will meet the heating, cooling and hot water demand of this development. The condensate water system will incorporate dry air coolers and heat pumps to meet the demands of the office area (Block A to D). As the cooling and heating demand is met by the condensate water system an ASHP installation is not considered viable for this development.

6.08 Fuel Cell

The fuel cell technology essentially converts chemical energy into both electrical and heat energy. The cell needs to be continually supplied with hydrogen (derived from either a piped or storage source) and oxygen (derived from air) which are combined, and the chemical reaction produces electrical energy, heat energy and water vapour.

The fuel cell requires a hydrogen fuel source that can either be from a piped source (not currently available) or from stored gas. However, the more usual approach currently in the UK is to use natural gas in order to generate the hydrogen required to operate the fuel cell.

Fuel cells have various commercial and technical limitations. There is a high initial capital cost together with there being few established suppliers and a very limited specialist design, installation and maintenance capabilities. Certain fuel cell elements require regular



replacement imposing a significant on-going cost implication. The fuel cells themselves are generally large, heavy and require fresh air ventilation.

Due to the initial capital cost, space requirements and on-going maintenance costs fuel cells are not considered viable for this development.

6.09 Renewable Energy Analysis

6.09.01 Viable LZCs

The proposed renewable energy sources for the development, applicable to the development, are:

Photovoltaic Panel System - 30m² of PV array is proposed for this development

6.09.02 Development

The results for the development incorporating renewable energy technologies are as follows:

	Baseline Scheme (kg CO ₂ /m ² /year)	Lean Scheme (kg CO ₂ /m ² /year)	Clean Scheme (kg CO ₂ /m ² /year)	LZC Scheme (kg CO ₂ /m ² /year)
Heating	0.59	0.58	0.59	0.19
Cooling	4.71	4.18	4.18	2.55
Fans and pumps	5.19	7.44	7.44	7.44
Lighting	9.91	6.27	6.27	6.27
Domestic Hot Water	0.59	0.59	0.71	0.20
Displaced Electricity	0.00	0.00	-0.16	-0.03
Part L2A: 2013 Total	20.98	19.06	19.03	16.62
Unregulated Power	23.05	23.05	23.05	23.05
Total	44.03	42.11	42.08	39.67

The annual CO₂ emissions for the overall development incorporating renewable energy technologies are 16.62 kg CO₂/m².

The improvement with renewable energy technologies over the clean scheme is 12.66% and the improvement with renewable technologies over the baseline scheme is 20.78%.

The annual CO₂ emissions for the overall development allowing for un-regulated energy uses with the renewable energy technologies are 39.67 kg CO₂/m².

The improvement with renewable energy technologies over the clean scheme when un-regulated energy uses are incorporated is 5.73 % and the improvement with renewable technologies over the baseline scheme is 9.90%.

The annual CO₂ emissions resulting from the green scheme with renewable energy technologies equates to 1438.32 tonnes without un-regulated uses and then 3433.11 tonnes when un-regulated uses are taken into account.



7.00 OVERHEATING AND COOLING

The building design has adopted the following principles in order to reduce potential overheating and comfort cooling system operation:

- Balance between solid and glazed elements within the façade whilst taking into account the building design aesthetic requirements
- Energy efficient design measures such as low energy LED lighting with occupancy control and automatic daylight dimming, and variable speed fans to reduce motor heat gain
- High performance glazing to reduce heat losses and solar heat gain
- Mechanical fresh air ventilation system that can provide free cooling during certain times of the year



8.00 OVERALL BUILDING ANALYSIS

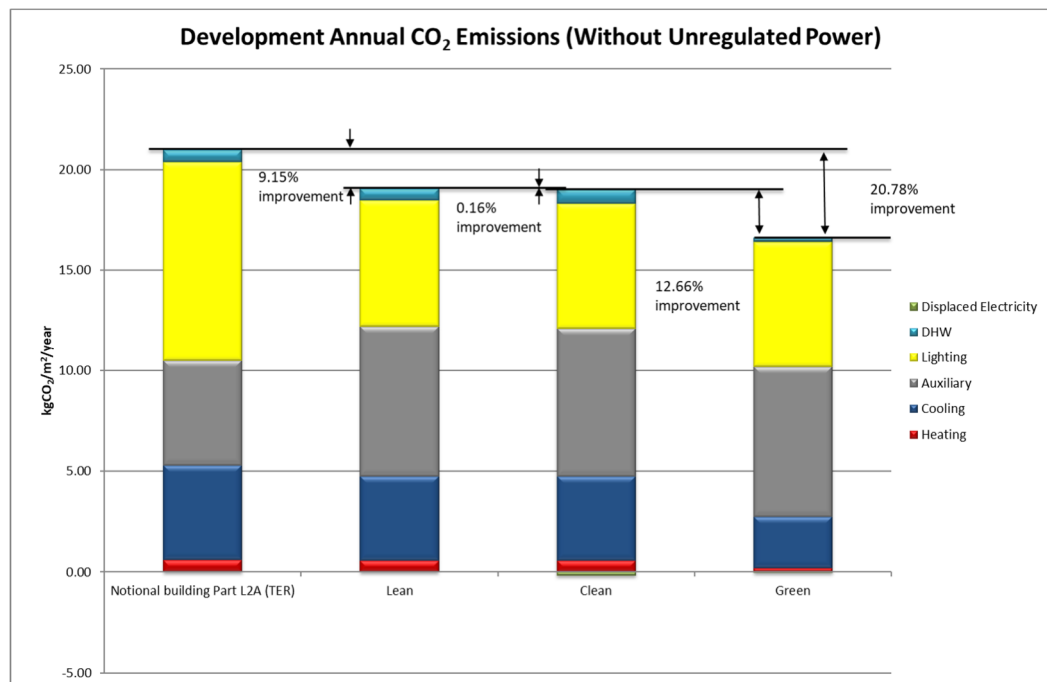
8.01 Carbon Reduction – Building Regulation 2013 Baseline

The overall building analysis can then be summarised as follows:

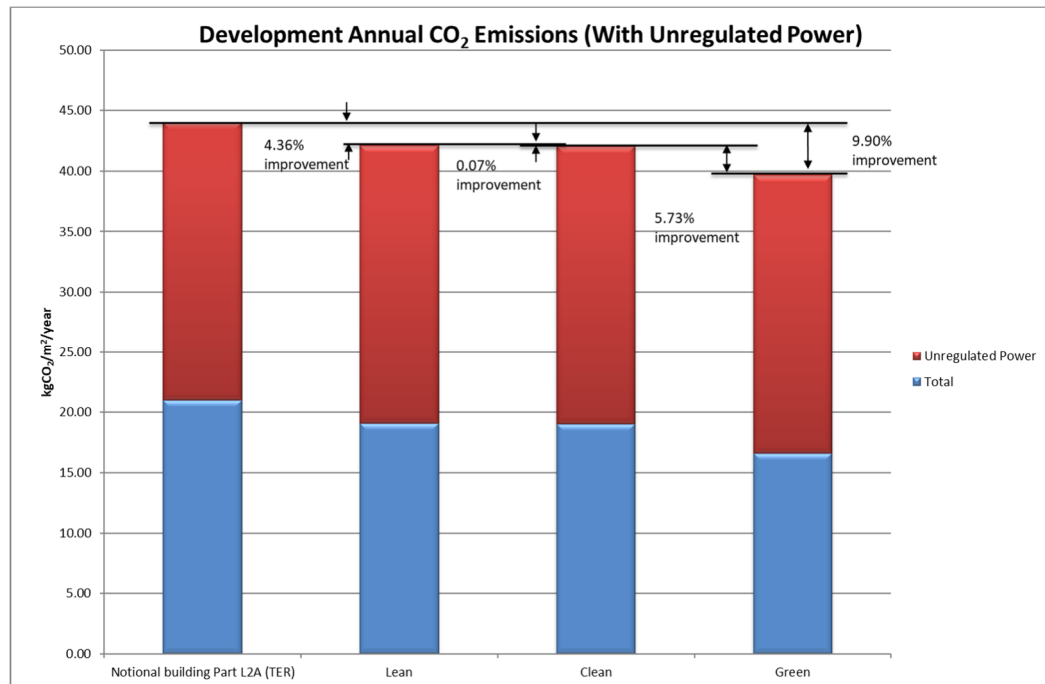
	kg CO ₂ /m ²			
	Baseline Scheme	Lean Scheme (with passive/low energy)	Clean Scheme	LZC Scheme
Building Regulations Compliant	20.98	19.06	19.03	16.62
Allowing for Un-regulated Uses	44.03	42.11	42.08	39.67

These values are shown in diagrammatic form below that shows the following principles:

- The proposed scheme (LZC) assessment shows a predicted improvement of 20.78 % when compared to the baseline scheme
- The renewable energy technologies show a predicted improvement of 12.66 % over the clean scheme
- When un-regulated energy uses are taken into account the predicted overall improvement is 9.90 % compared to the baseline scheme with renewable energy technologies showing a predicted 5.73 % improvement over the clean scheme



Based on the regulated power results indicated above the proposed scheme incorporating a renewable energy technology provides a carbon emissions reduction of 20.78 % when compared to the baseline Building Regulations 2013 (TER) compliant scheme.



The predicted annual CO₂ emissions data is as follows:

	Tonnes CO ₂ /m ²			
	Baseline Scheme	Lean Scheme (with passive/low energy)	Clean Scheme	LZC Scheme
Building Regulations Compliant	1815.64	1649.48	1646.89	1438.32
Allowing for Un-regulated Uses	3810.43	3644.27	3641.67	3433.11

The carbon emission savings as a result of the proposed measures based on the current design are predicted as follows:

	CO ₂ Emission (tonnes CO ₂ /year)	With Un-Regulated Uses CO ₂ Emission (tonnes CO ₂ /year)
Baseline scheme	1815.64	3810.43
LZC Scheme	1438.32	3433.11
Saving over baseline scheme	377.32	377.32



9.00 CONCLUSIONS

In line with the relevant planning policies and guidelines the energy strategy has demonstrated that the proposed development could adopt the hierarchical approach of using passive and low energy design technologies to reduce the baseline energy demand and hence CO₂ emissions followed by the application of low and zero carbon technologies as appropriate.

The focus of the energy strategy is on CO₂ reduction from the building by adopting a highly efficient building envelope solution together with high efficiency mechanical and electrical services incorporating heat recovery. The renewable energy technologies assessment is based on using solutions that are technically proven with low maintenance implications taking into account the energy efficiency strategies being proposed in the current design.

The analysis has shown that by incorporating passive and low energy design measures there is a predicted reduction in the development's annual CO₂ emissions, as indicated in the table below, from the baseline scheme.

Regulated CO ₂ Savings	
Tonnes CO ₂ /Year	%
166.16	9.15

This is achieved by the following elements:

- High performance glazing
- Improved building fabric thermal insulation
- Low building air leakage rate
- High efficiency heating plant
- High efficiency water cooled chillers with cooling towers
- Variable speed fans and pumps
- Low energy lighting (LED lighting)
- Automatic lighting control with occupancy and daylight dimming controls

The decentralised heating, cooling and power assessment has indicated that the application of these systems and technologies are either not available to the scheme or are not viable for the scheme, however valve connections will be provided for future district heating connectivity.

Regulated CO ₂ Savings	
Tonnes CO ₂ /Year	%
2.60	0.14

The potential renewable energy technologies have been assessed taking into account the particular development constraints. The strategy is to utilise:

- Photovoltaic panels to be utilised to contribute towards the energy consumption of the development.

The analysis has shown that by incorporating these renewable energy technologies in addition to the passive and low energy design measures there is a predicted reduction of annual CO₂ emissions from the baseline scheme as indicated in the table below:



Regulated CO ₂ Savings	
Tonnes CO ₂ /Year	%
208.57	11.49

The renewable energy technologies are currently predicted to achieve a 20.78 % reduction in carbon emissions based on regulated uses.

When the un-regulated uses are factored into the analysis then there is an overall predicted reduction of 9.90 % in the development annual CO₂ emissions.

The overall energy strategy identifies a predicted annual carbon emission saving of 377.32 tonnes over the baseline scheme (without unregulated energy).

As described within section 2.00 of this report the Reading SPG does not state a carbon emission reduction for non-residential developments. The policy asked that all major non-residential development to achieve BREEAM 'Excellent'.



Appendix 1
Fabric Efficiency



Building envelope thermal performance as detailed below:

Heat Loss Fabric Element	U-Values (W/m ² .K)	Further Details
Ground Floor	0.14	
Roof	0.15	
External wall	0.14	
Windows	1.2	G-Value:0.33, Light Transmission 0.64

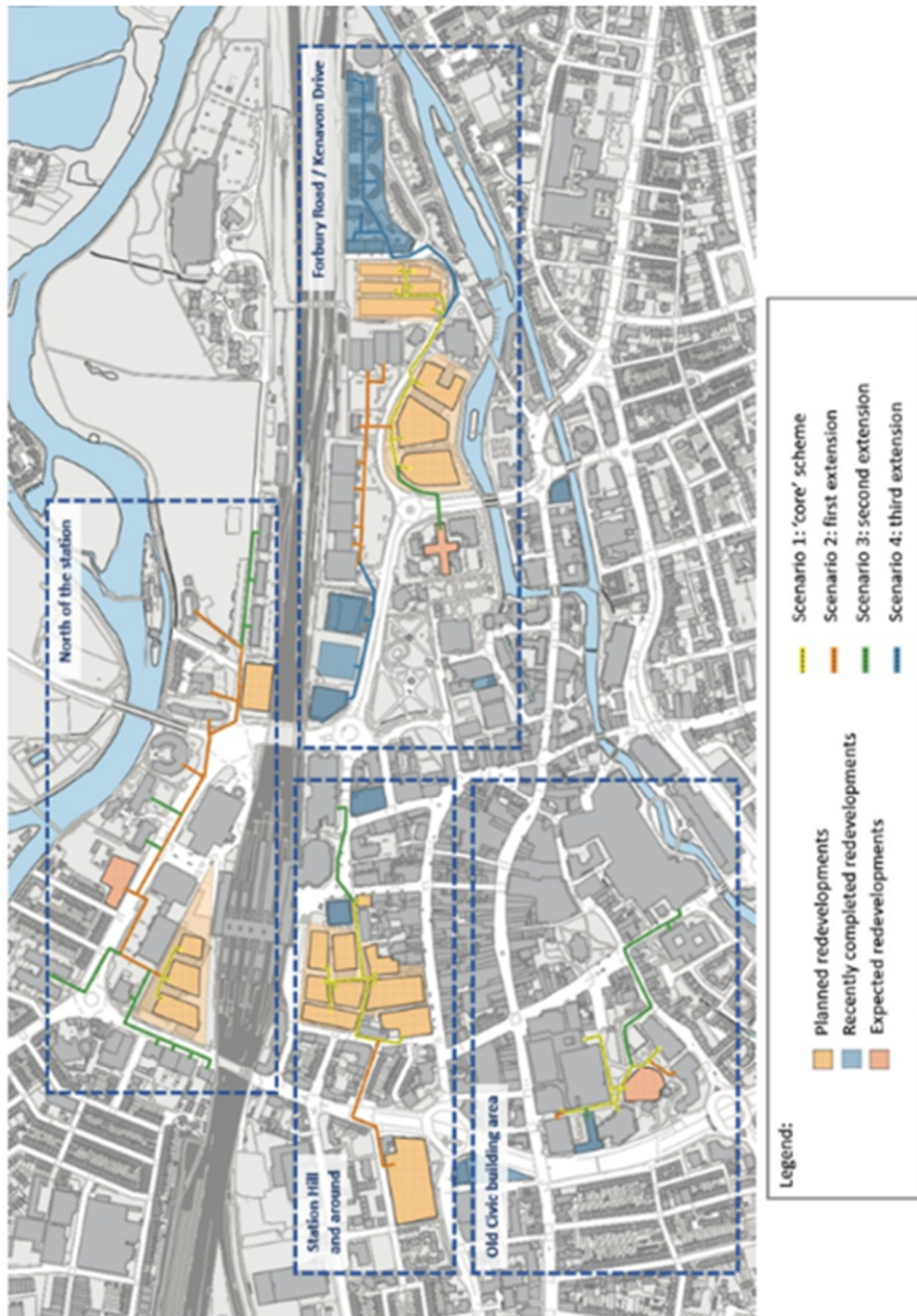
Air permeability (m³/hr.m² @50Pa for each apartments) to be accompanied by certificate in line with SAP requirements: 3 m³/hr.m² @50Pa



Appendix 2

Reading Heat Map Network

Reading Station Park, Caversham Road, RG1 8BA Non-Residential Energy Strategy





Appendix 3
Lean Scheme BRUKL

Project name

Reading Station Park - Lean Scheme

As designed

Date: Tue Feb 11 13:03:32 2020

Administrative information

Building Details

Address: Reading Station Park, Reading, RG1 8BA

Certification tool

Calculation engine: TAS

Calculation engine version: "v9.5.0"

Interface to calculation engine: TAS

Interface to calculation engine version: v9.5.0

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

Owner Details

Name: Aviva Investors

Telephone number: 02078096367

Address: Saint Helen's, 1 Undershaft, London, EC3P 3DQ

Certifier details

Name: Scott Hedges

Telephone number: 01932753739

Address: 51 Staines Road West, Sunbury-on-Thames, TW16 7AH

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

CO ₂ emission rate from the notional building, kgCO ₂ /m ² .annum	21
Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	21
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	19.1
Are emissions from the building less than or equal to the target?	BER ≤ TER
Are as built details the same as used in the BER calculations?	Separate submission

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

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

Building fabric

Element	U _a -Limit	U _a -Calc	U _i -Calc	Surface where the maximum value occurs*
Wall**	0.35	0.14	0.14	External Wall
Floor	0.25	0.14	0.14	Ground Floor
Roof	0.25	0.15	0.15	Roof
Windows***, roof windows, and rooflights	2.2	1.21	1.21	External Wall (70% Glazed)
Personnel doors	2.2	-	-	No personal doors in project
Vehicle access & similar large doors	1.5	-	-	No vehicle doors in project
High usage entrance doors	3.5	-	-	No high usage entrance doors in project
U _a -Limit = Limiting area-weighted average U-values [W/(m ² K)] U _a -Calc = Calculated area-weighted average U-values [W/(m ² K)] U _i -Calc = Calculated maximum individual element U-values [W/(m ² K)]				
* There might be more than one surface where the maximum U-value occurs. ** Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows. *** Display windows and similar glazing are excluded from the U-value check. N.B.: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.				

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

Building services

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

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

1- Office (700 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.91	3.6	-	1.9	0.7
Standard value	0.91*	2.6	N/A	1.6^	0.65
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for gas single boiler systems <=2 MW output. For single boiler systems >2 MW or multi-boiler systems, (overall) limiting efficiency is 0.86. For any individual boiler in a multi-boiler system, limiting efficiency is 0.82.					
^ Limiting SFP may be extended by the amounts specified in the Non-Domestic Building Services Compliance Guide if the system includes additional components as listed in the Guide.					

2- Circulation

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.91	-	-	-	-
Standard value	0.91*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for gas single boiler systems <=2 MW output. For single boiler systems >2 MW or multi-boiler systems, (overall) limiting efficiency is 0.86. For any individual boiler in a multi-boiler system, limiting efficiency is 0.82.					

3- Toilet (164 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.91	-	-	-	-
Standard value	0.91*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for gas single boiler systems <=2 MW output. For single boiler systems >2 MW or multi-boiler systems, (overall) limiting efficiency is 0.86. For any individual boiler in a multi-boiler system, limiting efficiency is 0.82.					

4- Refuse (4 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.91	-	-	-	-
Standard value	0.91*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for gas single boiler systems <=2 MW output. For single boiler systems >2 MW or multi-boiler systems, (overall) limiting efficiency is 0.86. For any individual boiler in a multi-boiler system, limiting efficiency is 0.82.					

1- DHW

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	0.91	0
Standard value	0.9*	N/A
* Standard shown is for gas boilers >30 kW output. For boilers <=30 kW output, limiting efficiency is 0.73.		

Local mechanical ventilation, exhaust, and terminal units

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

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1		Zone	Standard
Bldg A - B1_Office 1	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 2	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 3	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 4	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 5	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 6	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 7	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 8	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 9	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 10	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 11	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 12	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 13	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 14	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 15	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 16	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 17	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 18	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 19	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 20	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 21	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 22	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 23	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 24	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 25	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 26	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 27	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 28	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 29	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 30	-	-	-	-	-	-	-	0.3	-	-	-	N/A
Bldg A - B1_Office 31	-	-	-	-	-	-	-	0.3	-	-	-	N/A

Zone name	SFP [W/(I/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I	Zone	Standard
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1		
Bldg A - B1_Office 32	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 33	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 34	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 35	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 36	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 37	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 38	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 39	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 40	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 41	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 42	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 43	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 44	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 45	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 46	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 47	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 48	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 49	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 50	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 51	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 52	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 53	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 54	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 55	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 56	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 57	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 58	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 59	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 60	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 61	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 62	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 63	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 64	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 65	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 66	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 67	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 68	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 69	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 70	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 71	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 72	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 73	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 74	-	-	-	-	-	-	-	0.3	-	-	N/A

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I	Zone	Standard
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1		
Bldg A - B1_Office 75	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 76	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 77	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 78	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 79	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 80	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 81	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 82	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 83	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 84	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 85	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 86	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 87	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 88	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 89	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 90	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 91	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 92	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 93	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 94	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 95	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 96	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 97	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 98	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 99	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 100	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 1	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 2	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 3	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 4	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 5	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 6	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 7	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 8	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 9	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 10	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 11	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 12	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 13	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 14	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 15	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 16	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 17	-	-	-	-	-	-	-	0.3	-	-	N/A

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I	Zone	Standard
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1		
Bldg B - B1_Office 18	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 19	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 20	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 21	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 22	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 23	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 24	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 25	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 26	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 27	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 28	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 29	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 30	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 31	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 32	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 33	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 34	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 35	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 36	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 37	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 38	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 39	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 40	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 41	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 42	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 43	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 44	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 45	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 46	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 47	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 48	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 49	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 50	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 51	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 52	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 53	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 54	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 55	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 56	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 57	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 58	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 59	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 60	-	-	-	-	-	-	-	0.3	-	-	N/A

Zone name	SFP [W/(I/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I	Zone	Standard
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1		
Bldg B - B1_Office 61	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 62	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 63	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 64	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 65	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 66	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 67	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 68	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 69	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 70	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 71	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 72	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 73	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 74	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 75	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 76	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 77	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 78	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 79	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 80	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 81	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 82	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 83	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 84	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 85	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 86	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 87	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 88	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 89	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 90	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 91	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 92	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 93	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 94	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 95	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 96	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 97	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 98	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 99	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 100	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 1	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 2	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 3	-	-	-	-	-	-	-	0.3	-	-	N/A

Zone name	SFP [W/(I/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I	Zone	Standard
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1		
Bldg C - B1_Office 4	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 5	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 6	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 7	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 9	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 10	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 11	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 12	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 13	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 14	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 15	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 16	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 17	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 18	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 19	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 20	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 21	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 22	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 23	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 24	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 25	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 26	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 27	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 28	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 29	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 30	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 31	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 32	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 33	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 34	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 35	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 36	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 37	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 38	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 39	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 40	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 41	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 42	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 43	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 44	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 45	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 46	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 47	-	-	-	-	-	-	-	0.3	-	-	N/A

Zone name	SFP [W/(I/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I	Zone	Standard
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1		
Bldg C - B1_Office 48	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 49	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 50	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 51	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 52	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 53	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 54	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 55	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 56	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 57	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 58	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 59	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 60	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 61	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 62	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 63	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 64	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 65	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 66	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 67	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 68	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 69	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 70	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 71	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 72	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 73	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 74	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 75	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 76	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 77	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 78	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 79	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 80	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 81	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 82	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 83	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 84	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 85	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 86	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 87	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 88	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 89	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 90	-	-	-	-	-	-	-	0.3	-	-	N/A

Zone name	SFP [W/(I/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard	
Bldg C - B1_Office 91	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 92	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 93	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 94	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 95	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 96	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 97	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 98	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 99	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 100	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 1	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 2	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 3	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 4	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 5	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 6	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 7	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 8	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 9	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 10	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 11	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 12	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 13	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 14	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 15	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 16	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 17	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 18	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 19	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 20	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 21	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 22	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 23	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 24	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 25	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 26	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 27	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 28	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 29	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 30	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 31	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 32	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 33	-	-	-	-	-	-	-	0.3	-	-	N/A	

Zone name	SFP [W/(I/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard	
Bldg D - B1_Office 34	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 35	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 36	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 37	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 38	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 39	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 40	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 41	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 42	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 43	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 44	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 45	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 46	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 47	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 48	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 49	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 50	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 51	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 52	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 53	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 54	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 55	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 56	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 57	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 58	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 59	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 60	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 61	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 62	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 63	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 64	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 65	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 66	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 67	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 68	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 69	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 70	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 71	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 72	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 73	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 74	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 75	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 76	-	-	-	-	-	-	-	0.3	-	-	N/A	

Zone name	SFP [W/(I/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I	Zone	Standard
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1		
Bldg D - B1_Office 77	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 78	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 79	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 80	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 81	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 82	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 83	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 84	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 85	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 86	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 87	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 88	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 89	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 90	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 91	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 92	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 93	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 94	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 95	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 96	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 97	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 98	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 99	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 100	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 101	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 102	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 103	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 104	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 105	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 106	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 107	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 108	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 109	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 110	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 111	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 112	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 113	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 114	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 115	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 116	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 117	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 118	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Office 119	-	-	-	-	-	-	-	0.3	-	-	N/A

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard	
Bldg A - B1_Office 120	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 121	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 122	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 123	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 124	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 125	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 126	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 127	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 128	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 129	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 130	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 131	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 132	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 133	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 134	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 135	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 136	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 137	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 138	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 139	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 140	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 141	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 142	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 143	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 144	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 145	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 146	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 147	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 148	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 149	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 150	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 151	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 152	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 153	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 154	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 155	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 156	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 157	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 158	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 159	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg A - B1_Office 160	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg B - B1_Office 101	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg B - B1_Office 102	-	-	-	-	-	-	-	0.3	-	-	N/A	

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
Bldg B - B1_Office 103	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 104	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 105	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 106	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 107	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 108	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 109	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 110	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 111	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 112	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 113	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 114	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 115	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 116	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 117	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 118	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 119	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 120	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 121	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 122	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 123	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 124	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 125	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 126	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 127	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 128	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 129	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 130	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 131	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 132	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 133	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 134	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 135	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 136	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 137	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 138	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 139	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 140	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 141	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 142	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 143	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 144	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 145	-	-	-	-	-	-	-	0.3	-	-	N/A

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
Bldg B - B1_Office 146	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 147	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 148	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 149	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 150	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 151	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 152	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 153	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 154	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 155	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 156	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 157	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 158	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 159	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 160	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 161	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 162	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 163	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 164	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 165	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 166	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 167	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 168	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 169	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 170	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 171	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 172	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 173	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 174	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 175	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 176	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 177	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg B - B1_Office 178	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 101	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 102	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 103	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 104	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 105	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 106	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 107	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 108	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 109	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 110	-	-	-	-	-	-	-	0.3	-	-	N/A

Zone name	SFP [W/(I/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I	Zone	Standard
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1		
Bldg C - B1_Office 111	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 112	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 113	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 114	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 115	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 116	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 117	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 118	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 119	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 120	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 121	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 122	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 123	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 124	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 125	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 126	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 127	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 128	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 129	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 130	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 131	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 132	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 133	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 134	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 135	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 136	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 137	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 138	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 139	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 140	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 141	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 142	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 143	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 144	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 145	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 146	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 147	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 148	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 149	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 150	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 151	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 152	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg C - B1_Office 153	-	-	-	-	-	-	-	0.3	-	-	N/A

Zone name	SFP [W/(I/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard	
Bldg C - B1_Office 154	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 155	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 156	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 157	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 158	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 159	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 160	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 161	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 162	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 163	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 164	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 165	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 166	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 167	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 168	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 169	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 170	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 171	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 172	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 173	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 174	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 175	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 176	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 177	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 178	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 179	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 180	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 181	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 182	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 183	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 184	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 185	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 186	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 187	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 188	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 189	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 190	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 191	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 192	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 193	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 194	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 195	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 196	-	-	-	-	-	-	-	0.3	-	-	N/A	

Zone name	SFP [W/(I/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard	
Bldg C - B1_Office 197	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 198	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 199	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 200	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg C - B1_Office 201	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 101	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 102	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 103	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 104	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 105	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 106	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 107	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 108	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 109	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 110	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 111	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 112	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 113	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 114	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 115	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 116	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 117	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 118	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 119	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 120	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 121	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 122	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 123	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 124	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 125	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 126	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 127	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 128	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 129	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 130	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 131	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 132	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 133	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 134	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 135	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 136	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 137	-	-	-	-	-	-	-	0.3	-	-	N/A	
Bldg D - B1_Office 138	-	-	-	-	-	-	-	0.3	-	-	N/A	

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I	Zone	Standard
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1		
Bldg D - B1_Office 139	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 140	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 141	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 142	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 143	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 144	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 145	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 146	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 147	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 148	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 149	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 150	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 151	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 152	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 153	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 154	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 155	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 156	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 157	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 158	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 159	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 160	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 161	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg D - B1_Office 162	-	-	-	-	-	-	-	0.3	-	-	N/A
Bldg A - B1_Toilet 1	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg A - B1_Toilet 2	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg A - B1_Toilet 3	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg A - B1_Toilet 4	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg A - B1_Toilet 5	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg A - B1_Toilet 6	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg A - B1_Toilet 7	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg A - B1_Toilet 8	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg A - B1_Toilet 9	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg A - B1_Toilet 10	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg A - B1_Toilet 11	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg A - B1_Toilet 12	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg A - B1_Toilet 13	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg A - B1_Toilet 14	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg A - B1_Toilet 15	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg A - B1_Toilet 16	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 1	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 2	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 3	0.5	-	-	-	-	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
Bldg B - B1_Toilet 4	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 5	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 6	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 7	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 8	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 9	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 10	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 11	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 12	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 13	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 14	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 15	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 16	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 17	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 18	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 19	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 20	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 21	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 22	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 23	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 24	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 25	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 26	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 27	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 28	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 29	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 30	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 31	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 32	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 33	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 34	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 35	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 36	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 37	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 38	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 39	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg B - B1_Toilet 40	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 1	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 2	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 3	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 4	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 5	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 6	0.5	-	-	-	-	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I	Zone	Standard
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1		
Bldg C - B1_Toilet 7	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 8	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 9	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 10	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 11	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 12	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 13	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 14	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 15	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 16	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 17	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 18	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 19	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 20	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 21	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 22	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 23	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 24	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 25	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 26	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 27	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 28	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 29	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 30	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 31	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 32	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 33	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 34	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 35	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 36	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 37	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 38	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 39	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg C - B1_Toilet 40	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg D - B1_Toilet 1	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg D - B1_Toilet 2	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg D - B1_Toilet 3	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg D - B1_Toilet 4	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg D - B1_Toilet 5	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg D - B1_Toilet 6	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg D - B1_Toilet 7	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg D - B1_Toilet 8	0.5	-	-	-	-	-	-	-	-	-	N/A
Bldg D - B1_Toilet 9	0.5	-	-	-	-	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard	
Bldg D - B1_Toilet 10	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 11	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 12	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 13	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 14	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 15	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 16	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 17	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 18	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 19	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 20	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 21	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 22	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 23	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 24	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 25	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 26	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 27	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 28	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 29	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 30	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 31	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 32	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 33	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 34	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 35	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 36	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 37	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 38	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 39	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 40	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg B - B1_Toilet 41	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg B - B1_Toilet 42	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg B - B1_Toilet 43	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg B - B1_Toilet 44	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg C - B1_Toilet 41	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg C - B1_Toilet 42	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg C - B1_Toilet 43	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg C - B1_Toilet 44	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg C - B1_Toilet 45	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg C - B1_Toilet 46	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg C - B1_Toilet 47	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg C - B1_Toilet 48	0.5	-	-	-	-	-	-	-	-	-	N/A	

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard	
Bldg D - B1_Toilet 41	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 42	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 43	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 44	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 45	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 46	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 47	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 48	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 49	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 50	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 51	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 52	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 53	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 54	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 55	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Toilet 56	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg A - B1_Store (Refuse) 1	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg B - B1_Store (Refuse) 1	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg C - B1_Store (Refuse) 1	0.5	-	-	-	-	-	-	-	-	-	N/A	
Bldg D - B1_Store (Refuse) 1	0.5	-	-	-	-	-	-	-	-	-	N/A	

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg A - B1_Office 1		100	-	-	543
Bldg A - B1_Office 2		100	-	-	967
Bldg A - B1_Office 3		100	-	-	205
Bldg A - B1_Office 4		100	-	-	611
Bldg A - B1_Office 5		100	-	-	197
Bldg A - B1_Office 6		100	-	-	725
Bldg A - B1_Office 7		100	-	-	616
Bldg A - B1_Office 8		100	-	-	471
Bldg A - B1_Office 9		100	-	-	3577
Bldg A - B1_Office 10		100	-	-	159
Bldg A - B1_Office 11		100	-	-	198
Bldg A - B1_Office 12		100	-	-	445
Bldg A - B1_Office 13		100	-	-	1072
Bldg A - B1_Office 14		100	-	-	967
Bldg A - B1_Office 15		100	-	-	205
Bldg A - B1_Office 16		100	-	-	155
Bldg A - B1_Office 17		100	-	-	171
Bldg A - B1_Office 18		100	-	-	197
Bldg A - B1_Office 19		100	-	-	725

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg A - B1_Office 20		100	-	-	616
Bldg A - B1_Office 21		100	-	-	191
Bldg A - B1_Office 22		100	-	-	4709
Bldg A - B1_Office 23		100	-	-	159
Bldg A - B1_Office 24		100	-	-	198
Bldg A - B1_Office 25		100	-	-	445
Bldg A - B1_Office 26		100	-	-	1072
Bldg A - B1_Office 27		100	-	-	967
Bldg A - B1_Office 28		100	-	-	205
Bldg A - B1_Office 29		100	-	-	155
Bldg A - B1_Office 30		100	-	-	171
Bldg A - B1_Office 31		100	-	-	197
Bldg A - B1_Office 32		100	-	-	725
Bldg A - B1_Office 33		100	-	-	616
Bldg A - B1_Office 34		100	-	-	191
Bldg A - B1_Office 35		100	-	-	4709
Bldg A - B1_Office 36		100	-	-	159
Bldg A - B1_Office 37		100	-	-	198
Bldg A - B1_Office 38		100	-	-	445
Bldg A - B1_Office 39		100	-	-	1072
Bldg A - B1_Office 40		100	-	-	507
Bldg A - B1_Office 41		100	-	-	460
Bldg A - B1_Office 42		100	-	-	205
Bldg A - B1_Office 43		100	-	-	155
Bldg A - B1_Office 44		100	-	-	171
Bldg A - B1_Office 45		100	-	-	197
Bldg A - B1_Office 46		100	-	-	442
Bldg A - B1_Office 47		100	-	-	284
Bldg A - B1_Office 48		100	-	-	616
Bldg A - B1_Office 49		100	-	-	191
Bldg A - B1_Office 50		100	-	-	4709
Bldg A - B1_Office 51		100	-	-	159
Bldg A - B1_Office 52		100	-	-	198
Bldg A - B1_Office 53		100	-	-	268
Bldg A - B1_Office 54		100	-	-	199
Bldg A - B1_Office 55		100	-	-	588
Bldg A - B1_Office 56		100	-	-	197
Bldg A - B1_Office 57		100	-	-	265
Bldg A - B1_Office 58		100	-	-	197
Bldg A - B1_Office 59		100	-	-	191
Bldg A - B1_Office 60		100	-	-	257
Bldg A - B1_Office 61		100	-	-	214
Bldg A - B1_Office 62		100	-	-	171

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg A - B1_Office 63		100	-	-	197
Bldg A - B1_Office 64		100	-	-	253
Bldg A - B1_Office 65		100	-	-	188
Bldg A - B1_Office 66		100	-	-	540
Bldg A - B1_Office 67		100	-	-	196
Bldg A - B1_Office 68		100	-	-	264
Bldg A - B1_Office 69		100	-	-	205
Bldg A - B1_Office 70		100	-	-	155
Bldg A - B1_Office 71		100	-	-	220
Bldg A - B1_Office 72		100	-	-	199
Bldg A - B1_Office 73		100	-	-	159
Bldg A - B1_Office 74		100	-	-	198
Bldg A - B1_Office 75		100	-	-	268
Bldg A - B1_Office 76		100	-	-	199
Bldg A - B1_Office 77		100	-	-	588
Bldg A - B1_Office 78		100	-	-	197
Bldg A - B1_Office 79		100	-	-	265
Bldg A - B1_Office 80		100	-	-	197
Bldg A - B1_Office 81		100	-	-	191
Bldg A - B1_Office 82		100	-	-	214
Bldg A - B1_Office 83		100	-	-	257
Bldg A - B1_Office 84		100	-	-	171
Bldg A - B1_Office 85		100	-	-	197
Bldg A - B1_Office 86		100	-	-	253
Bldg A - B1_Office 87		100	-	-	188
Bldg A - B1_Office 88		100	-	-	540
Bldg A - B1_Office 89		100	-	-	196
Bldg A - B1_Office 90		100	-	-	264
Bldg A - B1_Office 91		100	-	-	205
Bldg A - B1_Office 92		100	-	-	155
Bldg A - B1_Office 93		100	-	-	220
Bldg A - B1_Office 94		100	-	-	199
Bldg A - B1_Office 95		100	-	-	159
Bldg A - B1_Office 96		100	-	-	198
Bldg A - B1_Office 97		100	-	-	268
Bldg A - B1_Office 98		100	-	-	199
Bldg A - B1_Office 99		100	-	-	588
Bldg A - B1_Office 100		100	-	-	197
Bldg B - B1_Office 1		100	-	-	368
Bldg B - B1_Office 2		100	-	-	632
Bldg B - B1_Office 3		100	-	-	786
Bldg B - B1_Office 4		100	-	-	627
Bldg B - B1_Office 5		100	-	-	599

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg B - B1_Office 6		100	-	-	1728
Bldg B - B1_Office 7		100	-	-	244
Bldg B - B1_Office 8		100	-	-	391
Bldg B - B1_Office 9		100	-	-	550
Bldg B - B1_Office 10		100	-	-	526
Bldg B - B1_Office 11		100	-	-	547
Bldg B - B1_Office 12		100	-	-	393
Bldg B - B1_Office 13		100	-	-	1657
Bldg B - B1_Office 14		100	-	-	187
Bldg B - B1_Office 15		100	-	-	632
Bldg B - B1_Office 16		100	-	-	244
Bldg B - B1_Office 17		100	-	-	786
Bldg B - B1_Office 18		100	-	-	627
Bldg B - B1_Office 19		100	-	-	1277
Bldg B - B1_Office 20		100	-	-	290
Bldg B - B1_Office 21		100	-	-	547
Bldg B - B1_Office 22		100	-	-	526
Bldg B - B1_Office 23		100	-	-	550
Bldg B - B1_Office 24		100	-	-	1155
Bldg B - B1_Office 25		100	-	-	2159
Bldg B - B1_Office 26		100	-	-	781
Bldg B - B1_Office 27		100	-	-	483
Bldg B - B1_Office 28		100	-	-	547
Bldg B - B1_Office 29		100	-	-	540
Bldg B - B1_Office 30		100	-	-	2215
Bldg B - B1_Office 31		100	-	-	187
Bldg B - B1_Office 32		100	-	-	632
Bldg B - B1_Office 33		100	-	-	244
Bldg B - B1_Office 34		100	-	-	786
Bldg B - B1_Office 35		100	-	-	627
Bldg B - B1_Office 36		100	-	-	1277
Bldg B - B1_Office 37		100	-	-	290
Bldg B - B1_Office 38		100	-	-	547
Bldg B - B1_Office 39		100	-	-	526
Bldg B - B1_Office 40		100	-	-	550
Bldg B - B1_Office 41		100	-	-	1155
Bldg B - B1_Office 42		100	-	-	2159
Bldg B - B1_Office 43		100	-	-	781
Bldg B - B1_Office 44		100	-	-	540
Bldg B - B1_Office 45		100	-	-	547
Bldg B - B1_Office 46		100	-	-	483
Bldg B - B1_Office 47		100	-	-	2215
Bldg B - B1_Office 48		100	-	-	187

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg B - B1_Office 49		100	-	-	632
Bldg B - B1_Office 50		100	-	-	244
Bldg B - B1_Office 51		100	-	-	786
Bldg B - B1_Office 52		100	-	-	627
Bldg B - B1_Office 53		100	-	-	1277
Bldg B - B1_Office 54		100	-	-	290
Bldg B - B1_Office 55		100	-	-	547
Bldg B - B1_Office 56		100	-	-	526
Bldg B - B1_Office 57		100	-	-	550
Bldg B - B1_Office 58		100	-	-	1155
Bldg B - B1_Office 59		100	-	-	1289
Bldg B - B1_Office 60		100	-	-	781
Bldg B - B1_Office 61		100	-	-	327
Bldg B - B1_Office 62		100	-	-	483
Bldg B - B1_Office 63		100	-	-	542
Bldg B - B1_Office 64		100	-	-	547
Bldg B - B1_Office 65		100	-	-	540
Bldg B - B1_Office 66		100	-	-	2215
Bldg B - B1_Office 67		100	-	-	289
Bldg B - B1_Office 68		100	-	-	550
Bldg B - B1_Office 69		100	-	-	1155
Bldg B - B1_Office 70		100	-	-	998
Bldg B - B1_Office 71		100	-	-	777
Bldg B - B1_Office 72		100	-	-	187
Bldg B - B1_Office 73		100	-	-	632
Bldg B - B1_Office 74		100	-	-	244
Bldg B - B1_Office 75		100	-	-	786
Bldg B - B1_Office 76		100	-	-	627
Bldg B - B1_Office 77		100	-	-	1277
Bldg B - B1_Office 78		100	-	-	2140
Bldg B - B1_Office 79		100	-	-	540
Bldg B - B1_Office 80		100	-	-	621
Bldg B - B1_Office 81		100	-	-	290
Bldg B - B1_Office 82		100	-	-	547
Bldg B - B1_Office 83		100	-	-	289
Bldg B - B1_Office 84		100	-	-	254
Bldg B - B1_Office 85		100	-	-	289
Bldg B - B1_Office 86		100	-	-	550
Bldg B - B1_Office 87		100	-	-	1155
Bldg B - B1_Office 88		100	-	-	998
Bldg B - B1_Office 89		100	-	-	777
Bldg B - B1_Office 90		100	-	-	187
Bldg B - B1_Office 91		100	-	-	632

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg B - B1_Office 92		100	-	-	244
Bldg B - B1_Office 93		100	-	-	786
Bldg B - B1_Office 94		100	-	-	627
Bldg B - B1_Office 95		100	-	-	1277
Bldg B - B1_Office 96		100	-	-	2140
Bldg B - B1_Office 97		100	-	-	540
Bldg B - B1_Office 98		100	-	-	621
Bldg B - B1_Office 99		100	-	-	290
Bldg B - B1_Office 100		100	-	-	547
Bldg C - B1_Office 1		100	-	-	192
Bldg C - B1_Office 2		100	-	-	603
Bldg C - B1_Office 3		100	-	-	206
Bldg C - B1_Office 4		100	-	-	837
Bldg C - B1_Office 5		100	-	-	603
Bldg C - B1_Office 6		100	-	-	158
Bldg C - B1_Office 7		100	-	-	2315
Bldg C - B1_Office 9		100	-	-	570
Bldg C - B1_Office 10		100	-	-	1488
Bldg C - B1_Office 11		100	-	-	542
Bldg C - B1_Office 12		100	-	-	569
Bldg C - B1_Office 13		100	-	-	379
Bldg C - B1_Office 14		100	-	-	192
Bldg C - B1_Office 15		100	-	-	603
Bldg C - B1_Office 16		100	-	-	206
Bldg C - B1_Office 17		100	-	-	837
Bldg C - B1_Office 18		100	-	-	603
Bldg C - B1_Office 19		100	-	-	158
Bldg C - B1_Office 20		100	-	-	1678
Bldg C - B1_Office 21		100	-	-	1517
Bldg C - B1_Office 22		100	-	-	651
Bldg C - B1_Office 23		100	-	-	549
Bldg C - B1_Office 24		100	-	-	770
Bldg C - B1_Office 25		100	-	-	2070
Bldg C - B1_Office 26		100	-	-	1113
Bldg C - B1_Office 27		100	-	-	569
Bldg C - B1_Office 28		100	-	-	542
Bldg C - B1_Office 29		100	-	-	462
Bldg C - B1_Office 30		100	-	-	570
Bldg C - B1_Office 31		100	-	-	372
Bldg C - B1_Office 32		100	-	-	192
Bldg C - B1_Office 33		100	-	-	603
Bldg C - B1_Office 34		100	-	-	206
Bldg C - B1_Office 35		100	-	-	837

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Office 36		100	-	-	603
Bldg C - B1_Office 37		100	-	-	158
Bldg C - B1_Office 38		100	-	-	1678
Bldg C - B1_Office 39		100	-	-	1517
Bldg C - B1_Office 40		100	-	-	549
Bldg C - B1_Office 41		100	-	-	652
Bldg C - B1_Office 42		100	-	-	770
Bldg C - B1_Office 43		100	-	-	2070
Bldg C - B1_Office 44		100	-	-	1113
Bldg C - B1_Office 45		100	-	-	569
Bldg C - B1_Office 46		100	-	-	542
Bldg C - B1_Office 47		100	-	-	461
Bldg C - B1_Office 48		100	-	-	570
Bldg C - B1_Office 49		100	-	-	372
Bldg C - B1_Office 50		100	-	-	192
Bldg C - B1_Office 51		100	-	-	603
Bldg C - B1_Office 52		100	-	-	206
Bldg C - B1_Office 53		100	-	-	837
Bldg C - B1_Office 54		100	-	-	603
Bldg C - B1_Office 55		100	-	-	158
Bldg C - B1_Office 56		100	-	-	1678
Bldg C - B1_Office 57		100	-	-	1517
Bldg C - B1_Office 58		100	-	-	549
Bldg C - B1_Office 59		100	-	-	653
Bldg C - B1_Office 60		100	-	-	770
Bldg C - B1_Office 61		100	-	-	1312
Bldg C - B1_Office 62		100	-	-	1113
Bldg C - B1_Office 63		100	-	-	569
Bldg C - B1_Office 64		100	-	-	542
Bldg C - B1_Office 65		100	-	-	312
Bldg C - B1_Office 66		100	-	-	462
Bldg C - B1_Office 67		100	-	-	570
Bldg C - B1_Office 68		100	-	-	446
Bldg C - B1_Office 69		100	-	-	372
Bldg C - B1_Office 70		100	-	-	192
Bldg C - B1_Office 71		100	-	-	603
Bldg C - B1_Office 72		100	-	-	206
Bldg C - B1_Office 73		100	-	-	837
Bldg C - B1_Office 74		100	-	-	603
Bldg C - B1_Office 75		100	-	-	158
Bldg C - B1_Office 76		100	-	-	1678
Bldg C - B1_Office 77		100	-	-	1526
Bldg C - B1_Office 78		100	-	-	540

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Office 79		100	-	-	666
Bldg C - B1_Office 80		100	-	-	766
Bldg C - B1_Office 81		100	-	-	1031
Bldg C - B1_Office 82		100	-	-	1113
Bldg C - B1_Office 83		100	-	-	569
Bldg C - B1_Office 84		100	-	-	280
Bldg C - B1_Office 85		100	-	-	570
Bldg C - B1_Office 86		100	-	-	289
Bldg C - B1_Office 87		100	-	-	157
Bldg C - B1_Office 88		100	-	-	372
Bldg C - B1_Office 89		100	-	-	192
Bldg C - B1_Office 90		100	-	-	603
Bldg C - B1_Office 91		100	-	-	206
Bldg C - B1_Office 92		100	-	-	837
Bldg C - B1_Office 93		100	-	-	603
Bldg C - B1_Office 94		100	-	-	158
Bldg C - B1_Office 95		100	-	-	1678
Bldg C - B1_Office 96		100	-	-	1526
Bldg C - B1_Office 97		100	-	-	666
Bldg C - B1_Office 98		100	-	-	540
Bldg C - B1_Office 99		100	-	-	766
Bldg C - B1_Office 100		100	-	-	1031
Bldg D - B1_Office 1		100	-	-	321
Bldg D - B1_Office 2		100	-	-	345
Bldg D - B1_Office 3		100	-	-	989
Bldg D - B1_Office 4		100	-	-	267
Bldg D - B1_Office 5		100	-	-	997
Bldg D - B1_Office 6		100	-	-	375
Bldg D - B1_Office 7		100	-	-	302
Bldg D - B1_Office 8		100	-	-	2070
Bldg D - B1_Office 9		100	-	-	321
Bldg D - B1_Office 10		100	-	-	345
Bldg D - B1_Office 11		100	-	-	1063
Bldg D - B1_Office 12		100	-	-	1070
Bldg D - B1_Office 13		100	-	-	375
Bldg D - B1_Office 14		100	-	-	302
Bldg D - B1_Office 15		100	-	-	2638
Bldg D - B1_Office 16		100	-	-	942
Bldg D - B1_Office 17		100	-	-	321
Bldg D - B1_Office 18		100	-	-	345
Bldg D - B1_Office 19		100	-	-	1063
Bldg D - B1_Office 20		100	-	-	1070
Bldg D - B1_Office 21		100	-	-	375

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Office 22		100	-	-	302
Bldg D - B1_Office 23		100	-	-	2638
Bldg D - B1_Office 24		100	-	-	942
Bldg D - B1_Office 25		100	-	-	321
Bldg D - B1_Office 26		100	-	-	345
Bldg D - B1_Office 27		100	-	-	1063
Bldg D - B1_Office 28		100	-	-	1070
Bldg D - B1_Office 29		100	-	-	375
Bldg D - B1_Office 30		100	-	-	302
Bldg D - B1_Office 31		100	-	-	2638
Bldg D - B1_Office 32		100	-	-	942
Bldg D - B1_Office 33		100	-	-	321
Bldg D - B1_Office 34		100	-	-	345
Bldg D - B1_Office 35		100	-	-	1063
Bldg D - B1_Office 36		100	-	-	1070
Bldg D - B1_Office 37		100	-	-	375
Bldg D - B1_Office 38		100	-	-	302
Bldg D - B1_Office 39		100	-	-	2638
Bldg D - B1_Office 40		100	-	-	942
Bldg D - B1_Office 41		100	-	-	321
Bldg D - B1_Office 42		100	-	-	345
Bldg D - B1_Office 43		100	-	-	1063
Bldg D - B1_Office 44		100	-	-	1070
Bldg D - B1_Office 45		100	-	-	375
Bldg D - B1_Office 46		100	-	-	302
Bldg D - B1_Office 47		100	-	-	2638
Bldg D - B1_Office 48		100	-	-	942
Bldg D - B1_Office 49		100	-	-	321
Bldg D - B1_Office 50		100	-	-	345
Bldg D - B1_Office 51		100	-	-	1063
Bldg D - B1_Office 52		100	-	-	1070
Bldg D - B1_Office 53		100	-	-	375
Bldg D - B1_Office 54		100	-	-	302
Bldg D - B1_Office 55		100	-	-	2638
Bldg D - B1_Office 56		100	-	-	942
Bldg D - B1_Office 57		100	-	-	302
Bldg D - B1_Office 58		100	-	-	375
Bldg D - B1_Office 59		100	-	-	1070
Bldg D - B1_Office 60		100	-	-	1063
Bldg D - B1_Office 61		100	-	-	345
Bldg D - B1_Office 62		100	-	-	321
Bldg D - B1_Office 63		100	-	-	2638
Bldg D - B1_Office 64		100	-	-	942

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Office 65		100	-	-	321
Bldg D - B1_Office 66		100	-	-	345
Bldg D - B1_Office 67		100	-	-	1063
Bldg D - B1_Office 68		100	-	-	1070
Bldg D - B1_Office 69		100	-	-	375
Bldg D - B1_Office 70		100	-	-	302
Bldg D - B1_Office 71		100	-	-	2638
Bldg D - B1_Office 72		100	-	-	942
Bldg D - B1_Office 73		100	-	-	321
Bldg D - B1_Office 74		100	-	-	345
Bldg D - B1_Office 75		100	-	-	1063
Bldg D - B1_Office 76		100	-	-	1070
Bldg D - B1_Office 77		100	-	-	375
Bldg D - B1_Office 78		100	-	-	302
Bldg D - B1_Office 79		100	-	-	2638
Bldg D - B1_Office 80		100	-	-	942
Bldg D - B1_Office 81		100	-	-	321
Bldg D - B1_Office 82		100	-	-	345
Bldg D - B1_Office 83		100	-	-	1063
Bldg D - B1_Office 84		100	-	-	1070
Bldg D - B1_Office 85		100	-	-	375
Bldg D - B1_Office 86		100	-	-	302
Bldg D - B1_Office 87		100	-	-	2638
Bldg D - B1_Office 88		100	-	-	942
Bldg D - B1_Office 89		100	-	-	321
Bldg D - B1_Office 90		100	-	-	345
Bldg D - B1_Office 91		100	-	-	1063
Bldg D - B1_Office 92		100	-	-	1070
Bldg D - B1_Office 93		100	-	-	375
Bldg D - B1_Office 94		100	-	-	302
Bldg D - B1_Office 95		100	-	-	2638
Bldg D - B1_Office 96		100	-	-	940
Bldg D - B1_Office 97		100	-	-	321
Bldg D - B1_Office 98		100	-	-	345
Bldg D - B1_Office 99		100	-	-	886
Bldg D - B1_Office 100		100	-	-	656
Bldg A - B1_Office 101		100	-	-	265
Bldg A - B1_Office 102		100	-	-	197
Bldg A - B1_Office 103		100	-	-	191
Bldg A - B1_Office 104		100	-	-	214
Bldg A - B1_Office 105		100	-	-	257
Bldg A - B1_Office 106		100	-	-	171
Bldg A - B1_Office 107		100	-	-	197

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg A - B1_Office 108		100	-	-	253
Bldg A - B1_Office 109		100	-	-	188
Bldg A - B1_Office 110		100	-	-	540
Bldg A - B1_Office 111		100	-	-	196
Bldg A - B1_Office 112		100	-	-	264
Bldg A - B1_Office 113		100	-	-	205
Bldg A - B1_Office 114		100	-	-	155
Bldg A - B1_Office 115		100	-	-	220
Bldg A - B1_Office 116		100	-	-	199
Bldg A - B1_Office 117		100	-	-	159
Bldg A - B1_Office 118		100	-	-	198
Bldg A - B1_Office 119		100	-	-	268
Bldg A - B1_Office 120		100	-	-	199
Bldg A - B1_Office 121		100	-	-	588
Bldg A - B1_Office 122		100	-	-	197
Bldg A - B1_Office 123		100	-	-	265
Bldg A - B1_Office 124		100	-	-	197
Bldg A - B1_Office 125		100	-	-	191
Bldg A - B1_Office 126		100	-	-	214
Bldg A - B1_Office 127		100	-	-	257
Bldg A - B1_Office 128		100	-	-	171
Bldg A - B1_Office 129		100	-	-	197
Bldg A - B1_Office 130		100	-	-	253
Bldg A - B1_Office 131		100	-	-	188
Bldg A - B1_Office 132		100	-	-	540
Bldg A - B1_Office 133		100	-	-	196
Bldg A - B1_Office 134		100	-	-	264
Bldg A - B1_Office 135		100	-	-	205
Bldg A - B1_Office 136		100	-	-	155
Bldg A - B1_Office 137		100	-	-	220
Bldg A - B1_Office 138		100	-	-	199
Bldg A - B1_Office 139		100	-	-	171
Bldg A - B1_Office 140		100	-	-	197
Bldg A - B1_Office 141		100	-	-	253
Bldg A - B1_Office 142		100	-	-	188
Bldg A - B1_Office 143		100	-	-	540
Bldg A - B1_Office 144		100	-	-	196
Bldg A - B1_Office 145		100	-	-	264
Bldg A - B1_Office 146		100	-	-	205
Bldg A - B1_Office 147		100	-	-	155
Bldg A - B1_Office 148		100	-	-	220
Bldg A - B1_Office 149		100	-	-	199
Bldg A - B1_Office 150		100	-	-	171

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg A - B1_Office 151		100	-	-	197
Bldg A - B1_Office 152		100	-	-	253
Bldg A - B1_Office 153		100	-	-	188
Bldg A - B1_Office 154		100	-	-	540
Bldg A - B1_Office 155		100	-	-	196
Bldg A - B1_Office 156		100	-	-	264
Bldg A - B1_Office 157		100	-	-	205
Bldg A - B1_Office 158		100	-	-	155
Bldg A - B1_Office 159		100	-	-	220
Bldg A - B1_Office 160		100	-	-	199
Bldg B - B1_Office 101		100	-	-	289
Bldg B - B1_Office 102		100	-	-	254
Bldg B - B1_Office 103		100	-	-	289
Bldg B - B1_Office 104		100	-	-	550
Bldg B - B1_Office 105		100	-	-	1155
Bldg B - B1_Office 106		100	-	-	998
Bldg B - B1_Office 107		100	-	-	777
Bldg B - B1_Office 108		100	-	-	187
Bldg B - B1_Office 109		100	-	-	632
Bldg B - B1_Office 110		100	-	-	244
Bldg B - B1_Office 111		100	-	-	786
Bldg B - B1_Office 112		100	-	-	627
Bldg B - B1_Office 113		100	-	-	1277
Bldg B - B1_Office 114		100	-	-	2140
Bldg B - B1_Office 115		100	-	-	540
Bldg B - B1_Office 116		100	-	-	621
Bldg B - B1_Office 117		100	-	-	290
Bldg B - B1_Office 118		100	-	-	547
Bldg B - B1_Office 119		100	-	-	289
Bldg B - B1_Office 120		100	-	-	507
Bldg B - B1_Office 121		100	-	-	674
Bldg B - B1_Office 122		100	-	-	678
Bldg B - B1_Office 123		100	-	-	777
Bldg B - B1_Office 124		100	-	-	187
Bldg B - B1_Office 125		100	-	-	632
Bldg B - B1_Office 126		100	-	-	244
Bldg B - B1_Office 127		100	-	-	786
Bldg B - B1_Office 128		100	-	-	627
Bldg B - B1_Office 129		100	-	-	1277
Bldg B - B1_Office 130		100	-	-	2140
Bldg B - B1_Office 131		100	-	-	540
Bldg B - B1_Office 132		100	-	-	621
Bldg B - B1_Office 133		100	-	-	255

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg B - B1_Office 134		100	-	-	674
Bldg B - B1_Office 135		100	-	-	678
Bldg B - B1_Office 136		100	-	-	777
Bldg B - B1_Office 137		100	-	-	187
Bldg B - B1_Office 138		100	-	-	632
Bldg B - B1_Office 139		100	-	-	244
Bldg B - B1_Office 140		100	-	-	144
Bldg B - B1_Office 141		100	-	-	642
Bldg B - B1_Office 142		100	-	-	627
Bldg B - B1_Office 143		100	-	-	1277
Bldg B - B1_Office 144		100	-	-	2140
Bldg B - B1_Office 145		100	-	-	540
Bldg B - B1_Office 146		100	-	-	621
Bldg B - B1_Office 147		100	-	-	255
Bldg B - B1_Office 148		100	-	-	674
Bldg B - B1_Office 149		100	-	-	678
Bldg B - B1_Office 150		100	-	-	778
Bldg B - B1_Office 151		100	-	-	187
Bldg B - B1_Office 152		100	-	-	632
Bldg B - B1_Office 153		100	-	-	150
Bldg B - B1_Office 154		100	-	-	244
Bldg B - B1_Office 155		100	-	-	255
Bldg B - B1_Office 156		100	-	-	674
Bldg B - B1_Office 157		100	-	-	678
Bldg B - B1_Office 158		100	-	-	778
Bldg B - B1_Office 159		100	-	-	187
Bldg B - B1_Office 160		100	-	-	632
Bldg B - B1_Office 161		100	-	-	150
Bldg B - B1_Office 162		100	-	-	244
Bldg B - B1_Office 163		100	-	-	255
Bldg B - B1_Office 164		100	-	-	674
Bldg B - B1_Office 165		100	-	-	678
Bldg B - B1_Office 166		100	-	-	778
Bldg B - B1_Office 167		100	-	-	187
Bldg B - B1_Office 168		100	-	-	632
Bldg B - B1_Office 169		100	-	-	150
Bldg B - B1_Office 170		100	-	-	244
Bldg B - B1_Office 171		100	-	-	255
Bldg B - B1_Office 172		100	-	-	674
Bldg B - B1_Office 173		100	-	-	678
Bldg B - B1_Office 174		100	-	-	778
Bldg B - B1_Office 175		100	-	-	187
Bldg B - B1_Office 176		100	-	-	632

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg B - B1_Office 177		100	-	-	150
Bldg B - B1_Office 178		100	-	-	244
Bldg C - B1_Office 101		100	-	-	1113
Bldg C - B1_Office 102		100	-	-	569
Bldg C - B1_Office 103		100	-	-	280
Bldg C - B1_Office 104		100	-	-	289
Bldg C - B1_Office 105		100	-	-	570
Bldg C - B1_Office 106		100	-	-	372
Bldg C - B1_Office 107		100	-	-	157
Bldg C - B1_Office 108		100	-	-	603
Bldg C - B1_Office 109		100	-	-	192
Bldg C - B1_Office 110		100	-	-	206
Bldg C - B1_Office 111		100	-	-	837
Bldg C - B1_Office 112		100	-	-	603
Bldg C - B1_Office 113		100	-	-	158
Bldg C - B1_Office 114		100	-	-	1678
Bldg C - B1_Office 115		100	-	-	1526
Bldg C - B1_Office 116		100	-	-	540
Bldg C - B1_Office 117		100	-	-	666
Bldg C - B1_Office 118		100	-	-	766
Bldg C - B1_Office 119		100	-	-	1031
Bldg C - B1_Office 120		100	-	-	1113
Bldg C - B1_Office 121		100	-	-	569
Bldg C - B1_Office 122		100	-	-	280
Bldg C - B1_Office 123		100	-	-	289
Bldg C - B1_Office 124		100	-	-	570
Bldg C - B1_Office 125		100	-	-	372
Bldg C - B1_Office 126		100	-	-	157
Bldg C - B1_Office 127		100	-	-	192
Bldg C - B1_Office 128		100	-	-	603
Bldg C - B1_Office 129		100	-	-	206
Bldg C - B1_Office 130		100	-	-	837
Bldg C - B1_Office 131		100	-	-	603
Bldg C - B1_Office 132		100	-	-	158
Bldg C - B1_Office 133		100	-	-	1678
Bldg C - B1_Office 134		100	-	-	1526
Bldg C - B1_Office 135		100	-	-	666
Bldg C - B1_Office 136		100	-	-	540
Bldg C - B1_Office 137		100	-	-	766
Bldg C - B1_Office 138		100	-	-	682
Bldg C - B1_Office 139		100	-	-	609
Bldg C - B1_Office 140		100	-	-	317
Bldg C - B1_Office 141		100	-	-	192

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Office 142		100	-	-	603
Bldg C - B1_Office 143		100	-	-	206
Bldg C - B1_Office 144		100	-	-	837
Bldg C - B1_Office 145		100	-	-	603
Bldg C - B1_Office 146		100	-	-	158
Bldg C - B1_Office 147		100	-	-	1678
Bldg C - B1_Office 148		100	-	-	1526
Bldg C - B1_Office 149		100	-	-	666
Bldg C - B1_Office 150		100	-	-	540
Bldg C - B1_Office 151		100	-	-	766
Bldg C - B1_Office 152		100	-	-	682
Bldg C - B1_Office 153		100	-	-	609
Bldg C - B1_Office 154		100	-	-	317
Bldg C - B1_Office 155		100	-	-	192
Bldg C - B1_Office 156		100	-	-	603
Bldg C - B1_Office 157		100	-	-	206
Bldg C - B1_Office 158		100	-	-	178
Bldg C - B1_Office 159		100	-	-	659
Bldg C - B1_Office 160		100	-	-	603
Bldg C - B1_Office 161		100	-	-	158
Bldg C - B1_Office 162		100	-	-	1678
Bldg C - B1_Office 163		100	-	-	1526
Bldg C - B1_Office 164		100	-	-	666
Bldg C - B1_Office 165		100	-	-	540
Bldg C - B1_Office 166		100	-	-	766
Bldg C - B1_Office 167		100	-	-	682
Bldg C - B1_Office 168		100	-	-	609
Bldg C - B1_Office 169		100	-	-	317
Bldg C - B1_Office 170		100	-	-	192
Bldg C - B1_Office 171		100	-	-	603
Bldg C - B1_Office 172		100	-	-	206
Bldg C - B1_Office 173		100	-	-	178
Bldg C - B1_Office 174		100	-	-	767
Bldg C - B1_Office 175		100	-	-	682
Bldg C - B1_Office 176		100	-	-	609
Bldg C - B1_Office 177		100	-	-	317
Bldg C - B1_Office 178		100	-	-	192
Bldg C - B1_Office 179		100	-	-	603
Bldg C - B1_Office 180		100	-	-	178
Bldg C - B1_Office 181		100	-	-	206
Bldg C - B1_Office 182		100	-	-	767
Bldg C - B1_Office 183		100	-	-	682
Bldg C - B1_Office 184		100	-	-	609

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Office 185		100	-	-	317
Bldg C - B1_Office 186		100	-	-	192
Bldg C - B1_Office 187		100	-	-	603
Bldg C - B1_Office 188		100	-	-	178
Bldg C - B1_Office 189		100	-	-	206
Bldg C - B1_Office 190		100	-	-	609
Bldg C - B1_Office 191		100	-	-	682
Bldg C - B1_Office 192		100	-	-	767
Bldg C - B1_Office 193		100	-	-	317
Bldg C - B1_Office 194		100	-	-	192
Bldg C - B1_Office 195		100	-	-	603
Bldg C - B1_Office 196		100	-	-	178
Bldg C - B1_Office 197		100	-	-	206
Bldg C - B1_Office 198		100	-	-	767
Bldg C - B1_Office 199		100	-	-	682
Bldg C - B1_Office 200		100	-	-	609
Bldg C - B1_Office 201		100	-	-	317
Bldg D - B1_Office 101		100	-	-	545
Bldg D - B1_Office 102		100	-	-	1051
Bldg D - B1_Office 103		100	-	-	321
Bldg D - B1_Office 104		100	-	-	345
Bldg D - B1_Office 105		100	-	-	886
Bldg D - B1_Office 106		100	-	-	656
Bldg D - B1_Office 107		100	-	-	545
Bldg D - B1_Office 108		100	-	-	1051
Bldg D - B1_Office 109		100	-	-	321
Bldg D - B1_Office 110		100	-	-	345
Bldg D - B1_Office 111		100	-	-	886
Bldg D - B1_Office 112		100	-	-	656
Bldg D - B1_Office 113		100	-	-	545
Bldg D - B1_Office 114		100	-	-	1051
Bldg D - B1_Office 115		100	-	-	321
Bldg D - B1_Office 116		100	-	-	345
Bldg D - B1_Office 117		100	-	-	886
Bldg D - B1_Office 118		100	-	-	656
Bldg D - B1_Office 119		100	-	-	545
Bldg D - B1_Office 120		100	-	-	1051
Bldg D - B1_Office 121		100	-	-	321
Bldg D - B1_Office 122		100	-	-	345
Bldg D - B1_Office 123		100	-	-	886
Bldg D - B1_Office 124		100	-	-	656
Bldg D - B1_Office 125		100	-	-	545
Bldg D - B1_Office 126		100	-	-	1051

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Office 127		100	-	-	321
Bldg D - B1_Office 128		100	-	-	345
Bldg D - B1_Office 129		100	-	-	886
Bldg D - B1_Office 130		100	-	-	656
Bldg D - B1_Office 131		100	-	-	545
Bldg D - B1_Office 132		100	-	-	1051
Bldg D - B1_Office 133		100	-	-	321
Bldg D - B1_Office 134		100	-	-	345
Bldg D - B1_Office 135		100	-	-	886
Bldg D - B1_Office 136		100	-	-	656
Bldg D - B1_Office 137		100	-	-	545
Bldg D - B1_Office 138		100	-	-	1051
Bldg D - B1_Office 139		100	-	-	321
Bldg D - B1_Office 140		100	-	-	345
Bldg D - B1_Office 141		100	-	-	886
Bldg D - B1_Office 142		100	-	-	656
Bldg D - B1_Office 143		100	-	-	545
Bldg D - B1_Office 144		100	-	-	1051
Bldg D - B1_Office 145		100	-	-	321
Bldg D - B1_Office 146		100	-	-	345
Bldg D - B1_Office 147		100	-	-	886
Bldg D - B1_Office 148		100	-	-	656
Bldg D - B1_Office 149		100	-	-	545
Bldg D - B1_Office 150		100	-	-	1051
Bldg D - B1_Office 151		100	-	-	321
Bldg D - B1_Office 152		100	-	-	345
Bldg D - B1_Office 153		100	-	-	886
Bldg D - B1_Office 154		100	-	-	656
Bldg D - B1_Office 155		100	-	-	545
Bldg D - B1_Office 156		100	-	-	1051
Bldg D - B1_Office 157		100	-	-	321
Bldg D - B1_Office 158		100	-	-	345
Bldg D - B1_Office 159		100	-	-	886
Bldg D - B1_Office 160		100	-	-	656
Bldg D - B1_Office 161		100	-	-	545
Bldg D - B1_Office 162		100	-	-	1051
Bldg A - B1_Circulation 1 (Stairs)		-	100	-	336
Bldg A - B1_Circulation 2 (Stairs)		-	100	-	266
Bldg A - B1_Circulation 3		-	100	-	35
Bldg A - B1_Circulation 4		-	100	-	36
Bldg A - B1_Circulation 5		-	100	-	46
Bldg A - B1_Circulation 6		-	100	-	35
Bldg A - B1_Circulation 7		-	100	-	36

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg A - B1_Circulation 8		-	100	-	44
Bldg A - B1_Circulation 9		-	100	-	46
Bldg A - B1_Circulation 10		-	100	-	35
Bldg A - B1_Circulation 11		-	100	-	36
Bldg A - B1_Circulation 12		-	100	-	44
Bldg A - B1_Circulation 13		-	100	-	46
Bldg A - B1_Circulation 14		-	100	-	35
Bldg A - B1_Circulation 15		-	100	-	36
Bldg A - B1_Circulation 16		-	100	-	44
Bldg A - B1_Circulation 17		-	100	-	46
Bldg A - B1_Circulation 18		-	100	-	35
Bldg A - B1_Circulation 19		-	100	-	36
Bldg A - B1_Circulation 20		-	100	-	44
Bldg A - B1_Circulation 21		-	100	-	46
Bldg A - B1_Circulation 22		-	100	-	35
Bldg A - B1_Circulation 23		-	100	-	36
Bldg A - B1_Circulation 24		-	100	-	90
Bldg A - B1_Circulation 25		-	100	-	35
Bldg A - B1_Circulation 26		-	100	-	36
Bldg A - B1_Circulation 27		-	100	-	44
Bldg A - B1_Circulation 28		-	100	-	46
Bldg A - B1_Circulation 29		-	100	-	35
Bldg A - B1_Circulation 30		-	100	-	36
Bldg A - B1_Circulation 31		-	100	-	44
Bldg A - B1_Circulation 32		-	100	-	46
Bldg A - B1_Circulation 33		-	100	-	35
Bldg A - B1_Circulation 34		-	100	-	46
Bldg A - B1_Circulation 35		-	100	-	35
Bldg B - B1_Circulation 1 (Stairs)		-	100	-	467
Bldg B - B1_Circulation 2 (Stairs)		-	100	-	491
Bldg B - B1_Circulation 3 (Stairs)		-	100	-	356
Bldg B - B1_Circulation 4 (Stairs)		-	100	-	343
Bldg B - B1_Circulation 5		-	100	-	87
Bldg B - B1_Circulation 6		-	100	-	13
Bldg B - B1_Circulation 7		-	100	-	15
Bldg B - B1_Circulation 8		-	100	-	15
Bldg B - B1_Circulation 9		-	100	-	15
Bldg B - B1_Circulation 10		-	100	-	15
Bldg B - B1_Circulation 11		-	100	-	87
Bldg B - B1_Circulation 12		-	100	-	13
Bldg B - B1_Circulation 13		-	100	-	15
Bldg B - B1_Circulation 14		-	100	-	15
Bldg B - B1_Circulation 15		-	100	-	47

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg B - B1_Circulation 16		-	100	-	15
Bldg B - B1_Circulation 17		-	100	-	87
Bldg B - B1_Circulation 18		-	100	-	15
Bldg B - B1_Circulation 19		-	100	-	13
Bldg B - B1_Circulation 20		-	100	-	15
Bldg B - B1_Circulation 21		-	100	-	47
Bldg B - B1_Circulation 22		-	100	-	15
Bldg B - B1_Circulation 23		-	100	-	87
Bldg B - B1_Circulation 24		-	100	-	15
Bldg B - B1_Circulation 25		-	100	-	13
Bldg B - B1_Circulation 26		-	100	-	15
Bldg B - B1_Circulation 27		-	100	-	47
Bldg B - B1_Circulation 28		-	100	-	15
Bldg B - B1_Circulation 29		-	100	-	87
Bldg B - B1_Circulation 30		-	100	-	15
Bldg B - B1_Circulation 31		-	100	-	13
Bldg B - B1_Circulation 32		-	100	-	15
Bldg B - B1_Circulation 33		-	100	-	47
Bldg B - B1_Circulation 34		-	100	-	15
Bldg B - B1_Circulation 35		-	100	-	87
Bldg B - B1_Circulation 36		-	100	-	15
Bldg B - B1_Circulation 37		-	100	-	13
Bldg B - B1_Circulation 38		-	100	-	15
Bldg B - B1_Circulation 39		-	100	-	47
Bldg B - B1_Circulation 40		-	100	-	15
Bldg B - B1_Circulation 41		-	100	-	87
Bldg B - B1_Circulation 42		-	100	-	15
Bldg B - B1_Circulation 43		-	100	-	13
Bldg B - B1_Circulation 44		-	100	-	15
Bldg B - B1_Circulation 45		-	100	-	46
Bldg B - B1_Circulation 46		-	100	-	15
Bldg B - B1_Circulation 47		-	100	-	87
Bldg B - B1_Circulation 48		-	100	-	15
Bldg B - B1_Circulation 49		-	100	-	13
Bldg B - B1_Circulation 50		-	100	-	15
Bldg B - B1_Circulation 51		-	100	-	46
Bldg B - B1_Circulation 52		-	100	-	15
Bldg B - B1_Circulation 53		-	100	-	88
Bldg B - B1_Circulation 54		-	100	-	15
Bldg B - B1_Circulation 55		-	100	-	13
Bldg B - B1_Circulation 56		-	100	-	15
Bldg B - B1_Circulation 57		-	100	-	88
Bldg B - B1_Circulation 58		-	100	-	15

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg B - B1_Circulation 59		-	100	-	13
Bldg B - B1_Circulation 60		-	100	-	15
Bldg B - B1_Circulation 61		-	100	-	88
Bldg B - B1_Circulation 62		-	100	-	15
Bldg B - B1_Circulation 63		-	100	-	13
Bldg B - B1_Circulation 64		-	100	-	15
Bldg B - B1_Circulation 65		-	100	-	88
Bldg B - B1_Circulation 66		-	100	-	15
Bldg B - B1_Circulation 67		-	100	-	13
Bldg B - B1_Circulation 68		-	100	-	102
Bldg C - B1_Circulation 1 (Stairs)		-	100	-	522
Bldg C - B1_Circulation 2 (Stairs)		-	100	-	509
Bldg C - B1_Circulation 3 (Stairs)		-	100	-	392
Bldg C - B1_Circulation 4 (Stairs)		-	100	-	387
Bldg C - B1_Circulation 5		-	100	-	89
Bldg C - B1_Circulation 6		-	100	-	14
Bldg C - B1_Circulation 7		-	100	-	13
Bldg C - B1_Circulation 8		-	100	-	15
Bldg C - B1_Circulation 9		-	100	-	14
Bldg C - B1_Circulation 10		-	100	-	15
Bldg C - B1_Circulation 11		-	100	-	89
Bldg C - B1_Circulation 12		-	100	-	14
Bldg C - B1_Circulation 13		-	100	-	13
Bldg C - B1_Circulation 14		-	100	-	15
Bldg C - B1_Circulation 15		-	100	-	13
Bldg C - B1_Circulation 16		-	100	-	37
Bldg C - B1_Circulation 17		-	100	-	15
Bldg C - B1_Circulation 18		-	100	-	89
Bldg C - B1_Circulation 19		-	100	-	14
Bldg C - B1_Circulation 20		-	100	-	13
Bldg C - B1_Circulation 21		-	100	-	15
Bldg C - B1_Circulation 22		-	100	-	13
Bldg C - B1_Circulation 23		-	100	-	37
Bldg C - B1_Circulation 24		-	100	-	15
Bldg C - B1_Circulation 25		-	100	-	89
Bldg C - B1_Circulation 26		-	100	-	14
Bldg C - B1_Circulation 27		-	100	-	13
Bldg C - B1_Circulation 28		-	100	-	15
Bldg C - B1_Circulation 29		-	100	-	13
Bldg C - B1_Circulation 30		-	100	-	37
Bldg C - B1_Circulation 31		-	100	-	15
Bldg C - B1_Circulation 32		-	100	-	89
Bldg C - B1_Circulation 33		-	100	-	14

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Circulation 34		-	100	-	13
Bldg C - B1_Circulation 35		-	100	-	15
Bldg C - B1_Circulation 36		-	100	-	13
Bldg C - B1_Circulation 37		-	100	-	37
Bldg C - B1_Circulation 38		-	100	-	15
Bldg C - B1_Circulation 39		-	100	-	89
Bldg C - B1_Circulation 40		-	100	-	14
Bldg C - B1_Circulation 41		-	100	-	13
Bldg C - B1_Circulation 42		-	100	-	15
Bldg C - B1_Circulation 43		-	100	-	13
Bldg C - B1_Circulation 44		-	100	-	37
Bldg C - B1_Circulation 45		-	100	-	15
Bldg C - B1_Circulation 46		-	100	-	89
Bldg C - B1_Circulation 47		-	100	-	14
Bldg C - B1_Circulation 48		-	100	-	13
Bldg C - B1_Circulation 49		-	100	-	15
Bldg C - B1_Circulation 50		-	100	-	13
Bldg C - B1_Circulation 51		-	100	-	37
Bldg C - B1_Circulation 52		-	100	-	15
Bldg C - B1_Circulation 53		-	100	-	89
Bldg C - B1_Circulation 54		-	100	-	14
Bldg C - B1_Circulation 55		-	100	-	13
Bldg C - B1_Circulation 56		-	100	-	15
Bldg C - B1_Circulation 57		-	100	-	12
Bldg C - B1_Circulation 58		-	100	-	37
Bldg C - B1_Circulation 59		-	100	-	15
Bldg C - B1_Circulation 60		-	100	-	89
Bldg C - B1_Circulation 61		-	100	-	14
Bldg C - B1_Circulation 62		-	100	-	13
Bldg C - B1_Circulation 63		-	100	-	15
Bldg C - B1_Circulation 64		-	100	-	12
Bldg C - B1_Circulation 65		-	100	-	37
Bldg C - B1_Circulation 66		-	100	-	15
Bldg C - B1_Circulation 67		-	100	-	89
Bldg C - B1_Circulation 68		-	100	-	14
Bldg C - B1_Circulation 69		-	100	-	13
Bldg C - B1_Circulation 70		-	100	-	15
Bldg C - B1_Circulation 71		-	100	-	12
Bldg C - B1_Circulation 72		-	100	-	37
Bldg C - B1_Circulation 73		-	100	-	15
Bldg C - B1_Circulation 74		-	100	-	88
Bldg C - B1_Circulation 75		-	100	-	14
Bldg C - B1_Circulation 76		-	100	-	13

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Circulation 77		-	100	-	15
Bldg C - B1_Circulation 78		-	100	-	88
Bldg C - B1_Circulation 79		-	100	-	14
Bldg C - B1_Circulation 80		-	100	-	13
Bldg C - B1_Circulation 81		-	100	-	15
Bldg C - B1_Circulation 82		-	100	-	88
Bldg C - B1_Circulation 83		-	100	-	14
Bldg C - B1_Circulation 84		-	100	-	13
Bldg C - B1_Circulation 85		-	100	-	15
Bldg C - B1_Circulation 86		-	100	-	88
Bldg C - B1_Circulation 87		-	100	-	14
Bldg C - B1_Circulation 88		-	100	-	13
Bldg C - B1_Circulation 89		-	100	-	15
Bldg D - B1_Circulation 1 (Stairs)		-	100	-	743
Bldg D - B1_Circulation 2 (Stairs)		-	100	-	426
Bldg D - B1_Circulation 3		-	100	-	76
Bldg D - B1_Circulation 4		-	100	-	13
Bldg D - B1_Circulation 5		-	100	-	30
Bldg D - B1_Circulation 6		-	100	-	76
Bldg D - B1_Circulation 7		-	100	-	13
Bldg D - B1_Circulation 8		-	100	-	29
Bldg D - B1_Circulation 9		-	100	-	30
Bldg D - B1_Circulation 10		-	100	-	76
Bldg D - B1_Circulation 11		-	100	-	13
Bldg D - B1_Circulation 12		-	100	-	29
Bldg D - B1_Circulation 13		-	100	-	30
Bldg D - B1_Circulation 14		-	100	-	76
Bldg D - B1_Circulation 15		-	100	-	13
Bldg D - B1_Circulation 16		-	100	-	29
Bldg D - B1_Circulation 17		-	100	-	30
Bldg D - B1_Circulation 18		-	100	-	76
Bldg D - B1_Circulation 19		-	100	-	13
Bldg D - B1_Circulation 20		-	100	-	29
Bldg D - B1_Circulation 21		-	100	-	30
Bldg D - B1_Circulation 22		-	100	-	76
Bldg D - B1_Circulation 23		-	100	-	13
Bldg D - B1_Circulation 24		-	100	-	29
Bldg D - B1_Circulation 25		-	100	-	30
Bldg D - B1_Circulation 26		-	100	-	76
Bldg D - B1_Circulation 27		-	100	-	13
Bldg D - B1_Circulation 28		-	100	-	29
Bldg D - B1_Circulation 29		-	100	-	30
Bldg D - B1_Circulation 30		-	100	-	76

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Circulation 31		-	100	-	13
Bldg D - B1_Circulation 32		-	100	-	29
Bldg D - B1_Circulation 33		-	100	-	30
Bldg D - B1_Circulation 34		-	100	-	76
Bldg D - B1_Circulation 35		-	100	-	13
Bldg D - B1_Circulation 36		-	100	-	29
Bldg D - B1_Circulation 37		-	100	-	30
Bldg D - B1_Circulation 38		-	100	-	76
Bldg D - B1_Circulation 39		-	100	-	13
Bldg D - B1_Circulation 40		-	100	-	29
Bldg D - B1_Circulation 41		-	100	-	30
Bldg D - B1_Circulation 42		-	100	-	76
Bldg D - B1_Circulation 43		-	100	-	13
Bldg D - B1_Circulation 44		-	100	-	29
Bldg D - B1_Circulation 45		-	100	-	30
Bldg D - B1_Circulation 46		-	100	-	76
Bldg D - B1_Circulation 47		-	100	-	13
Bldg D - B1_Circulation 48		-	100	-	29
Bldg D - B1_Circulation 49		-	100	-	30
Bldg D - B1_Circulation 50		-	100	-	76
Bldg D - B1_Circulation 51		-	100	-	13
Bldg D - B1_Circulation 52		-	100	-	29
Bldg D - B1_Circulation 53		-	100	-	76
Bldg D - B1_Circulation 54		-	100	-	13
Bldg D - B1_Circulation 55		-	100	-	29
Bldg D - B1_Circulation 56		-	100	-	76
Bldg D - B1_Circulation 57		-	100	-	13
Bldg D - B1_Circulation 58		-	100	-	29
Bldg D - B1_Circulation 59		-	100	-	76
Bldg D - B1_Circulation 60		-	100	-	13
Bldg D - B1_Circulation 61		-	100	-	29
Bldg D - B1_Circulation 62		-	100	-	76
Bldg D - B1_Circulation 63		-	100	-	13
Bldg D - B1_Circulation 64		-	100	-	29
Bldg D - B1_Circulation 65		-	100	-	76
Bldg D - B1_Circulation 66		-	100	-	13
Bldg D - B1_Circulation 67		-	100	-	29
Bldg D - B1_Circulation 68		-	100	-	76
Bldg D - B1_Circulation 69		-	100	-	13
Bldg D - B1_Circulation 70		-	100	-	29
Bldg D - B1_Circulation 71		-	100	-	76
Bldg D - B1_Circulation 72		-	100	-	13
Bldg D - B1_Circulation 73		-	100	-	29

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Circulation 74		-	100	-	76
Bldg D - B1_Circulation 75		-	100	-	13
Bldg D - B1_Circulation 76		-	100	-	29
Bldg D - B1_Circulation 77		-	100	-	76
Bldg D - B1_Circulation 78		-	100	-	13
Bldg D - B1_Circulation 79		-	100	-	29
Bldg D - B1_Circulation 80		-	100	-	76
Bldg D - B1_Circulation 81		-	100	-	13
Bldg D - B1_Circulation 82		-	100	-	29
Bldg A - B1_Toilet 1		-	100	-	44
Bldg A - B1_Toilet 2		-	100	-	43
Bldg A - B1_Toilet 3		-	100	-	44
Bldg A - B1_Toilet 4		-	100	-	43
Bldg A - B1_Toilet 5		-	100	-	44
Bldg A - B1_Toilet 6		-	100	-	43
Bldg A - B1_Toilet 7		-	100	-	44
Bldg A - B1_Toilet 8		-	100	-	43
Bldg A - B1_Toilet 9		-	100	-	44
Bldg A - B1_Toilet 10		-	100	-	43
Bldg A - B1_Toilet 11		-	100	-	44
Bldg A - B1_Toilet 12		-	100	-	43
Bldg A - B1_Toilet 13		-	100	-	44
Bldg A - B1_Toilet 14		-	100	-	43
Bldg A - B1_Toilet 15		-	100	-	44
Bldg A - B1_Toilet 16		-	100	-	44
Bldg B - B1_Toilet 1		-	100	-	57
Bldg B - B1_Toilet 2		-	100	-	54
Bldg B - B1_Toilet 3		-	100	-	90
Bldg B - B1_Toilet 4		-	100	-	61
Bldg B - B1_Toilet 5		-	100	-	57
Bldg B - B1_Toilet 6		-	100	-	54
Bldg B - B1_Toilet 7		-	100	-	90
Bldg B - B1_Toilet 8		-	100	-	61
Bldg B - B1_Toilet 9		-	100	-	57
Bldg B - B1_Toilet 10		-	100	-	54
Bldg B - B1_Toilet 11		-	100	-	90
Bldg B - B1_Toilet 12		-	100	-	61
Bldg B - B1_Toilet 13		-	100	-	57
Bldg B - B1_Toilet 14		-	100	-	54
Bldg B - B1_Toilet 15		-	100	-	90
Bldg B - B1_Toilet 16		-	100	-	61
Bldg B - B1_Toilet 17		-	100	-	57
Bldg B - B1_Toilet 18		-	100	-	54

General lighting and display lighting		Luminous efficacy [lm/W]			
Zone name		Luminaire	Lamp	Display lamp	General lighting [W]
	Standard value	60	60	22	
Bldg B - B1_Toilet 19		-	100	-	90
Bldg B - B1_Toilet 20		-	100	-	61
Bldg B - B1_Toilet 21		-	100	-	57
Bldg B - B1_Toilet 22		-	100	-	54
Bldg B - B1_Toilet 23		-	100	-	90
Bldg B - B1_Toilet 24		-	100	-	61
Bldg B - B1_Toilet 25		-	100	-	57
Bldg B - B1_Toilet 26		-	100	-	54
Bldg B - B1_Toilet 27		-	100	-	90
Bldg B - B1_Toilet 28		-	100	-	61
Bldg B - B1_Toilet 29		-	100	-	57
Bldg B - B1_Toilet 30		-	100	-	54
Bldg B - B1_Toilet 31		-	100	-	90
Bldg B - B1_Toilet 32		-	100	-	61
Bldg B - B1_Toilet 33		-	100	-	57
Bldg B - B1_Toilet 34		-	100	-	54
Bldg B - B1_Toilet 35		-	100	-	90
Bldg B - B1_Toilet 36		-	100	-	57
Bldg B - B1_Toilet 37		-	100	-	54
Bldg B - B1_Toilet 38		-	100	-	90
Bldg B - B1_Toilet 39		-	100	-	57
Bldg B - B1_Toilet 40		-	100	-	54
Bldg C - B1_Toilet 1		-	100	-	61
Bldg C - B1_Toilet 2		-	100	-	56
Bldg C - B1_Toilet 3		-	100	-	91
Bldg C - B1_Toilet 4		-	100	-	63
Bldg C - B1_Toilet 5		-	100	-	61
Bldg C - B1_Toilet 6		-	100	-	56
Bldg C - B1_Toilet 7		-	100	-	91
Bldg C - B1_Toilet 8		-	100	-	63
Bldg C - B1_Toilet 9		-	100	-	61
Bldg C - B1_Toilet 10		-	100	-	56
Bldg C - B1_Toilet 11		-	100	-	91
Bldg C - B1_Toilet 12		-	100	-	63
Bldg C - B1_Toilet 13		-	100	-	61
Bldg C - B1_Toilet 14		-	100	-	56
Bldg C - B1_Toilet 15		-	100	-	91
Bldg C - B1_Toilet 16		-	100	-	63
Bldg C - B1_Toilet 17		-	100	-	61
Bldg C - B1_Toilet 18		-	100	-	56
Bldg C - B1_Toilet 19		-	100	-	91
Bldg C - B1_Toilet 20		-	100	-	63
Bldg C - B1_Toilet 21		-	100	-	61

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Toilet 22		-	100	-	56
Bldg C - B1_Toilet 23		-	100	-	91
Bldg C - B1_Toilet 24		-	100	-	63
Bldg C - B1_Toilet 25		-	100	-	61
Bldg C - B1_Toilet 26		-	100	-	56
Bldg C - B1_Toilet 27		-	100	-	91
Bldg C - B1_Toilet 28		-	100	-	63
Bldg C - B1_Toilet 29		-	100	-	61
Bldg C - B1_Toilet 30		-	100	-	56
Bldg C - B1_Toilet 31		-	100	-	91
Bldg C - B1_Toilet 32		-	100	-	63
Bldg C - B1_Toilet 33		-	100	-	61
Bldg C - B1_Toilet 34		-	100	-	56
Bldg C - B1_Toilet 35		-	100	-	91
Bldg C - B1_Toilet 36		-	100	-	63
Bldg C - B1_Toilet 37		-	100	-	61
Bldg C - B1_Toilet 38		-	100	-	56
Bldg C - B1_Toilet 39		-	100	-	91
Bldg C - B1_Toilet 40		-	100	-	61
Bldg D - B1_Toilet 1		-	100	-	72
Bldg D - B1_Toilet 2		-	100	-	67
Bldg D - B1_Toilet 3		-	100	-	76
Bldg D - B1_Toilet 4		-	100	-	72
Bldg D - B1_Toilet 5		-	100	-	67
Bldg D - B1_Toilet 6		-	100	-	76
Bldg D - B1_Toilet 7		-	100	-	72
Bldg D - B1_Toilet 8		-	100	-	67
Bldg D - B1_Toilet 9		-	100	-	76
Bldg D - B1_Toilet 10		-	100	-	72
Bldg D - B1_Toilet 11		-	100	-	67
Bldg D - B1_Toilet 12		-	100	-	76
Bldg D - B1_Toilet 13		-	100	-	72
Bldg D - B1_Toilet 14		-	100	-	67
Bldg D - B1_Toilet 15		-	100	-	76
Bldg D - B1_Toilet 16		-	100	-	72
Bldg D - B1_Toilet 17		-	100	-	67
Bldg D - B1_Toilet 18		-	100	-	76
Bldg D - B1_Toilet 19		-	100	-	72
Bldg D - B1_Toilet 20		-	100	-	67
Bldg D - B1_Toilet 21		-	100	-	76
Bldg D - B1_Toilet 22		-	100	-	72
Bldg D - B1_Toilet 23		-	100	-	67
Bldg D - B1_Toilet 24		-	100	-	76

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Toilet 25		-	100	-	72
Bldg D - B1_Toilet 26		-	100	-	67
Bldg D - B1_Toilet 27		-	100	-	76
Bldg D - B1_Toilet 28		-	100	-	72
Bldg D - B1_Toilet 29		-	100	-	67
Bldg D - B1_Toilet 30		-	100	-	76
Bldg D - B1_Toilet 31		-	100	-	72
Bldg D - B1_Toilet 32		-	100	-	67
Bldg D - B1_Toilet 33		-	100	-	76
Bldg D - B1_Toilet 34		-	100	-	72
Bldg D - B1_Toilet 35		-	100	-	67
Bldg D - B1_Toilet 36		-	100	-	76
Bldg D - B1_Toilet 37		-	100	-	67
Bldg D - B1_Toilet 38		-	100	-	76
Bldg D - B1_Toilet 39		-	100	-	67
Bldg D - B1_Toilet 40		-	100	-	76
Bldg B - B1_Toilet 41		-	100	-	90
Bldg B - B1_Toilet 42		-	100	-	57
Bldg B - B1_Toilet 43		-	100	-	54
Bldg B - B1_Toilet 44		-	100	-	90
Bldg B - B1_Circulation 101		-	100	-	15
Bldg B - B1_Circulation 102		-	100	-	13
Bldg B - B1_Circulation 103		-	100	-	15
Bldg B - B1_Circulation 104		-	100	-	47
Bldg B - B1_Circulation 105		-	100	-	15
Bldg C - B1_Toilet 41		-	100	-	56
Bldg C - B1_Toilet 42		-	100	-	91
Bldg C - B1_Toilet 43		-	100	-	61
Bldg C - B1_Toilet 44		-	100	-	56
Bldg C - B1_Toilet 45		-	100	-	91
Bldg C - B1_Toilet 46		-	100	-	61
Bldg C - B1_Toilet 47		-	100	-	56
Bldg C - B1_Toilet 48		-	100	-	91
Bldg D - B1_Toilet 41		-	100	-	67
Bldg D - B1_Toilet 42		-	100	-	76
Bldg D - B1_Toilet 43		-	100	-	67
Bldg D - B1_Toilet 44		-	100	-	76
Bldg D - B1_Toilet 45		-	100	-	67
Bldg D - B1_Toilet 46		-	100	-	76
Bldg D - B1_Toilet 47		-	100	-	67
Bldg D - B1_Toilet 48		-	100	-	76
Bldg D - B1_Toilet 49		-	100	-	67
Bldg D - B1_Toilet 50		-	100	-	76

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Toilet 51		-	100	-	67
Bldg D - B1_Toilet 52		-	100	-	76
Bldg D - B1_Toilet 53		-	100	-	67
Bldg D - B1_Toilet 54		-	100	-	76
Bldg D - B1_Toilet 55		-	100	-	67
Bldg D - B1_Toilet 56		-	100	-	76
Bldg A - B1_Store (Refuse) 1		100	-	-	82
Bldg B - B1_Store (Refuse) 1		100	-	-	131
Bldg C - B1_Store (Refuse) 1		100	-	-	127
Bldg D - B1_Store (Refuse) 1		100	-	-	128
Bldg A - B1_Plant 1		100	-	-	911
Bldg B - B1_Plant 1		100	-	-	234
Bldg B - B1_Plant 2		100	-	-	329
Bldg C - B1_Plant 1		100	-	-	334
Bldg C - B1_Plant 2		100	-	-	328
Bldg D - B1_Plant 1		100	-	-	1122

Criterion 3: The spaces in the building should have appropriate passive control measures to limit solar gains

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg A - B1_Office 1	NO (-39%)	NO
Bldg A - B1_Office 2	NO (-24%)	NO
Bldg A - B1_Office 3	NO (-19%)	NO
Bldg A - B1_Office 4	YES (+2%)	NO
Bldg A - B1_Office 5	NO (-18%)	NO
Bldg A - B1_Office 6	NO (-36%)	NO
Bldg A - B1_Office 7	NO (-32%)	NO
Bldg A - B1_Office 8	NO (-35%)	NO
Bldg A - B1_Office 9	NO (-84%)	NO
Bldg A - B1_Office 10	NO (-22%)	NO
Bldg A - B1_Office 11	NO (-39%)	NO
Bldg A - B1_Office 12	NO (-37%)	NO
Bldg A - B1_Office 13	NO (-42%)	NO
Bldg A - B1_Office 14	NO (-24%)	NO
Bldg A - B1_Office 15	NO (-21%)	NO
Bldg A - B1_Office 16	YES (+16%)	NO
Bldg A - B1_Office 17	YES (+2%)	NO
Bldg A - B1_Office 18	NO (-20%)	NO
Bldg A - B1_Office 19	NO (-35%)	NO
Bldg A - B1_Office 20	NO (-32%)	NO
Bldg A - B1_Office 21	NO (-38%)	NO
Bldg A - B1_Office 22	NO (-84%)	NO
Bldg A - B1_Office 23	NO (-21%)	NO
Bldg A - B1_Office 24	NO (-38%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg A - B1_Office 25	NO (-34%)	NO
Bldg A - B1_Office 26	NO (-41%)	NO
Bldg A - B1_Office 27	NO (-25%)	NO
Bldg A - B1_Office 28	NO (-21%)	NO
Bldg A - B1_Office 29	YES (+16%)	NO
Bldg A - B1_Office 30	YES (+2%)	NO
Bldg A - B1_Office 31	NO (-20%)	NO
Bldg A - B1_Office 32	NO (-36%)	NO
Bldg A - B1_Office 33	NO (-31%)	NO
Bldg A - B1_Office 34	NO (-37%)	NO
Bldg A - B1_Office 35	NO (-83%)	NO
Bldg A - B1_Office 36	NO (-17%)	NO
Bldg A - B1_Office 37	NO (-36%)	NO
Bldg A - B1_Office 38	NO (-34%)	NO
Bldg A - B1_Office 39	NO (-41%)	NO
Bldg A - B1_Office 40	NO (-25%)	NO
Bldg A - B1_Office 41	NO (-22%)	NO
Bldg A - B1_Office 42	NO (-21%)	NO
Bldg A - B1_Office 43	YES (+16%)	NO
Bldg A - B1_Office 44	YES (+2%)	NO
Bldg A - B1_Office 45	NO (-19%)	NO
Bldg A - B1_Office 46	NO (-30%)	NO
Bldg A - B1_Office 47	NO (-37%)	NO
Bldg A - B1_Office 48	NO (-31%)	NO
Bldg A - B1_Office 49	NO (-36%)	NO
Bldg A - B1_Office 50	NO (-84%)	NO
Bldg A - B1_Office 51	NO (-8%)	NO
Bldg A - B1_Office 52	NO (-33%)	NO
Bldg A - B1_Office 53	NO (-24%)	NO
Bldg A - B1_Office 54	NO (-28%)	NO
Bldg A - B1_Office 55	NO (-17%)	NO
Bldg A - B1_Office 56	NO (-36%)	NO
Bldg A - B1_Office 57	NO (-16%)	NO
Bldg A - B1_Office 58	NO (-33%)	NO
Bldg A - B1_Office 59	NO (-28%)	NO
Bldg A - B1_Office 60	NO (-66%)	NO
Bldg A - B1_Office 61	NO (-57%)	NO
Bldg A - B1_Office 62	YES (+4%)	NO
Bldg A - B1_Office 63	NO (-18%)	NO
Bldg A - B1_Office 64	NO (-22%)	NO
Bldg A - B1_Office 65	NO (-39%)	NO
Bldg A - B1_Office 66	NO (-34%)	NO
Bldg A - B1_Office 67	NO (-32%)	NO
Bldg A - B1_Office 68	NO (-15%)	NO
Bldg A - B1_Office 69	NO (-21%)	NO
Bldg A - B1_Office 70	YES (+18%)	NO
Bldg A - B1_Office 71	NO (-67%)	NO
Bldg A - B1_Office 72	NO (-56%)	NO
Bldg A - B1_Office 73	NO (-1%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg A - B1_Office 74	NO (-31%)	NO
Bldg A - B1_Office 75	NO (-24%)	NO
Bldg A - B1_Office 76	NO (-27%)	NO
Bldg A - B1_Office 77	NO (-16%)	NO
Bldg A - B1_Office 78	NO (-35%)	NO
Bldg A - B1_Office 79	NO (-14%)	NO
Bldg A - B1_Office 80	NO (-31%)	NO
Bldg A - B1_Office 81	NO (-25%)	NO
Bldg A - B1_Office 82	NO (-56%)	NO
Bldg A - B1_Office 83	NO (-65%)	NO
Bldg A - B1_Office 84	YES (+4%)	NO
Bldg A - B1_Office 85	NO (-17%)	NO
Bldg A - B1_Office 86	NO (-19%)	NO
Bldg A - B1_Office 87	NO (-37%)	NO
Bldg A - B1_Office 88	NO (-33%)	NO
Bldg A - B1_Office 89	NO (-31%)	NO
Bldg A - B1_Office 90	NO (-15%)	NO
Bldg A - B1_Office 91	NO (-21%)	NO
Bldg A - B1_Office 92	YES (+18%)	NO
Bldg A - B1_Office 93	NO (-66%)	NO
Bldg A - B1_Office 94	NO (-56%)	NO
Bldg A - B1_Office 95	YES (+5%)	NO
Bldg A - B1_Office 96	NO (-29%)	NO
Bldg A - B1_Office 97	NO (-23%)	NO
Bldg A - B1_Office 98	NO (-27%)	NO
Bldg A - B1_Office 99	NO (-14%)	NO
Bldg A - B1_Office 100	NO (-33%)	NO
Bldg B - B1_Office 1	NO (-15%)	NO
Bldg B - B1_Office 2	NO (-14%)	NO
Bldg B - B1_Office 3	NO (-16%)	NO
Bldg B - B1_Office 4	NO (-15%)	NO
Bldg B - B1_Office 5	NO (-52%)	NO
Bldg B - B1_Office 6	NO (-71%)	NO
Bldg B - B1_Office 7	NO (-65%)	NO
Bldg B - B1_Office 8	NO (-34%)	NO
Bldg B - B1_Office 9	NO (-36%)	NO
Bldg B - B1_Office 10	NO (-46%)	NO
Bldg B - B1_Office 11	NO (-36%)	NO
Bldg B - B1_Office 12	NO (-52%)	NO
Bldg B - B1_Office 13	NO (-49%)	NO
Bldg B - B1_Office 14	NO (-12%)	NO
Bldg B - B1_Office 15	NO (-14%)	NO
Bldg B - B1_Office 16	NO (-63%)	NO
Bldg B - B1_Office 17	NO (-15%)	NO
Bldg B - B1_Office 18	NO (-15%)	NO
Bldg B - B1_Office 19	NO (-40%)	NO
Bldg B - B1_Office 20	NO (-23%)	NO
Bldg B - B1_Office 21	NO (-36%)	NO
Bldg B - B1_Office 22	NO (-45%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg B - B1_Office 23	NO (-36%)	NO
Bldg B - B1_Office 24	NO (-38%)	NO
Bldg B - B1_Office 25	NO (-73%)	NO
Bldg B - B1_Office 26	NO (-41%)	NO
Bldg B - B1_Office 27	NO (-46%)	NO
Bldg B - B1_Office 28	NO (-49%)	NO
Bldg B - B1_Office 29	NO (-51%)	NO
Bldg B - B1_Office 30	NO (-79%)	NO
Bldg B - B1_Office 31	NO (-12%)	NO
Bldg B - B1_Office 32	NO (-14%)	NO
Bldg B - B1_Office 33	NO (-63%)	NO
Bldg B - B1_Office 34	NO (-15%)	NO
Bldg B - B1_Office 35	NO (-15%)	NO
Bldg B - B1_Office 36	NO (-39%)	NO
Bldg B - B1_Office 37	NO (-21%)	NO
Bldg B - B1_Office 38	NO (-36%)	NO
Bldg B - B1_Office 39	NO (-46%)	NO
Bldg B - B1_Office 40	NO (-35%)	NO
Bldg B - B1_Office 41	NO (-35%)	NO
Bldg B - B1_Office 42	NO (-75%)	NO
Bldg B - B1_Office 43	NO (-38%)	NO
Bldg B - B1_Office 44	NO (-48%)	NO
Bldg B - B1_Office 45	NO (-49%)	NO
Bldg B - B1_Office 46	NO (-43%)	NO
Bldg B - B1_Office 47	NO (-80%)	NO
Bldg B - B1_Office 48	NO (-12%)	NO
Bldg B - B1_Office 49	NO (-14%)	NO
Bldg B - B1_Office 50	NO (-63%)	NO
Bldg B - B1_Office 51	NO (-15%)	NO
Bldg B - B1_Office 52	NO (-15%)	NO
Bldg B - B1_Office 53	NO (-39%)	NO
Bldg B - B1_Office 54	NO (-16%)	NO
Bldg B - B1_Office 55	NO (-35%)	NO
Bldg B - B1_Office 56	NO (-45%)	NO
Bldg B - B1_Office 57	NO (-34%)	NO
Bldg B - B1_Office 58	NO (-34%)	NO
Bldg B - B1_Office 59	NO (-77%)	NO
Bldg B - B1_Office 60	NO (-37%)	NO
Bldg B - B1_Office 61	NO (-71%)	NO
Bldg B - B1_Office 62	NO (-40%)	NO
Bldg B - B1_Office 63	NO (-72%)	NO
Bldg B - B1_Office 64	NO (-49%)	NO
Bldg B - B1_Office 65	NO (-48%)	NO
Bldg B - B1_Office 66	NO (-80%)	NO
Bldg B - B1_Office 67	NO (-13%)	NO
Bldg B - B1_Office 68	NO (-31%)	NO
Bldg B - B1_Office 69	NO (-32%)	NO
Bldg B - B1_Office 70	NO (-74%)	NO
Bldg B - B1_Office 71	NO (-35%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg B - B1_Office 72	NO (-12%)	NO
Bldg B - B1_Office 73	NO (-14%)	NO
Bldg B - B1_Office 74	NO (-63%)	NO
Bldg B - B1_Office 75	NO (-15%)	NO
Bldg B - B1_Office 76	NO (-15%)	NO
Bldg B - B1_Office 77	NO (-38%)	NO
Bldg B - B1_Office 78	NO (-80%)	NO
Bldg B - B1_Office 79	NO (-47%)	NO
Bldg B - B1_Office 80	NO (-47%)	NO
Bldg B - B1_Office 81	NO (-10%)	NO
Bldg B - B1_Office 82	NO (-32%)	NO
Bldg B - B1_Office 83	NO (-31%)	NO
Bldg B - B1_Office 84	NO (-61%)	NO
Bldg B - B1_Office 85	NO (-4%)	NO
Bldg B - B1_Office 86	NO (-28%)	NO
Bldg B - B1_Office 87	NO (-30%)	NO
Bldg B - B1_Office 88	NO (-72%)	NO
Bldg B - B1_Office 89	NO (-29%)	NO
Bldg B - B1_Office 90	NO (-12%)	NO
Bldg B - B1_Office 91	NO (-13%)	NO
Bldg B - B1_Office 92	NO (-63%)	NO
Bldg B - B1_Office 93	NO (-14%)	NO
Bldg B - B1_Office 94	NO (-15%)	NO
Bldg B - B1_Office 95	NO (-37%)	NO
Bldg B - B1_Office 96	NO (-80%)	NO
Bldg B - B1_Office 97	NO (-47%)	NO
Bldg B - B1_Office 98	NO (-45%)	NO
Bldg B - B1_Office 99	NO (-7%)	NO
Bldg B - B1_Office 100	NO (-32%)	NO
Bldg C - B1_Office 1	NO (-15%)	NO
Bldg C - B1_Office 2	NO (-14%)	NO
Bldg C - B1_Office 3	NO (-64%)	NO
Bldg C - B1_Office 4	NO (-14%)	NO
Bldg C - B1_Office 5	NO (-15%)	NO
Bldg C - B1_Office 6	NO (-63%)	NO
Bldg C - B1_Office 7	NO (-51%)	NO
Bldg C - B1_Office 9	NO (-36%)	NO
Bldg C - B1_Office 10	NO (-50%)	NO
Bldg C - B1_Office 11	NO (-46%)	NO
Bldg C - B1_Office 12	NO (-36%)	NO
Bldg C - B1_Office 13	NO (-36%)	NO
Bldg C - B1_Office 14	NO (-14%)	NO
Bldg C - B1_Office 15	NO (-15%)	NO
Bldg C - B1_Office 16	NO (-63%)	NO
Bldg C - B1_Office 17	NO (-13%)	NO
Bldg C - B1_Office 18	NO (-16%)	NO
Bldg C - B1_Office 19	NO (-63%)	NO
Bldg C - B1_Office 20	NO (-36%)	NO
Bldg C - B1_Office 21	NO (-91%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg C - B1_Office 22	NO (-98%)	NO
Bldg C - B1_Office 23	NO (-98%)	NO
Bldg C - B1_Office 24	NO (-96%)	NO
Bldg C - B1_Office 25	NO (-80%)	NO
Bldg C - B1_Office 26	NO (-43%)	NO
Bldg C - B1_Office 27	NO (-36%)	NO
Bldg C - B1_Office 28	NO (-46%)	NO
Bldg C - B1_Office 29	NO (-95%)	NO
Bldg C - B1_Office 30	NO (-36%)	NO
Bldg C - B1_Office 31	NO (-15%)	NO
Bldg C - B1_Office 32	NO (-14%)	NO
Bldg C - B1_Office 33	NO (-15%)	NO
Bldg C - B1_Office 34	NO (-63%)	NO
Bldg C - B1_Office 35	NO (-13%)	NO
Bldg C - B1_Office 36	NO (-16%)	NO
Bldg C - B1_Office 37	NO (-63%)	NO
Bldg C - B1_Office 38	NO (-36%)	NO
Bldg C - B1_Office 39	NO (-91%)	NO
Bldg C - B1_Office 40	NO (-98%)	NO
Bldg C - B1_Office 41	NO (-98%)	NO
Bldg C - B1_Office 42	NO (-97%)	NO
Bldg C - B1_Office 43	NO (-81%)	NO
Bldg C - B1_Office 44	NO (-41%)	NO
Bldg C - B1_Office 45	NO (-36%)	NO
Bldg C - B1_Office 46	NO (-47%)	NO
Bldg C - B1_Office 47	NO (-95%)	NO
Bldg C - B1_Office 48	NO (-36%)	NO
Bldg C - B1_Office 49	NO (-15%)	NO
Bldg C - B1_Office 50	NO (-14%)	NO
Bldg C - B1_Office 51	NO (-15%)	NO
Bldg C - B1_Office 52	NO (-63%)	NO
Bldg C - B1_Office 53	NO (-13%)	NO
Bldg C - B1_Office 54	NO (-16%)	NO
Bldg C - B1_Office 55	NO (-63%)	NO
Bldg C - B1_Office 56	NO (-36%)	NO
Bldg C - B1_Office 57	NO (-91%)	NO
Bldg C - B1_Office 58	NO (-98%)	NO
Bldg C - B1_Office 59	NO (-98%)	NO
Bldg C - B1_Office 60	NO (-96%)	NO
Bldg C - B1_Office 61	NO (-82%)	NO
Bldg C - B1_Office 62	NO (-39%)	NO
Bldg C - B1_Office 63	NO (-34%)	NO
Bldg C - B1_Office 64	NO (-47%)	NO
Bldg C - B1_Office 65	NO (-85%)	NO
Bldg C - B1_Office 66	NO (-95%)	NO
Bldg C - B1_Office 67	NO (-36%)	NO
Bldg C - B1_Office 68	NO (-74%)	NO
Bldg C - B1_Office 69	NO (-14%)	NO
Bldg C - B1_Office 70	NO (-14%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg C - B1_Office 71	NO (-15%)	NO
Bldg C - B1_Office 72	NO (-62%)	NO
Bldg C - B1_Office 73	NO (-12%)	NO
Bldg C - B1_Office 74	NO (-16%)	NO
Bldg C - B1_Office 75	NO (-63%)	NO
Bldg C - B1_Office 76	NO (-35%)	NO
Bldg C - B1_Office 77	NO (-82%)	NO
Bldg C - B1_Office 78	NO (-47%)	NO
Bldg C - B1_Office 79	NO (-45%)	NO
Bldg C - B1_Office 80	NO (-38%)	NO
Bldg C - B1_Office 81	NO (-74%)	NO
Bldg C - B1_Office 82	NO (-37%)	NO
Bldg C - B1_Office 83	NO (-31%)	NO
Bldg C - B1_Office 84	NO (-15%)	NO
Bldg C - B1_Office 85	NO (-34%)	NO
Bldg C - B1_Office 86	NO (-31%)	NO
Bldg C - B1_Office 87	NO (-60%)	NO
Bldg C - B1_Office 88	NO (-11%)	NO
Bldg C - B1_Office 89	NO (-14%)	NO
Bldg C - B1_Office 90	NO (-15%)	NO
Bldg C - B1_Office 91	NO (-62%)	NO
Bldg C - B1_Office 92	NO (-12%)	NO
Bldg C - B1_Office 93	NO (-16%)	NO
Bldg C - B1_Office 94	NO (-63%)	NO
Bldg C - B1_Office 95	NO (-35%)	NO
Bldg C - B1_Office 96	NO (-82%)	NO
Bldg C - B1_Office 97	NO (-45%)	NO
Bldg C - B1_Office 98	NO (-47%)	NO
Bldg C - B1_Office 99	NO (-34%)	NO
Bldg C - B1_Office 100	NO (-73%)	NO
Bldg D - B1_Office 1	YES (+2%)	NO
Bldg D - B1_Office 2	YES (+1%)	NO
Bldg D - B1_Office 3	NO (-25%)	NO
Bldg D - B1_Office 4	NO (-46%)	NO
Bldg D - B1_Office 5	NO (-38%)	NO
Bldg D - B1_Office 6	NO (-32%)	NO
Bldg D - B1_Office 7	NO (-15%)	NO
Bldg D - B1_Office 8	NO (-77%)	NO
Bldg D - B1_Office 9	YES (+1%)	NO
Bldg D - B1_Office 10	YES (+2%)	NO
Bldg D - B1_Office 11	NO (-29%)	NO
Bldg D - B1_Office 12	NO (-40%)	NO
Bldg D - B1_Office 13	NO (-31%)	NO
Bldg D - B1_Office 14	NO (-15%)	NO
Bldg D - B1_Office 15	NO (-72%)	NO
Bldg D - B1_Office 16	NO (-9%)	NO
Bldg D - B1_Office 17	YES (+1%)	NO
Bldg D - B1_Office 18	YES (+1%)	NO
Bldg D - B1_Office 19	NO (-29%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg D - B1_Office 20	NO (-38%)	NO
Bldg D - B1_Office 21	NO (-31%)	NO
Bldg D - B1_Office 22	NO (-15%)	NO
Bldg D - B1_Office 23	NO (-73%)	NO
Bldg D - B1_Office 24	NO (-8%)	NO
Bldg D - B1_Office 25	YES (+1%)	NO
Bldg D - B1_Office 26	YES (+1%)	NO
Bldg D - B1_Office 27	NO (-29%)	NO
Bldg D - B1_Office 28	NO (-37%)	NO
Bldg D - B1_Office 29	NO (-31%)	NO
Bldg D - B1_Office 30	NO (-15%)	NO
Bldg D - B1_Office 31	NO (-73%)	NO
Bldg D - B1_Office 32	NO (-8%)	NO
Bldg D - B1_Office 33	YES (+1%)	NO
Bldg D - B1_Office 34	YES (+1%)	NO
Bldg D - B1_Office 35	NO (-29%)	NO
Bldg D - B1_Office 36	NO (-36%)	NO
Bldg D - B1_Office 37	NO (-31%)	NO
Bldg D - B1_Office 38	NO (-15%)	NO
Bldg D - B1_Office 39	NO (-73%)	NO
Bldg D - B1_Office 40	NO (-8%)	NO
Bldg D - B1_Office 41	YES (+1%)	NO
Bldg D - B1_Office 42	YES (+1%)	NO
Bldg D - B1_Office 43	NO (-29%)	NO
Bldg D - B1_Office 44	NO (-34%)	NO
Bldg D - B1_Office 45	NO (-31%)	NO
Bldg D - B1_Office 46	NO (-15%)	NO
Bldg D - B1_Office 47	NO (-72%)	NO
Bldg D - B1_Office 48	NO (-8%)	NO
Bldg D - B1_Office 49	YES (+1%)	NO
Bldg D - B1_Office 50	YES (+1%)	NO
Bldg D - B1_Office 51	NO (-28%)	NO
Bldg D - B1_Office 52	NO (-32%)	NO
Bldg D - B1_Office 53	NO (-31%)	NO
Bldg D - B1_Office 54	NO (-15%)	NO
Bldg D - B1_Office 55	NO (-72%)	NO
Bldg D - B1_Office 56	NO (-8%)	NO
Bldg D - B1_Office 57	NO (-15%)	NO
Bldg D - B1_Office 58	NO (-30%)	NO
Bldg D - B1_Office 59	NO (-29%)	NO
Bldg D - B1_Office 60	NO (-28%)	NO
Bldg D - B1_Office 61	YES (+2%)	NO
Bldg D - B1_Office 62	YES (+1%)	NO
Bldg D - B1_Office 63	NO (-71%)	NO
Bldg D - B1_Office 64	NO (-8%)	NO
Bldg D - B1_Office 65	YES (+1%)	NO
Bldg D - B1_Office 66	YES (+2%)	NO
Bldg D - B1_Office 67	NO (-27%)	NO
Bldg D - B1_Office 68	NO (-27%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg D - B1_Office 69	NO (-30%)	NO
Bldg D - B1_Office 70	NO (-15%)	NO
Bldg D - B1_Office 71	NO (-70%)	NO
Bldg D - B1_Office 72	NO (-8%)	NO
Bldg D - B1_Office 73	YES (+1%)	NO
Bldg D - B1_Office 74	YES (+2%)	NO
Bldg D - B1_Office 75	NO (-27%)	NO
Bldg D - B1_Office 76	NO (-26%)	NO
Bldg D - B1_Office 77	NO (-29%)	NO
Bldg D - B1_Office 78	NO (-15%)	NO
Bldg D - B1_Office 79	NO (-69%)	NO
Bldg D - B1_Office 80	NO (-8%)	NO
Bldg D - B1_Office 81	YES (+1%)	NO
Bldg D - B1_Office 82	YES (+2%)	NO
Bldg D - B1_Office 83	NO (-26%)	NO
Bldg D - B1_Office 84	NO (-25%)	NO
Bldg D - B1_Office 85	NO (-28%)	NO
Bldg D - B1_Office 86	NO (-15%)	NO
Bldg D - B1_Office 87	NO (-68%)	NO
Bldg D - B1_Office 88	NO (-7%)	NO
Bldg D - B1_Office 89	YES (+1%)	NO
Bldg D - B1_Office 90	YES (+2%)	NO
Bldg D - B1_Office 91	NO (-25%)	NO
Bldg D - B1_Office 92	NO (-24%)	NO
Bldg D - B1_Office 93	NO (-27%)	NO
Bldg D - B1_Office 94	NO (-15%)	NO
Bldg D - B1_Office 95	NO (-68%)	NO
Bldg D - B1_Office 96	NO (-8%)	NO
Bldg D - B1_Office 97	YES (+2%)	NO
Bldg D - B1_Office 98	YES (+2%)	NO
Bldg D - B1_Office 99	NO (-19%)	NO
Bldg D - B1_Office 100	NO (-32%)	NO
Bldg A - B1_Office 101	NO (-12%)	NO
Bldg A - B1_Office 102	NO (-27%)	NO
Bldg A - B1_Office 103	NO (-22%)	NO
Bldg A - B1_Office 104	NO (-54%)	NO
Bldg A - B1_Office 105	NO (-65%)	NO
Bldg A - B1_Office 106	YES (+4%)	NO
Bldg A - B1_Office 107	NO (-16%)	NO
Bldg A - B1_Office 108	NO (-16%)	NO
Bldg A - B1_Office 109	NO (-36%)	NO
Bldg A - B1_Office 110	NO (-32%)	NO
Bldg A - B1_Office 111	NO (-29%)	NO
Bldg A - B1_Office 112	NO (-14%)	NO
Bldg A - B1_Office 113	NO (-20%)	NO
Bldg A - B1_Office 114	YES (+18%)	NO
Bldg A - B1_Office 115	NO (-66%)	NO
Bldg A - B1_Office 116	NO (-56%)	NO
Bldg A - B1_Office 117	YES (+7%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg A - B1_Office 118	NO (-28%)	NO
Bldg A - B1_Office 119	NO (-23%)	NO
Bldg A - B1_Office 120	NO (-27%)	NO
Bldg A - B1_Office 121	NO (-12%)	NO
Bldg A - B1_Office 122	NO (-28%)	NO
Bldg A - B1_Office 123	NO (-6%)	NO
Bldg A - B1_Office 124	NO (-24%)	NO
Bldg A - B1_Office 125	NO (-19%)	NO
Bldg A - B1_Office 126	NO (-54%)	NO
Bldg A - B1_Office 127	NO (-64%)	NO
Bldg A - B1_Office 128	YES (+7%)	NO
Bldg A - B1_Office 129	NO (-14%)	NO
Bldg A - B1_Office 130	NO (-11%)	NO
Bldg A - B1_Office 131	NO (-32%)	NO
Bldg A - B1_Office 132	NO (-27%)	NO
Bldg A - B1_Office 133	NO (-27%)	NO
Bldg A - B1_Office 134	NO (-13%)	NO
Bldg A - B1_Office 135	NO (-20%)	NO
Bldg A - B1_Office 136	YES (+18%)	NO
Bldg A - B1_Office 137	NO (-62%)	NO
Bldg A - B1_Office 138	NO (-55%)	NO
Bldg A - B1_Office 139	YES (+9%)	NO
Bldg A - B1_Office 140	NO (-12%)	NO
Bldg A - B1_Office 141	NO (-8%)	NO
Bldg A - B1_Office 142	NO (-30%)	NO
Bldg A - B1_Office 143	NO (-26%)	NO
Bldg A - B1_Office 144	NO (-27%)	NO
Bldg A - B1_Office 145	NO (-12%)	NO
Bldg A - B1_Office 146	NO (-20%)	NO
Bldg A - B1_Office 147	YES (+18%)	NO
Bldg A - B1_Office 148	NO (-59%)	NO
Bldg A - B1_Office 149	NO (-55%)	NO
Bldg A - B1_Office 150	YES (+11%)	NO
Bldg A - B1_Office 151	NO (-10%)	NO
Bldg A - B1_Office 152	NO (-4%)	NO
Bldg A - B1_Office 153	NO (-28%)	NO
Bldg A - B1_Office 154	NO (-25%)	NO
Bldg A - B1_Office 155	NO (-27%)	NO
Bldg A - B1_Office 156	NO (-12%)	NO
Bldg A - B1_Office 157	NO (-20%)	NO
Bldg A - B1_Office 158	YES (+18%)	NO
Bldg A - B1_Office 159	NO (-57%)	NO
Bldg A - B1_Office 160	NO (-55%)	NO
Bldg B - B1_Office 101	NO (-31%)	NO
Bldg B - B1_Office 102	NO (-59%)	NO
Bldg B - B1_Office 103	YES (+3%)	NO
Bldg B - B1_Office 104	NO (-26%)	NO
Bldg B - B1_Office 105	NO (-26%)	NO
Bldg B - B1_Office 106	NO (-67%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg B - B1_Office 107	NO (-18%)	NO
Bldg B - B1_Office 108	NO (-12%)	NO
Bldg B - B1_Office 109	NO (-12%)	NO
Bldg B - B1_Office 110	NO (-62%)	NO
Bldg B - B1_Office 111	NO (-13%)	NO
Bldg B - B1_Office 112	NO (-15%)	NO
Bldg B - B1_Office 113	NO (-35%)	NO
Bldg B - B1_Office 114	NO (-80%)	NO
Bldg B - B1_Office 115	NO (-47%)	NO
Bldg B - B1_Office 116	NO (-44%)	NO
Bldg B - B1_Office 117	YES (+3%)	NO
Bldg B - B1_Office 118	NO (-30%)	NO
Bldg B - B1_Office 119	NO (-26%)	NO
Bldg B - B1_Office 120	NO (-12%)	NO
Bldg B - B1_Office 121	NO (-24%)	NO
Bldg B - B1_Office 122	NO (-69%)	NO
Bldg B - B1_Office 123	NO (-10%)	NO
Bldg B - B1_Office 124	NO (-12%)	NO
Bldg B - B1_Office 125	NO (-11%)	NO
Bldg B - B1_Office 126	NO (-62%)	NO
Bldg B - B1_Office 127	NO (-11%)	NO
Bldg B - B1_Office 128	NO (-15%)	NO
Bldg B - B1_Office 129	NO (-33%)	NO
Bldg B - B1_Office 130	NO (-80%)	NO
Bldg B - B1_Office 131	NO (-46%)	NO
Bldg B - B1_Office 132	NO (-44%)	NO
Bldg B - B1_Office 133	NO (-27%)	NO
Bldg B - B1_Office 134	NO (-21%)	NO
Bldg B - B1_Office 135	NO (-65%)	NO
Bldg B - B1_Office 136	NO (-2%)	NO
Bldg B - B1_Office 137	NO (-9%)	NO
Bldg B - B1_Office 138	NO (-10%)	NO
Bldg B - B1_Office 139	NO (-61%)	NO
Bldg B - B1_Office 140	YES (+20%)	NO
Bldg B - B1_Office 141	NO (-13%)	NO
Bldg B - B1_Office 142	NO (-15%)	NO
Bldg B - B1_Office 143	NO (-31%)	NO
Bldg B - B1_Office 144	NO (-79%)	NO
Bldg B - B1_Office 145	NO (-43%)	NO
Bldg B - B1_Office 146	NO (-42%)	NO
Bldg B - B1_Office 147	NO (-27%)	NO
Bldg B - B1_Office 148	NO (-20%)	NO
Bldg B - B1_Office 149	NO (-63%)	NO
Bldg B - B1_Office 150	NO (-3%)	NO
Bldg B - B1_Office 151	NO (-8%)	NO
Bldg B - B1_Office 152	NO (-7%)	NO
Bldg B - B1_Office 153	NO (-9%)	NO
Bldg B - B1_Office 154	NO (-54%)	NO
Bldg B - B1_Office 155	NO (-27%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg B - B1_Office 156	NO (-20%)	NO
Bldg B - B1_Office 157	NO (-62%)	NO
Bldg B - B1_Office 158	NO (-2%)	NO
Bldg B - B1_Office 159	NO (-8%)	NO
Bldg B - B1_Office 160	NO (-6%)	NO
Bldg B - B1_Office 161	NO (-7%)	NO
Bldg B - B1_Office 162	NO (-53%)	NO
Bldg B - B1_Office 163	NO (-27%)	NO
Bldg B - B1_Office 164	NO (-20%)	NO
Bldg B - B1_Office 165	NO (-62%)	NO
Bldg B - B1_Office 166	NO (-2%)	NO
Bldg B - B1_Office 167	NO (-8%)	NO
Bldg B - B1_Office 168	NO (-6%)	NO
Bldg B - B1_Office 169	NO (-7%)	NO
Bldg B - B1_Office 170	NO (-53%)	NO
Bldg B - B1_Office 171	NO (-27%)	NO
Bldg B - B1_Office 172	NO (-20%)	NO
Bldg B - B1_Office 173	NO (-62%)	NO
Bldg B - B1_Office 174	NO (-2%)	NO
Bldg B - B1_Office 175	NO (-8%)	NO
Bldg B - B1_Office 176	NO (-5%)	NO
Bldg B - B1_Office 177	NO (-6%)	NO
Bldg B - B1_Office 178	NO (-52%)	NO
Bldg C - B1_Office 101	NO (-34%)	NO
Bldg C - B1_Office 102	NO (-29%)	NO
Bldg C - B1_Office 103	NO (-7%)	NO
Bldg C - B1_Office 104	NO (-31%)	NO
Bldg C - B1_Office 105	NO (-33%)	NO
Bldg C - B1_Office 106	NO (-11%)	NO
Bldg C - B1_Office 107	NO (-60%)	NO
Bldg C - B1_Office 108	NO (-15%)	NO
Bldg C - B1_Office 109	NO (-14%)	NO
Bldg C - B1_Office 110	NO (-62%)	NO
Bldg C - B1_Office 111	NO (-12%)	NO
Bldg C - B1_Office 112	NO (-16%)	NO
Bldg C - B1_Office 113	NO (-63%)	NO
Bldg C - B1_Office 114	NO (-35%)	NO
Bldg C - B1_Office 115	NO (-82%)	NO
Bldg C - B1_Office 116	NO (-47%)	NO
Bldg C - B1_Office 117	NO (-45%)	NO
Bldg C - B1_Office 118	NO (-29%)	NO
Bldg C - B1_Office 119	NO (-70%)	NO
Bldg C - B1_Office 120	NO (-31%)	NO
Bldg C - B1_Office 121	NO (-27%)	NO
Bldg C - B1_Office 122	NO (-2%)	NO
Bldg C - B1_Office 123	NO (-30%)	NO
Bldg C - B1_Office 124	NO (-33%)	NO
Bldg C - B1_Office 125	NO (-8%)	NO
Bldg C - B1_Office 126	NO (-60%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg C - B1_Office 127	NO (-11%)	NO
Bldg C - B1_Office 128	NO (-15%)	NO
Bldg C - B1_Office 129	NO (-61%)	NO
Bldg C - B1_Office 130	NO (-11%)	NO
Bldg C - B1_Office 131	NO (-16%)	NO
Bldg C - B1_Office 132	NO (-63%)	NO
Bldg C - B1_Office 133	NO (-34%)	NO
Bldg C - B1_Office 134	NO (-82%)	NO
Bldg C - B1_Office 135	NO (-44%)	NO
Bldg C - B1_Office 136	NO (-47%)	NO
Bldg C - B1_Office 137	NO (-23%)	NO
Bldg C - B1_Office 138	NO (-71%)	NO
Bldg C - B1_Office 139	NO (-27%)	NO
Bldg C - B1_Office 140	NO (-31%)	NO
Bldg C - B1_Office 141	NO (-9%)	NO
Bldg C - B1_Office 142	NO (-14%)	NO
Bldg C - B1_Office 143	NO (-60%)	NO
Bldg C - B1_Office 144	NO (-9%)	NO
Bldg C - B1_Office 145	NO (-16%)	NO
Bldg C - B1_Office 146	NO (-63%)	NO
Bldg C - B1_Office 147	NO (-32%)	NO
Bldg C - B1_Office 148	NO (-82%)	NO
Bldg C - B1_Office 149	NO (-44%)	NO
Bldg C - B1_Office 150	NO (-47%)	NO
Bldg C - B1_Office 151	NO (-15%)	NO
Bldg C - B1_Office 152	NO (-69%)	NO
Bldg C - B1_Office 153	NO (-26%)	NO
Bldg C - B1_Office 154	NO (-28%)	NO
Bldg C - B1_Office 155	NO (-9%)	NO
Bldg C - B1_Office 156	NO (-13%)	NO
Bldg C - B1_Office 157	NO (-61%)	NO
Bldg C - B1_Office 158	YES (+28%)	NO
Bldg C - B1_Office 159	NO (-14%)	NO
Bldg C - B1_Office 160	NO (-16%)	NO
Bldg C - B1_Office 161	NO (-61%)	NO
Bldg C - B1_Office 162	NO (-27%)	NO
Bldg C - B1_Office 163	NO (-81%)	NO
Bldg C - B1_Office 164	NO (-41%)	NO
Bldg C - B1_Office 165	NO (-43%)	NO
Bldg C - B1_Office 166	NO (-8%)	NO
Bldg C - B1_Office 167	NO (-66%)	NO
Bldg C - B1_Office 168	NO (-24%)	NO
Bldg C - B1_Office 169	NO (-27%)	NO
Bldg C - B1_Office 170	NO (-7%)	NO
Bldg C - B1_Office 171	NO (-9%)	NO
Bldg C - B1_Office 172	NO (-55%)	NO
Bldg C - B1_Office 173	NO (-10%)	NO
Bldg C - B1_Office 174	NO (-6%)	NO
Bldg C - B1_Office 175	NO (-63%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg C - B1_Office 176	NO (-22%)	NO
Bldg C - B1_Office 177	NO (-26%)	NO
Bldg C - B1_Office 178	NO (-7%)	NO
Bldg C - B1_Office 179	NO (-8%)	NO
Bldg C - B1_Office 180	NO (-8%)	NO
Bldg C - B1_Office 181	NO (-55%)	NO
Bldg C - B1_Office 182	NO (-6%)	NO
Bldg C - B1_Office 183	NO (-62%)	NO
Bldg C - B1_Office 184	NO (-21%)	NO
Bldg C - B1_Office 185	NO (-25%)	NO
Bldg C - B1_Office 186	NO (-7%)	NO
Bldg C - B1_Office 187	NO (-8%)	NO
Bldg C - B1_Office 188	NO (-7%)	NO
Bldg C - B1_Office 189	NO (-55%)	NO
Bldg C - B1_Office 190	NO (-21%)	NO
Bldg C - B1_Office 191	NO (-62%)	NO
Bldg C - B1_Office 192	NO (-5%)	NO
Bldg C - B1_Office 193	NO (-25%)	NO
Bldg C - B1_Office 194	NO (-7%)	NO
Bldg C - B1_Office 195	NO (-8%)	NO
Bldg C - B1_Office 196	NO (-5%)	NO
Bldg C - B1_Office 197	NO (-55%)	NO
Bldg C - B1_Office 198	NO (-4%)	NO
Bldg C - B1_Office 199	NO (-62%)	NO
Bldg C - B1_Office 200	NO (-21%)	NO
Bldg C - B1_Office 201	NO (-25%)	NO
Bldg D - B1_Office 101	NO (-12%)	NO
Bldg D - B1_Office 102	NO (-60%)	NO
Bldg D - B1_Office 103	YES (+2%)	NO
Bldg D - B1_Office 104	YES (+2%)	NO
Bldg D - B1_Office 105	NO (-19%)	NO
Bldg D - B1_Office 106	NO (-31%)	NO
Bldg D - B1_Office 107	NO (-13%)	NO
Bldg D - B1_Office 108	NO (-61%)	NO
Bldg D - B1_Office 109	YES (+2%)	NO
Bldg D - B1_Office 110	YES (+2%)	NO
Bldg D - B1_Office 111	NO (-19%)	NO
Bldg D - B1_Office 112	NO (-31%)	NO
Bldg D - B1_Office 113	NO (-13%)	NO
Bldg D - B1_Office 114	NO (-61%)	NO
Bldg D - B1_Office 115	YES (+2%)	NO
Bldg D - B1_Office 116	YES (+2%)	NO
Bldg D - B1_Office 117	NO (-19%)	NO
Bldg D - B1_Office 118	NO (-31%)	NO
Bldg D - B1_Office 119	NO (-13%)	NO
Bldg D - B1_Office 120	NO (-61%)	NO
Bldg D - B1_Office 121	YES (+2%)	NO
Bldg D - B1_Office 122	YES (+2%)	NO
Bldg D - B1_Office 123	NO (-19%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg D - B1_Office 124	NO (-31%)	NO
Bldg D - B1_Office 125	NO (-13%)	NO
Bldg D - B1_Office 126	NO (-61%)	NO
Bldg D - B1_Office 127	YES (+2%)	NO
Bldg D - B1_Office 128	YES (+2%)	NO
Bldg D - B1_Office 129	NO (-19%)	NO
Bldg D - B1_Office 130	NO (-31%)	NO
Bldg D - B1_Office 131	NO (-13%)	NO
Bldg D - B1_Office 132	NO (-61%)	NO
Bldg D - B1_Office 133	YES (+2%)	NO
Bldg D - B1_Office 134	YES (+2%)	NO
Bldg D - B1_Office 135	NO (-19%)	NO
Bldg D - B1_Office 136	NO (-31%)	NO
Bldg D - B1_Office 137	NO (-13%)	NO
Bldg D - B1_Office 138	NO (-61%)	NO
Bldg D - B1_Office 139	YES (+2%)	NO
Bldg D - B1_Office 140	YES (+2%)	NO
Bldg D - B1_Office 141	NO (-19%)	NO
Bldg D - B1_Office 142	NO (-31%)	NO
Bldg D - B1_Office 143	NO (-13%)	NO
Bldg D - B1_Office 144	NO (-61%)	NO
Bldg D - B1_Office 145	YES (+2%)	NO
Bldg D - B1_Office 146	YES (+2%)	NO
Bldg D - B1_Office 147	NO (-19%)	NO
Bldg D - B1_Office 148	NO (-31%)	NO
Bldg D - B1_Office 149	NO (-13%)	NO
Bldg D - B1_Office 150	NO (-61%)	NO
Bldg D - B1_Office 151	YES (+2%)	NO
Bldg D - B1_Office 152	YES (+2%)	NO
Bldg D - B1_Office 153	NO (-19%)	NO
Bldg D - B1_Office 154	NO (-31%)	NO
Bldg D - B1_Office 155	NO (-13%)	NO
Bldg D - B1_Office 156	NO (-61%)	NO
Bldg D - B1_Office 157	YES (+2%)	NO
Bldg D - B1_Office 158	YES (+2%)	NO
Bldg D - B1_Office 159	NO (-19%)	NO
Bldg D - B1_Office 160	NO (-30%)	NO
Bldg D - B1_Office 161	NO (-12%)	NO
Bldg D - B1_Office 162	NO (-61%)	NO

Criterion 4: The performance of the building, as built, should be consistent with the calculated BER

Separate submission

Criterion 5: The necessary provisions for enabling energy-efficient operation of the building should be in place

Separate submission

EPBD (Recast): Consideration of alternative energy systems

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

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Area [m ²]	86542	86542
External area [m ²]	56689	56689
Weather	SWI	SWI
Infiltration [m ³ /hm ² @ 50Pa]	3	3
Average conductance [W/K]	34028	28935
Average U-value [W/m ² K]	0.6	0.51
Alpha value* [%]	39.9	39.9

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

Building Use

% Area	Building Type
	A1/A2 Retail/Financial and Professional services
	A3/A4/A5 Restaurants and Cafes/Drinking Est./Takeaways
100	B1 Offices and Workshop businesses
	B2 to B7 General Industrial and Special Industrial Groups
	B8 Storage or Distribution
	C1 Hotels
	C2 Residential Institutions: Hospitals and Care Homes
	C2 Residential Institutions: Residential schools
	C2 Residential Institutions: Universities and colleges
	C2A Secure Residential Institutions
	Residential spaces
	D1 Non-residential Institutions: Community/Day Centre
	D1 Non-residential Institutions: Libraries, Museums, and Galleries
	D1 Non-residential Institutions: Education
	D1 Non-residential Institutions: Primary Health Care Building
	D1 Non-residential Institutions: Crown and County Courts
	D2 General Assembly and Leisure, Night Clubs, and Theatres
	Others: Passenger terminals
	Others: Emergency services
	Others: Miscellaneous 24hr activities
	Others: Car Parks 24 hrs
	Others: Stand alone utility block

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	2.67	2.71
Cooling	8.26	9.31
Auxiliary	14.71	10.25
Lighting	12.39	19.58
Hot water	2.73	2.73
Equipment*	39.72	39.72
TOTAL **	40.75	44.57

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

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

Energy Production by Technology [kWh/m²]

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

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	115.78	135.4
Primary energy* [kWh/m ²]	112.41	123.77
Total emissions [kg/m ²]	19.1	21

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

HVAC Systems Performance										
System Type	Heat dem MJ/m2	Cool dem MJ/m2	Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEFF	Cool SSEER	Heat gen SEFF	Cool gen SEER	
[ST] Fan coil systems, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	7.8	124.7	2.5	10.1	17.3	0.86	3.42	0.91	3.6
	Notional	6	147.9	2	11.4	11.9	0.82	3.6	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	12.2	0	3.9	0	1.1	0.86	0	0.91	0
	Notional	18.8	0	6.4	0	1.1	0.82	0	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	18.6	0	6	0	14.4	0.86	0	0.91	0
	Notional	43	0	14.6	0	11.7	0.82	0	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	19.8	0	6.4	0	7.7	0.86	0	0.91	0
	Notional	18.1	0	6.2	0	6.4	0.82	0	----	----

Key to terms

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

Key Features

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

Building fabric

Element	U _{i-Typ}	U _{i-Min}	Surface where the minimum value occurs*
Wall	0.23	0.14	External Wall
Floor	0.2	0.14	Exposed Floor
Roof	0.15	0.15	Roof
Windows, roof windows, and rooflights	1.5	1.21	External Wall (70% Glazed)
Personnel doors	1.5	-	No personal doors in project
Vehicle access & similar large doors	1.5	-	No vehicle doors in project
High usage entrance doors	1.5	-	No high usage entrance doors in project
U _{i-Typ} = Typical individual element U-values [W/(m²K)]			U _{i-Min} = Minimum individual element U-values [W/(m²K)]
* There might be more than one surface where the minimum U-value occurs.			

Air Permeability	Typical value	This building
m³/(h.m²) at 50 Pa	5	3



Appendix 4
Clean Scheme BRUKL

Project name

Reading Station Park - Clean Scheme

As designed

Date: Tue Feb 11 16:05:58 2020

Administrative information

Building Details

Address: Reading Station Park, Reading, RG1 8BA

Certification tool

Calculation engine: TAS

Calculation engine version: "v9.5.0"

Interface to calculation engine: TAS

Interface to calculation engine version: v9.5.0

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

Owner Details

Name: Aviva Investors

Telephone number: 02078096367

Address: Saint Helen's, 1 Undershaft, London, EC3P 3DQ

Certifier details

Name: Scott Hedges

Telephone number: 01932753739

Address: 51 Staines Road West, Sunbury-on-Thames, TW16 7AH

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

CO ₂ emission rate from the notional building, kgCO ₂ /m ² .annum	21
Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	21
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	19
Are emissions from the building less than or equal to the target?	BER ≤ TER
Are as built details the same as used in the BER calculations?	Separate submission

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

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

Building fabric

Element	U _a -Limit	U _a -Calc	U _i -Calc	Surface where the maximum value occurs*
Wall**	0.35	0.14	0.14	External Wall
Floor	0.25	0.14	0.14	Ground Floor
Roof	0.25	0.15	0.15	Roof
Windows***, roof windows, and rooflights	2.2	1.21	1.21	External Wall (70% Glazed)
Personnel doors	2.2	-	-	No personal doors in project
Vehicle access & similar large doors	1.5	-	-	No vehicle doors in project
High usage entrance doors	3.5	-	-	No high usage entrance doors in project
U _a -Limit = Limiting area-weighted average U-values [W/(m ² K)] U _a -Calc = Calculated area-weighted average U-values [W/(m ² K)] U _i -Calc = Calculated maximum individual element U-values [W/(m ² K)]				
* There might be more than one surface where the maximum U-value occurs. ** Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows. *** Display windows and similar glazing are excluded from the U-value check. N.B.: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.				

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

Building services

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

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

1- Office (700 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.89	3.6	-	1.9	0.7
Standard value	0.91*	2.6	N/A	1.6^	0.65
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for gas single boiler systems <=2 MW output. For single boiler systems >2 MW or multi-boiler systems, (overall) limiting efficiency is 0.86. For any individual boiler in a multi-boiler system, limiting efficiency is 0.82.					
^ Limiting SFP may be extended by the amounts specified in the Non-Domestic Building Services Compliance Guide if the system includes additional components as listed in the Guide.					

2- Circulation

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.89	-	-	-	-
Standard value	0.91*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for gas single boiler systems <=2 MW output. For single boiler systems >2 MW or multi-boiler systems, (overall) limiting efficiency is 0.86. For any individual boiler in a multi-boiler system, limiting efficiency is 0.82.					

3- Toilet (164 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.89	-	-	-	-
Standard value	0.91*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for gas single boiler systems <=2 MW output. For single boiler systems >2 MW or multi-boiler systems, (overall) limiting efficiency is 0.86. For any individual boiler in a multi-boiler system, limiting efficiency is 0.82.					

4- Refuse (4 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.89	-	-	-	-
Standard value	0.91*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for gas single boiler systems <=2 MW output. For single boiler systems >2 MW or multi-boiler systems, (overall) limiting efficiency is 0.86. For any individual boiler in a multi-boiler system, limiting efficiency is 0.82.					

1- DHW

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	0.91	0
Standard value	0.9*	N/A
* Standard shown is for gas boilers >30 kW output. For boilers <=30 kW output, limiting efficiency is 0.73.		

1- LTHW + Mini CHP

	CHPQA quality index	CHP electrical efficiency
This building	113	0.2
Standard value	105	0.2

"No zones in project where local mechanical ventilation, exhaust, or terminal unit is applicable"

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg A - B1_Office 1		100	-	-	543
Bldg A - B1_Office 2		100	-	-	967
Bldg A - B1_Office 3		100	-	-	205
Bldg A - B1_Office 4		100	-	-	611
Bldg A - B1_Office 5		100	-	-	197
Bldg A - B1_Office 6		100	-	-	725
Bldg A - B1_Office 7		100	-	-	616
Bldg A - B1_Office 8		100	-	-	471
Bldg A - B1_Office 9		100	-	-	3577
Bldg A - B1_Office 10		100	-	-	159
Bldg A - B1_Office 11		100	-	-	198
Bldg A - B1_Office 12		100	-	-	445
Bldg A - B1_Office 13		100	-	-	1072
Bldg A - B1_Office 14		100	-	-	967
Bldg A - B1_Office 15		100	-	-	205
Bldg A - B1_Office 16		100	-	-	155
Bldg A - B1_Office 17		100	-	-	171
Bldg A - B1_Office 18		100	-	-	197
Bldg A - B1_Office 19		100	-	-	725
Bldg A - B1_Office 20		100	-	-	616
Bldg A - B1_Office 21		100	-	-	191
Bldg A - B1_Office 22		100	-	-	4709
Bldg A - B1_Office 23		100	-	-	159
Bldg A - B1_Office 24		100	-	-	198
Bldg A - B1_Office 25		100	-	-	445
Bldg A - B1_Office 26		100	-	-	1072
Bldg A - B1_Office 27		100	-	-	967
Bldg A - B1_Office 28		100	-	-	205
Bldg A - B1_Office 29		100	-	-	155
Bldg A - B1_Office 30		100	-	-	171
Bldg A - B1_Office 31		100	-	-	197
Bldg A - B1_Office 32		100	-	-	725
Bldg A - B1_Office 33		100	-	-	616
Bldg A - B1_Office 34		100	-	-	191
Bldg A - B1_Office 35		100	-	-	4709
Bldg A - B1_Office 36		100	-	-	159
Bldg A - B1_Office 37		100	-	-	198
Bldg A - B1_Office 38		100	-	-	445
Bldg A - B1_Office 39		100	-	-	1072
Bldg A - B1_Office 40		100	-	-	507
Bldg A - B1_Office 41		100	-	-	460
Bldg A - B1_Office 42		100	-	-	205

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg A - B1_Office 43		100	-	-	155
Bldg A - B1_Office 44		100	-	-	171
Bldg A - B1_Office 45		100	-	-	197
Bldg A - B1_Office 46		100	-	-	442
Bldg A - B1_Office 47		100	-	-	284
Bldg A - B1_Office 48		100	-	-	616
Bldg A - B1_Office 49		100	-	-	191
Bldg A - B1_Office 50		100	-	-	4709
Bldg A - B1_Office 51		100	-	-	159
Bldg A - B1_Office 52		100	-	-	198
Bldg A - B1_Office 53		100	-	-	268
Bldg A - B1_Office 54		100	-	-	199
Bldg A - B1_Office 55		100	-	-	588
Bldg A - B1_Office 56		100	-	-	197
Bldg A - B1_Office 57		100	-	-	265
Bldg A - B1_Office 58		100	-	-	197
Bldg A - B1_Office 59		100	-	-	191
Bldg A - B1_Office 60		100	-	-	257
Bldg A - B1_Office 61		100	-	-	214
Bldg A - B1_Office 62		100	-	-	171
Bldg A - B1_Office 63		100	-	-	197
Bldg A - B1_Office 64		100	-	-	253
Bldg A - B1_Office 65		100	-	-	188
Bldg A - B1_Office 66		100	-	-	540
Bldg A - B1_Office 67		100	-	-	196
Bldg A - B1_Office 68		100	-	-	264
Bldg A - B1_Office 69		100	-	-	205
Bldg A - B1_Office 70		100	-	-	155
Bldg A - B1_Office 71		100	-	-	220
Bldg A - B1_Office 72		100	-	-	199
Bldg A - B1_Office 73		100	-	-	159
Bldg A - B1_Office 74		100	-	-	198
Bldg A - B1_Office 75		100	-	-	268
Bldg A - B1_Office 76		100	-	-	199
Bldg A - B1_Office 77		100	-	-	588
Bldg A - B1_Office 78		100	-	-	197
Bldg A - B1_Office 79		100	-	-	265
Bldg A - B1_Office 80		100	-	-	197
Bldg A - B1_Office 81		100	-	-	191
Bldg A - B1_Office 82		100	-	-	214
Bldg A - B1_Office 83		100	-	-	257
Bldg A - B1_Office 84		100	-	-	171
Bldg A - B1_Office 85		100	-	-	197

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg A - B1_Office 86		100	-	-	253
Bldg A - B1_Office 87		100	-	-	188
Bldg A - B1_Office 88		100	-	-	540
Bldg A - B1_Office 89		100	-	-	196
Bldg A - B1_Office 90		100	-	-	264
Bldg A - B1_Office 91		100	-	-	205
Bldg A - B1_Office 92		100	-	-	155
Bldg A - B1_Office 93		100	-	-	220
Bldg A - B1_Office 94		100	-	-	199
Bldg A - B1_Office 95		100	-	-	159
Bldg A - B1_Office 96		100	-	-	198
Bldg A - B1_Office 97		100	-	-	268
Bldg A - B1_Office 98		100	-	-	199
Bldg A - B1_Office 99		100	-	-	588
Bldg A - B1_Office 100		100	-	-	197
Bldg B - B1_Office 1		100	-	-	368
Bldg B - B1_Office 2		100	-	-	632
Bldg B - B1_Office 3		100	-	-	786
Bldg B - B1_Office 4		100	-	-	627
Bldg B - B1_Office 5		100	-	-	599
Bldg B - B1_Office 6		100	-	-	1728
Bldg B - B1_Office 7		100	-	-	244
Bldg B - B1_Office 8		100	-	-	391
Bldg B - B1_Office 9		100	-	-	550
Bldg B - B1_Office 10		100	-	-	526
Bldg B - B1_Office 11		100	-	-	547
Bldg B - B1_Office 12		100	-	-	393
Bldg B - B1_Office 13		100	-	-	1657
Bldg B - B1_Office 14		100	-	-	187
Bldg B - B1_Office 15		100	-	-	632
Bldg B - B1_Office 16		100	-	-	244
Bldg B - B1_Office 17		100	-	-	786
Bldg B - B1_Office 18		100	-	-	627
Bldg B - B1_Office 19		100	-	-	1277
Bldg B - B1_Office 20		100	-	-	290
Bldg B - B1_Office 21		100	-	-	547
Bldg B - B1_Office 22		100	-	-	526
Bldg B - B1_Office 23		100	-	-	550
Bldg B - B1_Office 24		100	-	-	1155
Bldg B - B1_Office 25		100	-	-	2159
Bldg B - B1_Office 26		100	-	-	781
Bldg B - B1_Office 27		100	-	-	483
Bldg B - B1_Office 28		100	-	-	547

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg B - B1_Office 29		100	-	-	540
Bldg B - B1_Office 30		100	-	-	2215
Bldg B - B1_Office 31		100	-	-	187
Bldg B - B1_Office 32		100	-	-	632
Bldg B - B1_Office 33		100	-	-	244
Bldg B - B1_Office 34		100	-	-	786
Bldg B - B1_Office 35		100	-	-	627
Bldg B - B1_Office 36		100	-	-	1277
Bldg B - B1_Office 37		100	-	-	290
Bldg B - B1_Office 38		100	-	-	547
Bldg B - B1_Office 39		100	-	-	526
Bldg B - B1_Office 40		100	-	-	550
Bldg B - B1_Office 41		100	-	-	1155
Bldg B - B1_Office 42		100	-	-	2159
Bldg B - B1_Office 43		100	-	-	781
Bldg B - B1_Office 44		100	-	-	540
Bldg B - B1_Office 45		100	-	-	547
Bldg B - B1_Office 46		100	-	-	483
Bldg B - B1_Office 47		100	-	-	2215
Bldg B - B1_Office 48		100	-	-	187
Bldg B - B1_Office 49		100	-	-	632
Bldg B - B1_Office 50		100	-	-	244
Bldg B - B1_Office 51		100	-	-	786
Bldg B - B1_Office 52		100	-	-	627
Bldg B - B1_Office 53		100	-	-	1277
Bldg B - B1_Office 54		100	-	-	290
Bldg B - B1_Office 55		100	-	-	547
Bldg B - B1_Office 56		100	-	-	526
Bldg B - B1_Office 57		100	-	-	550
Bldg B - B1_Office 58		100	-	-	1155
Bldg B - B1_Office 59		100	-	-	1289
Bldg B - B1_Office 60		100	-	-	781
Bldg B - B1_Office 61		100	-	-	327
Bldg B - B1_Office 62		100	-	-	483
Bldg B - B1_Office 63		100	-	-	542
Bldg B - B1_Office 64		100	-	-	547
Bldg B - B1_Office 65		100	-	-	540
Bldg B - B1_Office 66		100	-	-	2215
Bldg B - B1_Office 67		100	-	-	289
Bldg B - B1_Office 68		100	-	-	550
Bldg B - B1_Office 69		100	-	-	1155
Bldg B - B1_Office 70		100	-	-	998
Bldg B - B1_Office 71		100	-	-	777

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg B - B1_Office 72		100	-	-	187
Bldg B - B1_Office 73		100	-	-	632
Bldg B - B1_Office 74		100	-	-	244
Bldg B - B1_Office 75		100	-	-	786
Bldg B - B1_Office 76		100	-	-	627
Bldg B - B1_Office 77		100	-	-	1277
Bldg B - B1_Office 78		100	-	-	2140
Bldg B - B1_Office 79		100	-	-	540
Bldg B - B1_Office 80		100	-	-	621
Bldg B - B1_Office 81		100	-	-	290
Bldg B - B1_Office 82		100	-	-	547
Bldg B - B1_Office 83		100	-	-	289
Bldg B - B1_Office 84		100	-	-	254
Bldg B - B1_Office 85		100	-	-	289
Bldg B - B1_Office 86		100	-	-	550
Bldg B - B1_Office 87		100	-	-	1155
Bldg B - B1_Office 88		100	-	-	998
Bldg B - B1_Office 89		100	-	-	777
Bldg B - B1_Office 90		100	-	-	187
Bldg B - B1_Office 91		100	-	-	632
Bldg B - B1_Office 92		100	-	-	244
Bldg B - B1_Office 93		100	-	-	786
Bldg B - B1_Office 94		100	-	-	627
Bldg B - B1_Office 95		100	-	-	1277
Bldg B - B1_Office 96		100	-	-	2140
Bldg B - B1_Office 97		100	-	-	540
Bldg B - B1_Office 98		100	-	-	621
Bldg B - B1_Office 99		100	-	-	290
Bldg B - B1_Office 100		100	-	-	547
Bldg C - B1_Office 1		100	-	-	192
Bldg C - B1_Office 2		100	-	-	603
Bldg C - B1_Office 3		100	-	-	206
Bldg C - B1_Office 4		100	-	-	837
Bldg C - B1_Office 5		100	-	-	603
Bldg C - B1_Office 6		100	-	-	158
Bldg C - B1_Office 7		100	-	-	2315
Bldg C - B1_Office 9		100	-	-	570
Bldg C - B1_Office 10		100	-	-	1488
Bldg C - B1_Office 11		100	-	-	542
Bldg C - B1_Office 12		100	-	-	569
Bldg C - B1_Office 13		100	-	-	379
Bldg C - B1_Office 14		100	-	-	192
Bldg C - B1_Office 15		100	-	-	603

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Office 16		100	-	-	206
Bldg C - B1_Office 17		100	-	-	837
Bldg C - B1_Office 18		100	-	-	603
Bldg C - B1_Office 19		100	-	-	158
Bldg C - B1_Office 20		100	-	-	1678
Bldg C - B1_Office 21		100	-	-	1517
Bldg C - B1_Office 22		100	-	-	651
Bldg C - B1_Office 23		100	-	-	549
Bldg C - B1_Office 24		100	-	-	770
Bldg C - B1_Office 25		100	-	-	2070
Bldg C - B1_Office 26		100	-	-	1113
Bldg C - B1_Office 27		100	-	-	569
Bldg C - B1_Office 28		100	-	-	542
Bldg C - B1_Office 29		100	-	-	462
Bldg C - B1_Office 30		100	-	-	570
Bldg C - B1_Office 31		100	-	-	372
Bldg C - B1_Office 32		100	-	-	192
Bldg C - B1_Office 33		100	-	-	603
Bldg C - B1_Office 34		100	-	-	206
Bldg C - B1_Office 35		100	-	-	837
Bldg C - B1_Office 36		100	-	-	603
Bldg C - B1_Office 37		100	-	-	158
Bldg C - B1_Office 38		100	-	-	1678
Bldg C - B1_Office 39		100	-	-	1517
Bldg C - B1_Office 40		100	-	-	549
Bldg C - B1_Office 41		100	-	-	652
Bldg C - B1_Office 42		100	-	-	770
Bldg C - B1_Office 43		100	-	-	2070
Bldg C - B1_Office 44		100	-	-	1113
Bldg C - B1_Office 45		100	-	-	569
Bldg C - B1_Office 46		100	-	-	542
Bldg C - B1_Office 47		100	-	-	461
Bldg C - B1_Office 48		100	-	-	570
Bldg C - B1_Office 49		100	-	-	372
Bldg C - B1_Office 50		100	-	-	192
Bldg C - B1_Office 51		100	-	-	603
Bldg C - B1_Office 52		100	-	-	206
Bldg C - B1_Office 53		100	-	-	837
Bldg C - B1_Office 54		100	-	-	603
Bldg C - B1_Office 55		100	-	-	158
Bldg C - B1_Office 56		100	-	-	1678
Bldg C - B1_Office 57		100	-	-	1517
Bldg C - B1_Office 58		100	-	-	549

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Office 59		100	-	-	653
Bldg C - B1_Office 60		100	-	-	770
Bldg C - B1_Office 61		100	-	-	1312
Bldg C - B1_Office 62		100	-	-	1113
Bldg C - B1_Office 63		100	-	-	569
Bldg C - B1_Office 64		100	-	-	542
Bldg C - B1_Office 65		100	-	-	312
Bldg C - B1_Office 66		100	-	-	462
Bldg C - B1_Office 67		100	-	-	570
Bldg C - B1_Office 68		100	-	-	446
Bldg C - B1_Office 69		100	-	-	372
Bldg C - B1_Office 70		100	-	-	192
Bldg C - B1_Office 71		100	-	-	603
Bldg C - B1_Office 72		100	-	-	206
Bldg C - B1_Office 73		100	-	-	837
Bldg C - B1_Office 74		100	-	-	603
Bldg C - B1_Office 75		100	-	-	158
Bldg C - B1_Office 76		100	-	-	1678
Bldg C - B1_Office 77		100	-	-	1526
Bldg C - B1_Office 78		100	-	-	540
Bldg C - B1_Office 79		100	-	-	666
Bldg C - B1_Office 80		100	-	-	766
Bldg C - B1_Office 81		100	-	-	1031
Bldg C - B1_Office 82		100	-	-	1113
Bldg C - B1_Office 83		100	-	-	569
Bldg C - B1_Office 84		100	-	-	280
Bldg C - B1_Office 85		100	-	-	570
Bldg C - B1_Office 86		100	-	-	289
Bldg C - B1_Office 87		100	-	-	157
Bldg C - B1_Office 88		100	-	-	372
Bldg C - B1_Office 89		100	-	-	192
Bldg C - B1_Office 90		100	-	-	603
Bldg C - B1_Office 91		100	-	-	206
Bldg C - B1_Office 92		100	-	-	837
Bldg C - B1_Office 93		100	-	-	603
Bldg C - B1_Office 94		100	-	-	158
Bldg C - B1_Office 95		100	-	-	1678
Bldg C - B1_Office 96		100	-	-	1526
Bldg C - B1_Office 97		100	-	-	666
Bldg C - B1_Office 98		100	-	-	540
Bldg C - B1_Office 99		100	-	-	766
Bldg C - B1_Office 100		100	-	-	1031
Bldg D - B1_Office 1		100	-	-	321

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Office 2		100	-	-	345
Bldg D - B1_Office 3		100	-	-	989
Bldg D - B1_Office 4		100	-	-	267
Bldg D - B1_Office 5		100	-	-	997
Bldg D - B1_Office 6		100	-	-	375
Bldg D - B1_Office 7		100	-	-	302
Bldg D - B1_Office 8		100	-	-	2070
Bldg D - B1_Office 9		100	-	-	321
Bldg D - B1_Office 10		100	-	-	345
Bldg D - B1_Office 11		100	-	-	1063
Bldg D - B1_Office 12		100	-	-	1070
Bldg D - B1_Office 13		100	-	-	375
Bldg D - B1_Office 14		100	-	-	302
Bldg D - B1_Office 15		100	-	-	2638
Bldg D - B1_Office 16		100	-	-	942
Bldg D - B1_Office 17		100	-	-	321
Bldg D - B1_Office 18		100	-	-	345
Bldg D - B1_Office 19		100	-	-	1063
Bldg D - B1_Office 20		100	-	-	1070
Bldg D - B1_Office 21		100	-	-	375
Bldg D - B1_Office 22		100	-	-	302
Bldg D - B1_Office 23		100	-	-	2638
Bldg D - B1_Office 24		100	-	-	942
Bldg D - B1_Office 25		100	-	-	321
Bldg D - B1_Office 26		100	-	-	345
Bldg D - B1_Office 27		100	-	-	1063
Bldg D - B1_Office 28		100	-	-	1070
Bldg D - B1_Office 29		100	-	-	375
Bldg D - B1_Office 30		100	-	-	302
Bldg D - B1_Office 31		100	-	-	2638
Bldg D - B1_Office 32		100	-	-	942
Bldg D - B1_Office 33		100	-	-	321
Bldg D - B1_Office 34		100	-	-	345
Bldg D - B1_Office 35		100	-	-	1063
Bldg D - B1_Office 36		100	-	-	1070
Bldg D - B1_Office 37		100	-	-	375
Bldg D - B1_Office 38		100	-	-	302
Bldg D - B1_Office 39		100	-	-	2638
Bldg D - B1_Office 40		100	-	-	942
Bldg D - B1_Office 41		100	-	-	321
Bldg D - B1_Office 42		100	-	-	345
Bldg D - B1_Office 43		100	-	-	1063
Bldg D - B1_Office 44		100	-	-	1070

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Office 45		100	-	-	375
Bldg D - B1_Office 46		100	-	-	302
Bldg D - B1_Office 47		100	-	-	2638
Bldg D - B1_Office 48		100	-	-	942
Bldg D - B1_Office 49		100	-	-	321
Bldg D - B1_Office 50		100	-	-	345
Bldg D - B1_Office 51		100	-	-	1063
Bldg D - B1_Office 52		100	-	-	1070
Bldg D - B1_Office 53		100	-	-	375
Bldg D - B1_Office 54		100	-	-	302
Bldg D - B1_Office 55		100	-	-	2638
Bldg D - B1_Office 56		100	-	-	942
Bldg D - B1_Office 57		100	-	-	302
Bldg D - B1_Office 58		100	-	-	375
Bldg D - B1_Office 59		100	-	-	1070
Bldg D - B1_Office 60		100	-	-	1063
Bldg D - B1_Office 61		100	-	-	345
Bldg D - B1_Office 62		100	-	-	321
Bldg D - B1_Office 63		100	-	-	2638
Bldg D - B1_Office 64		100	-	-	942
Bldg D - B1_Office 65		100	-	-	321
Bldg D - B1_Office 66		100	-	-	345
Bldg D - B1_Office 67		100	-	-	1063
Bldg D - B1_Office 68		100	-	-	1070
Bldg D - B1_Office 69		100	-	-	375
Bldg D - B1_Office 70		100	-	-	302
Bldg D - B1_Office 71		100	-	-	2638
Bldg D - B1_Office 72		100	-	-	942
Bldg D - B1_Office 73		100	-	-	321
Bldg D - B1_Office 74		100	-	-	345
Bldg D - B1_Office 75		100	-	-	1063
Bldg D - B1_Office 76		100	-	-	1070
Bldg D - B1_Office 77		100	-	-	375
Bldg D - B1_Office 78		100	-	-	302
Bldg D - B1_Office 79		100	-	-	2638
Bldg D - B1_Office 80		100	-	-	942
Bldg D - B1_Office 81		100	-	-	321
Bldg D - B1_Office 82		100	-	-	345
Bldg D - B1_Office 83		100	-	-	1063
Bldg D - B1_Office 84		100	-	-	1070
Bldg D - B1_Office 85		100	-	-	375
Bldg D - B1_Office 86		100	-	-	302
Bldg D - B1_Office 87		100	-	-	2638

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Office 88		100	-	-	942
Bldg D - B1_Office 89		100	-	-	321
Bldg D - B1_Office 90		100	-	-	345
Bldg D - B1_Office 91		100	-	-	1063
Bldg D - B1_Office 92		100	-	-	1070
Bldg D - B1_Office 93		100	-	-	375
Bldg D - B1_Office 94		100	-	-	302
Bldg D - B1_Office 95		100	-	-	2638
Bldg D - B1_Office 96		100	-	-	940
Bldg D - B1_Office 97		100	-	-	321
Bldg D - B1_Office 98		100	-	-	345
Bldg D - B1_Office 99		100	-	-	886
Bldg D - B1_Office 100		100	-	-	656
Bldg A - B1_Office 101		100	-	-	265
Bldg A - B1_Office 102		100	-	-	197
Bldg A - B1_Office 103		100	-	-	191
Bldg A - B1_Office 104		100	-	-	214
Bldg A - B1_Office 105		100	-	-	257
Bldg A - B1_Office 106		100	-	-	171
Bldg A - B1_Office 107		100	-	-	197
Bldg A - B1_Office 108		100	-	-	253
Bldg A - B1_Office 109		100	-	-	188
Bldg A - B1_Office 110		100	-	-	540
Bldg A - B1_Office 111		100	-	-	196
Bldg A - B1_Office 112		100	-	-	264
Bldg A - B1_Office 113		100	-	-	205
Bldg A - B1_Office 114		100	-	-	155
Bldg A - B1_Office 115		100	-	-	220
Bldg A - B1_Office 116		100	-	-	199
Bldg A - B1_Office 117		100	-	-	159
Bldg A - B1_Office 118		100	-	-	198
Bldg A - B1_Office 119		100	-	-	268
Bldg A - B1_Office 120		100	-	-	199
Bldg A - B1_Office 121		100	-	-	588
Bldg A - B1_Office 122		100	-	-	197
Bldg A - B1_Office 123		100	-	-	265
Bldg A - B1_Office 124		100	-	-	197
Bldg A - B1_Office 125		100	-	-	191
Bldg A - B1_Office 126		100	-	-	214
Bldg A - B1_Office 127		100	-	-	257
Bldg A - B1_Office 128		100	-	-	171
Bldg A - B1_Office 129		100	-	-	197
Bldg A - B1_Office 130		100	-	-	253

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg A - B1_Office 131		100	-	-	188
Bldg A - B1_Office 132		100	-	-	540
Bldg A - B1_Office 133		100	-	-	196
Bldg A - B1_Office 134		100	-	-	264
Bldg A - B1_Office 135		100	-	-	205
Bldg A - B1_Office 136		100	-	-	155
Bldg A - B1_Office 137		100	-	-	220
Bldg A - B1_Office 138		100	-	-	199
Bldg A - B1_Office 139		100	-	-	171
Bldg A - B1_Office 140		100	-	-	197
Bldg A - B1_Office 141		100	-	-	253
Bldg A - B1_Office 142		100	-	-	188
Bldg A - B1_Office 143		100	-	-	540
Bldg A - B1_Office 144		100	-	-	196
Bldg A - B1_Office 145		100	-	-	264
Bldg A - B1_Office 146		100	-	-	205
Bldg A - B1_Office 147		100	-	-	155
Bldg A - B1_Office 148		100	-	-	220
Bldg A - B1_Office 149		100	-	-	199
Bldg A - B1_Office 150		100	-	-	171
Bldg A - B1_Office 151		100	-	-	197
Bldg A - B1_Office 152		100	-	-	253
Bldg A - B1_Office 153		100	-	-	188
Bldg A - B1_Office 154		100	-	-	540
Bldg A - B1_Office 155		100	-	-	196
Bldg A - B1_Office 156		100	-	-	264
Bldg A - B1_Office 157		100	-	-	205
Bldg A - B1_Office 158		100	-	-	155
Bldg A - B1_Office 159		100	-	-	220
Bldg A - B1_Office 160		100	-	-	199
Bldg B - B1_Office 101		100	-	-	289
Bldg B - B1_Office 102		100	-	-	254
Bldg B - B1_Office 103		100	-	-	289
Bldg B - B1_Office 104		100	-	-	550
Bldg B - B1_Office 105		100	-	-	1155
Bldg B - B1_Office 106		100	-	-	998
Bldg B - B1_Office 107		100	-	-	777
Bldg B - B1_Office 108		100	-	-	187
Bldg B - B1_Office 109		100	-	-	632
Bldg B - B1_Office 110		100	-	-	244
Bldg B - B1_Office 111		100	-	-	786
Bldg B - B1_Office 112		100	-	-	627
Bldg B - B1_Office 113		100	-	-	1277

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg B - B1_Office 114		100	-	-	2140
Bldg B - B1_Office 115		100	-	-	540
Bldg B - B1_Office 116		100	-	-	621
Bldg B - B1_Office 117		100	-	-	290
Bldg B - B1_Office 118		100	-	-	547
Bldg B - B1_Office 119		100	-	-	289
Bldg B - B1_Office 120		100	-	-	507
Bldg B - B1_Office 121		100	-	-	674
Bldg B - B1_Office 122		100	-	-	678
Bldg B - B1_Office 123		100	-	-	777
Bldg B - B1_Office 124		100	-	-	187
Bldg B - B1_Office 125		100	-	-	632
Bldg B - B1_Office 126		100	-	-	244
Bldg B - B1_Office 127		100	-	-	786
Bldg B - B1_Office 128		100	-	-	627
Bldg B - B1_Office 129		100	-	-	1277
Bldg B - B1_Office 130		100	-	-	2140
Bldg B - B1_Office 131		100	-	-	540
Bldg B - B1_Office 132		100	-	-	621
Bldg B - B1_Office 133		100	-	-	255
Bldg B - B1_Office 134		100	-	-	674
Bldg B - B1_Office 135		100	-	-	678
Bldg B - B1_Office 136		100	-	-	777
Bldg B - B1_Office 137		100	-	-	187
Bldg B - B1_Office 138		100	-	-	632
Bldg B - B1_Office 139		100	-	-	244
Bldg B - B1_Office 140		100	-	-	144
Bldg B - B1_Office 141		100	-	-	642
Bldg B - B1_Office 142		100	-	-	627
Bldg B - B1_Office 143		100	-	-	1277
Bldg B - B1_Office 144		100	-	-	2140
Bldg B - B1_Office 145		100	-	-	540
Bldg B - B1_Office 146		100	-	-	621
Bldg B - B1_Office 147		100	-	-	255
Bldg B - B1_Office 148		100	-	-	674
Bldg B - B1_Office 149		100	-	-	678
Bldg B - B1_Office 150		100	-	-	778
Bldg B - B1_Office 151		100	-	-	187
Bldg B - B1_Office 152		100	-	-	632
Bldg B - B1_Office 153		100	-	-	150
Bldg B - B1_Office 154		100	-	-	244
Bldg B - B1_Office 155		100	-	-	255
Bldg B - B1_Office 156		100	-	-	674

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg B - B1_Office 157		100	-	-	678
Bldg B - B1_Office 158		100	-	-	778
Bldg B - B1_Office 159		100	-	-	187
Bldg B - B1_Office 160		100	-	-	632
Bldg B - B1_Office 161		100	-	-	150
Bldg B - B1_Office 162		100	-	-	244
Bldg B - B1_Office 163		100	-	-	255
Bldg B - B1_Office 164		100	-	-	674
Bldg B - B1_Office 165		100	-	-	678
Bldg B - B1_Office 166		100	-	-	778
Bldg B - B1_Office 167		100	-	-	187
Bldg B - B1_Office 168		100	-	-	632
Bldg B - B1_Office 169		100	-	-	150
Bldg B - B1_Office 170		100	-	-	244
Bldg B - B1_Office 171		100	-	-	255
Bldg B - B1_Office 172		100	-	-	674
Bldg B - B1_Office 173		100	-	-	678
Bldg B - B1_Office 174		100	-	-	778
Bldg B - B1_Office 175		100	-	-	187
Bldg B - B1_Office 176		100	-	-	632
Bldg B - B1_Office 177		100	-	-	150
Bldg B - B1_Office 178		100	-	-	244
Bldg C - B1_Office 101		100	-	-	1113
Bldg C - B1_Office 102		100	-	-	569
Bldg C - B1_Office 103		100	-	-	280
Bldg C - B1_Office 104		100	-	-	289
Bldg C - B1_Office 105		100	-	-	570
Bldg C - B1_Office 106		100	-	-	372
Bldg C - B1_Office 107		100	-	-	157
Bldg C - B1_Office 108		100	-	-	603
Bldg C - B1_Office 109		100	-	-	192
Bldg C - B1_Office 110		100	-	-	206
Bldg C - B1_Office 111		100	-	-	837
Bldg C - B1_Office 112		100	-	-	603
Bldg C - B1_Office 113		100	-	-	158
Bldg C - B1_Office 114		100	-	-	1678
Bldg C - B1_Office 115		100	-	-	1526
Bldg C - B1_Office 116		100	-	-	540
Bldg C - B1_Office 117		100	-	-	666
Bldg C - B1_Office 118		100	-	-	766
Bldg C - B1_Office 119		100	-	-	1031
Bldg C - B1_Office 120		100	-	-	1113
Bldg C - B1_Office 121		100	-	-	569

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Office 122		100	-	-	280
Bldg C - B1_Office 123		100	-	-	289
Bldg C - B1_Office 124		100	-	-	570
Bldg C - B1_Office 125		100	-	-	372
Bldg C - B1_Office 126		100	-	-	157
Bldg C - B1_Office 127		100	-	-	192
Bldg C - B1_Office 128		100	-	-	603
Bldg C - B1_Office 129		100	-	-	206
Bldg C - B1_Office 130		100	-	-	837
Bldg C - B1_Office 131		100	-	-	603
Bldg C - B1_Office 132		100	-	-	158
Bldg C - B1_Office 133		100	-	-	1678
Bldg C - B1_Office 134		100	-	-	1526
Bldg C - B1_Office 135		100	-	-	666
Bldg C - B1_Office 136		100	-	-	540
Bldg C - B1_Office 137		100	-	-	766
Bldg C - B1_Office 138		100	-	-	682
Bldg C - B1_Office 139		100	-	-	609
Bldg C - B1_Office 140		100	-	-	317
Bldg C - B1_Office 141		100	-	-	192
Bldg C - B1_Office 142		100	-	-	603
Bldg C - B1_Office 143		100	-	-	206
Bldg C - B1_Office 144		100	-	-	837
Bldg C - B1_Office 145		100	-	-	603
Bldg C - B1_Office 146		100	-	-	158
Bldg C - B1_Office 147		100	-	-	1678
Bldg C - B1_Office 148		100	-	-	1526
Bldg C - B1_Office 149		100	-	-	666
Bldg C - B1_Office 150		100	-	-	540
Bldg C - B1_Office 151		100	-	-	766
Bldg C - B1_Office 152		100	-	-	682
Bldg C - B1_Office 153		100	-	-	609
Bldg C - B1_Office 154		100	-	-	317
Bldg C - B1_Office 155		100	-	-	192
Bldg C - B1_Office 156		100	-	-	603
Bldg C - B1_Office 157		100	-	-	206
Bldg C - B1_Office 158		100	-	-	178
Bldg C - B1_Office 159		100	-	-	659
Bldg C - B1_Office 160		100	-	-	603
Bldg C - B1_Office 161		100	-	-	158
Bldg C - B1_Office 162		100	-	-	1678
Bldg C - B1_Office 163		100	-	-	1526
Bldg C - B1_Office 164		100	-	-	666

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Office 165		100	-	-	540
Bldg C - B1_Office 166		100	-	-	766
Bldg C - B1_Office 167		100	-	-	682
Bldg C - B1_Office 168		100	-	-	609
Bldg C - B1_Office 169		100	-	-	317
Bldg C - B1_Office 170		100	-	-	192
Bldg C - B1_Office 171		100	-	-	603
Bldg C - B1_Office 172		100	-	-	206
Bldg C - B1_Office 173		100	-	-	178
Bldg C - B1_Office 174		100	-	-	767
Bldg C - B1_Office 175		100	-	-	682
Bldg C - B1_Office 176		100	-	-	609
Bldg C - B1_Office 177		100	-	-	317
Bldg C - B1_Office 178		100	-	-	192
Bldg C - B1_Office 179		100	-	-	603
Bldg C - B1_Office 180		100	-	-	178
Bldg C - B1_Office 181		100	-	-	206
Bldg C - B1_Office 182		100	-	-	767
Bldg C - B1_Office 183		100	-	-	682
Bldg C - B1_Office 184		100	-	-	609
Bldg C - B1_Office 185		100	-	-	317
Bldg C - B1_Office 186		100	-	-	192
Bldg C - B1_Office 187		100	-	-	603
Bldg C - B1_Office 188		100	-	-	178
Bldg C - B1_Office 189		100	-	-	206
Bldg C - B1_Office 190		100	-	-	609
Bldg C - B1_Office 191		100	-	-	682
Bldg C - B1_Office 192		100	-	-	767
Bldg C - B1_Office 193		100	-	-	317
Bldg C - B1_Office 194		100	-	-	192
Bldg C - B1_Office 195		100	-	-	603
Bldg C - B1_Office 196		100	-	-	178
Bldg C - B1_Office 197		100	-	-	206
Bldg C - B1_Office 198		100	-	-	767
Bldg C - B1_Office 199		100	-	-	682
Bldg C - B1_Office 200		100	-	-	609
Bldg C - B1_Office 201		100	-	-	317
Bldg D - B1_Office 101		100	-	-	545
Bldg D - B1_Office 102		100	-	-	1051
Bldg D - B1_Office 103		100	-	-	321
Bldg D - B1_Office 104		100	-	-	345
Bldg D - B1_Office 105		100	-	-	886
Bldg D - B1_Office 106		100	-	-	656

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Office 107		100	-	-	545
Bldg D - B1_Office 108		100	-	-	1051
Bldg D - B1_Office 109		100	-	-	321
Bldg D - B1_Office 110		100	-	-	345
Bldg D - B1_Office 111		100	-	-	886
Bldg D - B1_Office 112		100	-	-	656
Bldg D - B1_Office 113		100	-	-	545
Bldg D - B1_Office 114		100	-	-	1051
Bldg D - B1_Office 115		100	-	-	321
Bldg D - B1_Office 116		100	-	-	345
Bldg D - B1_Office 117		100	-	-	886
Bldg D - B1_Office 118		100	-	-	656
Bldg D - B1_Office 119		100	-	-	545
Bldg D - B1_Office 120		100	-	-	1051
Bldg D - B1_Office 121		100	-	-	321
Bldg D - B1_Office 122		100	-	-	345
Bldg D - B1_Office 123		100	-	-	886
Bldg D - B1_Office 124		100	-	-	656
Bldg D - B1_Office 125		100	-	-	545
Bldg D - B1_Office 126		100	-	-	1051
Bldg D - B1_Office 127		100	-	-	321
Bldg D - B1_Office 128		100	-	-	345
Bldg D - B1_Office 129		100	-	-	886
Bldg D - B1_Office 130		100	-	-	656
Bldg D - B1_Office 131		100	-	-	545
Bldg D - B1_Office 132		100	-	-	1051
Bldg D - B1_Office 133		100	-	-	321
Bldg D - B1_Office 134		100	-	-	345
Bldg D - B1_Office 135		100	-	-	886
Bldg D - B1_Office 136		100	-	-	656
Bldg D - B1_Office 137		100	-	-	545
Bldg D - B1_Office 138		100	-	-	1051
Bldg D - B1_Office 139		100	-	-	321
Bldg D - B1_Office 140		100	-	-	345
Bldg D - B1_Office 141		100	-	-	886
Bldg D - B1_Office 142		100	-	-	656
Bldg D - B1_Office 143		100	-	-	545
Bldg D - B1_Office 144		100	-	-	1051
Bldg D - B1_Office 145		100	-	-	321
Bldg D - B1_Office 146		100	-	-	345
Bldg D - B1_Office 147		100	-	-	886
Bldg D - B1_Office 148		100	-	-	656
Bldg D - B1_Office 149		100	-	-	545

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Office 150		100	-	-	1051
Bldg D - B1_Office 151		100	-	-	321
Bldg D - B1_Office 152		100	-	-	345
Bldg D - B1_Office 153		100	-	-	886
Bldg D - B1_Office 154		100	-	-	656
Bldg D - B1_Office 155		100	-	-	545
Bldg D - B1_Office 156		100	-	-	1051
Bldg D - B1_Office 157		100	-	-	321
Bldg D - B1_Office 158		100	-	-	345
Bldg D - B1_Office 159		100	-	-	886
Bldg D - B1_Office 160		100	-	-	656
Bldg D - B1_Office 161		100	-	-	545
Bldg D - B1_Office 162		100	-	-	1051
Bldg A - B1_Circulation 1 (Stairs)		-	100	-	336
Bldg A - B1_Circulation 2 (Stairs)		-	100	-	266
Bldg A - B1_Circulation 3		-	100	-	35
Bldg A - B1_Circulation 4		-	100	-	36
Bldg A - B1_Circulation 5		-	100	-	46
Bldg A - B1_Circulation 6		-	100	-	35
Bldg A - B1_Circulation 7		-	100	-	36
Bldg A - B1_Circulation 8		-	100	-	44
Bldg A - B1_Circulation 9		-	100	-	46
Bldg A - B1_Circulation 10		-	100	-	35
Bldg A - B1_Circulation 11		-	100	-	36
Bldg A - B1_Circulation 12		-	100	-	44
Bldg A - B1_Circulation 13		-	100	-	46
Bldg A - B1_Circulation 14		-	100	-	35
Bldg A - B1_Circulation 15		-	100	-	36
Bldg A - B1_Circulation 16		-	100	-	44
Bldg A - B1_Circulation 17		-	100	-	46
Bldg A - B1_Circulation 18		-	100	-	35
Bldg A - B1_Circulation 19		-	100	-	36
Bldg A - B1_Circulation 20		-	100	-	44
Bldg A - B1_Circulation 21		-	100	-	46
Bldg A - B1_Circulation 22		-	100	-	35
Bldg A - B1_Circulation 23		-	100	-	36
Bldg A - B1_Circulation 24		-	100	-	90
Bldg A - B1_Circulation 25		-	100	-	35
Bldg A - B1_Circulation 26		-	100	-	36
Bldg A - B1_Circulation 27		-	100	-	44
Bldg A - B1_Circulation 28		-	100	-	46
Bldg A - B1_Circulation 29		-	100	-	35
Bldg A - B1_Circulation 30		-	100	-	36

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg A - B1_Circulation 31		-	100	-	44
Bldg A - B1_Circulation 32		-	100	-	46
Bldg A - B1_Circulation 33		-	100	-	35
Bldg A - B1_Circulation 34		-	100	-	46
Bldg A - B1_Circulation 35		-	100	-	35
Bldg B - B1_Circulation 1 (Stairs)		-	100	-	467
Bldg B - B1_Circulation 2 (Stairs)		-	100	-	491
Bldg B - B1_Circulation 3 (Stairs)		-	100	-	356
Bldg B - B1_Circulation 4 (Stairs)		-	100	-	343
Bldg B - B1_Circulation 5		-	100	-	87
Bldg B - B1_Circulation 6		-	100	-	13
Bldg B - B1_Circulation 7		-	100	-	15
Bldg B - B1_Circulation 8		-	100	-	15
Bldg B - B1_Circulation 9		-	100	-	15
Bldg B - B1_Circulation 10		-	100	-	15
Bldg B - B1_Circulation 11		-	100	-	87
Bldg B - B1_Circulation 12		-	100	-	13
Bldg B - B1_Circulation 13		-	100	-	15
Bldg B - B1_Circulation 14		-	100	-	15
Bldg B - B1_Circulation 15		-	100	-	47
Bldg B - B1_Circulation 16		-	100	-	15
Bldg B - B1_Circulation 17		-	100	-	87
Bldg B - B1_Circulation 18		-	100	-	15
Bldg B - B1_Circulation 19		-	100	-	13
Bldg B - B1_Circulation 20		-	100	-	15
Bldg B - B1_Circulation 21		-	100	-	47
Bldg B - B1_Circulation 22		-	100	-	15
Bldg B - B1_Circulation 23		-	100	-	87
Bldg B - B1_Circulation 24		-	100	-	15
Bldg B - B1_Circulation 25		-	100	-	13
Bldg B - B1_Circulation 26		-	100	-	15
Bldg B - B1_Circulation 27		-	100	-	47
Bldg B - B1_Circulation 28		-	100	-	15
Bldg B - B1_Circulation 29		-	100	-	87
Bldg B - B1_Circulation 30		-	100	-	15
Bldg B - B1_Circulation 31		-	100	-	13
Bldg B - B1_Circulation 32		-	100	-	15
Bldg B - B1_Circulation 33		-	100	-	47
Bldg B - B1_Circulation 34		-	100	-	15
Bldg B - B1_Circulation 35		-	100	-	87
Bldg B - B1_Circulation 36		-	100	-	15
Bldg B - B1_Circulation 37		-	100	-	13
Bldg B - B1_Circulation 38		-	100	-	15

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg B - B1_Circulation 39		-	100	-	47
Bldg B - B1_Circulation 40		-	100	-	15
Bldg B - B1_Circulation 41		-	100	-	87
Bldg B - B1_Circulation 42		-	100	-	15
Bldg B - B1_Circulation 43		-	100	-	13
Bldg B - B1_Circulation 44		-	100	-	15
Bldg B - B1_Circulation 45		-	100	-	46
Bldg B - B1_Circulation 46		-	100	-	15
Bldg B - B1_Circulation 47		-	100	-	87
Bldg B - B1_Circulation 48		-	100	-	15
Bldg B - B1_Circulation 49		-	100	-	13
Bldg B - B1_Circulation 50		-	100	-	15
Bldg B - B1_Circulation 51		-	100	-	46
Bldg B - B1_Circulation 52		-	100	-	15
Bldg B - B1_Circulation 53		-	100	-	88
Bldg B - B1_Circulation 54		-	100	-	15
Bldg B - B1_Circulation 55		-	100	-	13
Bldg B - B1_Circulation 56		-	100	-	15
Bldg B - B1_Circulation 57		-	100	-	88
Bldg B - B1_Circulation 58		-	100	-	15
Bldg B - B1_Circulation 59		-	100	-	13
Bldg B - B1_Circulation 60		-	100	-	15
Bldg B - B1_Circulation 61		-	100	-	88
Bldg B - B1_Circulation 62		-	100	-	15
Bldg B - B1_Circulation 63		-	100	-	13
Bldg B - B1_Circulation 64		-	100	-	15
Bldg B - B1_Circulation 65		-	100	-	88
Bldg B - B1_Circulation 66		-	100	-	15
Bldg B - B1_Circulation 67		-	100	-	13
Bldg B - B1_Circulation 68		-	100	-	102
Bldg C - B1_Circulation 1 (Stairs)		-	100	-	522
Bldg C - B1_Circulation 2 (Stairs)		-	100	-	509
Bldg C - B1_Circulation 3 (Stairs)		-	100	-	392
Bldg C - B1_Circulation 4 (Stairs)		-	100	-	387
Bldg C - B1_Circulation 5		-	100	-	89
Bldg C - B1_Circulation 6		-	100	-	14
Bldg C - B1_Circulation 7		-	100	-	13
Bldg C - B1_Circulation 8		-	100	-	15
Bldg C - B1_Circulation 9		-	100	-	14
Bldg C - B1_Circulation 10		-	100	-	15
Bldg C - B1_Circulation 11		-	100	-	89
Bldg C - B1_Circulation 12		-	100	-	14
Bldg C - B1_Circulation 13		-	100	-	13

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Circulation 14		-	100	-	15
Bldg C - B1_Circulation 15		-	100	-	13
Bldg C - B1_Circulation 16		-	100	-	37
Bldg C - B1_Circulation 17		-	100	-	15
Bldg C - B1_Circulation 18		-	100	-	89
Bldg C - B1_Circulation 19		-	100	-	14
Bldg C - B1_Circulation 20		-	100	-	13
Bldg C - B1_Circulation 21		-	100	-	15
Bldg C - B1_Circulation 22		-	100	-	13
Bldg C - B1_Circulation 23		-	100	-	37
Bldg C - B1_Circulation 24		-	100	-	15
Bldg C - B1_Circulation 25		-	100	-	89
Bldg C - B1_Circulation 26		-	100	-	14
Bldg C - B1_Circulation 27		-	100	-	13
Bldg C - B1_Circulation 28		-	100	-	15
Bldg C - B1_Circulation 29		-	100	-	13
Bldg C - B1_Circulation 30		-	100	-	37
Bldg C - B1_Circulation 31		-	100	-	15
Bldg C - B1_Circulation 32		-	100	-	89
Bldg C - B1_Circulation 33		-	100	-	14
Bldg C - B1_Circulation 34		-	100	-	13
Bldg C - B1_Circulation 35		-	100	-	15
Bldg C - B1_Circulation 36		-	100	-	13
Bldg C - B1_Circulation 37		-	100	-	37
Bldg C - B1_Circulation 38		-	100	-	15
Bldg C - B1_Circulation 39		-	100	-	89
Bldg C - B1_Circulation 40		-	100	-	14
Bldg C - B1_Circulation 41		-	100	-	13
Bldg C - B1_Circulation 42		-	100	-	15
Bldg C - B1_Circulation 43		-	100	-	13
Bldg C - B1_Circulation 44		-	100	-	37
Bldg C - B1_Circulation 45		-	100	-	15
Bldg C - B1_Circulation 46		-	100	-	89
Bldg C - B1_Circulation 47		-	100	-	14
Bldg C - B1_Circulation 48		-	100	-	13
Bldg C - B1_Circulation 49		-	100	-	15
Bldg C - B1_Circulation 50		-	100	-	13
Bldg C - B1_Circulation 51		-	100	-	37
Bldg C - B1_Circulation 52		-	100	-	15
Bldg C - B1_Circulation 53		-	100	-	89
Bldg C - B1_Circulation 54		-	100	-	14
Bldg C - B1_Circulation 55		-	100	-	13
Bldg C - B1_Circulation 56		-	100	-	15

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Circulation 57		-	100	-	12
Bldg C - B1_Circulation 58		-	100	-	37
Bldg C - B1_Circulation 59		-	100	-	15
Bldg C - B1_Circulation 60		-	100	-	89
Bldg C - B1_Circulation 61		-	100	-	14
Bldg C - B1_Circulation 62		-	100	-	13
Bldg C - B1_Circulation 63		-	100	-	15
Bldg C - B1_Circulation 64		-	100	-	12
Bldg C - B1_Circulation 65		-	100	-	37
Bldg C - B1_Circulation 66		-	100	-	15
Bldg C - B1_Circulation 67		-	100	-	89
Bldg C - B1_Circulation 68		-	100	-	14
Bldg C - B1_Circulation 69		-	100	-	13
Bldg C - B1_Circulation 70		-	100	-	15
Bldg C - B1_Circulation 71		-	100	-	12
Bldg C - B1_Circulation 72		-	100	-	37
Bldg C - B1_Circulation 73		-	100	-	15
Bldg C - B1_Circulation 74		-	100	-	88
Bldg C - B1_Circulation 75		-	100	-	14
Bldg C - B1_Circulation 76		-	100	-	13
Bldg C - B1_Circulation 77		-	100	-	15
Bldg C - B1_Circulation 78		-	100	-	88
Bldg C - B1_Circulation 79		-	100	-	14
Bldg C - B1_Circulation 80		-	100	-	13
Bldg C - B1_Circulation 81		-	100	-	15
Bldg C - B1_Circulation 82		-	100	-	88
Bldg C - B1_Circulation 83		-	100	-	14
Bldg C - B1_Circulation 84		-	100	-	13
Bldg C - B1_Circulation 85		-	100	-	15
Bldg C - B1_Circulation 86		-	100	-	88
Bldg C - B1_Circulation 87		-	100	-	14
Bldg C - B1_Circulation 88		-	100	-	13
Bldg C - B1_Circulation 89		-	100	-	15
Bldg D - B1_Circulation 1 (Stairs)		-	100	-	743
Bldg D - B1_Circulation 2 (Stairs)		-	100	-	426
Bldg D - B1_Circulation 3		-	100	-	76
Bldg D - B1_Circulation 4		-	100	-	13
Bldg D - B1_Circulation 5		-	100	-	30
Bldg D - B1_Circulation 6		-	100	-	76
Bldg D - B1_Circulation 7		-	100	-	13
Bldg D - B1_Circulation 8		-	100	-	29
Bldg D - B1_Circulation 9		-	100	-	30
Bldg D - B1_Circulation 10		-	100	-	76

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Circulation 11		-	100	-	13
Bldg D - B1_Circulation 12		-	100	-	29
Bldg D - B1_Circulation 13		-	100	-	30
Bldg D - B1_Circulation 14		-	100	-	76
Bldg D - B1_Circulation 15		-	100	-	13
Bldg D - B1_Circulation 16		-	100	-	29
Bldg D - B1_Circulation 17		-	100	-	30
Bldg D - B1_Circulation 18		-	100	-	76
Bldg D - B1_Circulation 19		-	100	-	13
Bldg D - B1_Circulation 20		-	100	-	29
Bldg D - B1_Circulation 21		-	100	-	30
Bldg D - B1_Circulation 22		-	100	-	76
Bldg D - B1_Circulation 23		-	100	-	13
Bldg D - B1_Circulation 24		-	100	-	29
Bldg D - B1_Circulation 25		-	100	-	30
Bldg D - B1_Circulation 26		-	100	-	76
Bldg D - B1_Circulation 27		-	100	-	13
Bldg D - B1_Circulation 28		-	100	-	29
Bldg D - B1_Circulation 29		-	100	-	30
Bldg D - B1_Circulation 30		-	100	-	76
Bldg D - B1_Circulation 31		-	100	-	13
Bldg D - B1_Circulation 32		-	100	-	29
Bldg D - B1_Circulation 33		-	100	-	30
Bldg D - B1_Circulation 34		-	100	-	76
Bldg D - B1_Circulation 35		-	100	-	13
Bldg D - B1_Circulation 36		-	100	-	29
Bldg D - B1_Circulation 37		-	100	-	30
Bldg D - B1_Circulation 38		-	100	-	76
Bldg D - B1_Circulation 39		-	100	-	13
Bldg D - B1_Circulation 40		-	100	-	29
Bldg D - B1_Circulation 41		-	100	-	30
Bldg D - B1_Circulation 42		-	100	-	76
Bldg D - B1_Circulation 43		-	100	-	13
Bldg D - B1_Circulation 44		-	100	-	29
Bldg D - B1_Circulation 45		-	100	-	30
Bldg D - B1_Circulation 46		-	100	-	76
Bldg D - B1_Circulation 47		-	100	-	13
Bldg D - B1_Circulation 48		-	100	-	29
Bldg D - B1_Circulation 49		-	100	-	30
Bldg D - B1_Circulation 50		-	100	-	76
Bldg D - B1_Circulation 51		-	100	-	13
Bldg D - B1_Circulation 52		-	100	-	29
Bldg D - B1_Circulation 53		-	100	-	76

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Circulation 54		-	100	-	13
Bldg D - B1_Circulation 55		-	100	-	29
Bldg D - B1_Circulation 56		-	100	-	76
Bldg D - B1_Circulation 57		-	100	-	13
Bldg D - B1_Circulation 58		-	100	-	29
Bldg D - B1_Circulation 59		-	100	-	76
Bldg D - B1_Circulation 60		-	100	-	13
Bldg D - B1_Circulation 61		-	100	-	29
Bldg D - B1_Circulation 62		-	100	-	76
Bldg D - B1_Circulation 63		-	100	-	13
Bldg D - B1_Circulation 64		-	100	-	29
Bldg D - B1_Circulation 65		-	100	-	76
Bldg D - B1_Circulation 66		-	100	-	13
Bldg D - B1_Circulation 67		-	100	-	29
Bldg D - B1_Circulation 68		-	100	-	76
Bldg D - B1_Circulation 69		-	100	-	13
Bldg D - B1_Circulation 70		-	100	-	29
Bldg D - B1_Circulation 71		-	100	-	76
Bldg D - B1_Circulation 72		-	100	-	13
Bldg D - B1_Circulation 73		-	100	-	29
Bldg D - B1_Circulation 74		-	100	-	76
Bldg D - B1_Circulation 75		-	100	-	13
Bldg D - B1_Circulation 76		-	100	-	29
Bldg D - B1_Circulation 77		-	100	-	76
Bldg D - B1_Circulation 78		-	100	-	13
Bldg D - B1_Circulation 79		-	100	-	29
Bldg D - B1_Circulation 80		-	100	-	76
Bldg D - B1_Circulation 81		-	100	-	13
Bldg D - B1_Circulation 82		-	100	-	29
Bldg A - B1_Toilet 1		-	100	-	44
Bldg A - B1_Toilet 2		-	100	-	43
Bldg A - B1_Toilet 3		-	100	-	44
Bldg A - B1_Toilet 4		-	100	-	43
Bldg A - B1_Toilet 5		-	100	-	44
Bldg A - B1_Toilet 6		-	100	-	43
Bldg A - B1_Toilet 7		-	100	-	44
Bldg A - B1_Toilet 8		-	100	-	43
Bldg A - B1_Toilet 9		-	100	-	44
Bldg A - B1_Toilet 10		-	100	-	43
Bldg A - B1_Toilet 11		-	100	-	44
Bldg A - B1_Toilet 12		-	100	-	43
Bldg A - B1_Toilet 13		-	100	-	44
Bldg A - B1_Toilet 14		-	100	-	43

General lighting and display lighting		Luminous efficacy [lm/W]			
Zone name		Luminaire	Lamp	Display lamp	General lighting [W]
	Standard value	60	60	22	
Bldg A - B1_Toilet 15		-	100	-	44
Bldg A - B1_Toilet 16		-	100	-	44
Bldg B - B1_Toilet 1		-	100	-	57
Bldg B - B1_Toilet 2		-	100	-	54
Bldg B - B1_Toilet 3		-	100	-	90
Bldg B - B1_Toilet 4		-	100	-	61
Bldg B - B1_Toilet 5		-	100	-	57
Bldg B - B1_Toilet 6		-	100	-	54
Bldg B - B1_Toilet 7		-	100	-	90
Bldg B - B1_Toilet 8		-	100	-	61
Bldg B - B1_Toilet 9		-	100	-	57
Bldg B - B1_Toilet 10		-	100	-	54
Bldg B - B1_Toilet 11		-	100	-	90
Bldg B - B1_Toilet 12		-	100	-	61
Bldg B - B1_Toilet 13		-	100	-	57
Bldg B - B1_Toilet 14		-	100	-	54
Bldg B - B1_Toilet 15		-	100	-	90
Bldg B - B1_Toilet 16		-	100	-	61
Bldg B - B1_Toilet 17		-	100	-	57
Bldg B - B1_Toilet 18		-	100	-	54
Bldg B - B1_Toilet 19		-	100	-	90
Bldg B - B1_Toilet 20		-	100	-	61
Bldg B - B1_Toilet 21		-	100	-	57
Bldg B - B1_Toilet 22		-	100	-	54
Bldg B - B1_Toilet 23		-	100	-	90
Bldg B - B1_Toilet 24		-	100	-	61
Bldg B - B1_Toilet 25		-	100	-	57
Bldg B - B1_Toilet 26		-	100	-	54
Bldg B - B1_Toilet 27		-	100	-	90
Bldg B - B1_Toilet 28		-	100	-	61
Bldg B - B1_Toilet 29		-	100	-	57
Bldg B - B1_Toilet 30		-	100	-	54
Bldg B - B1_Toilet 31		-	100	-	90
Bldg B - B1_Toilet 32		-	100	-	61
Bldg B - B1_Toilet 33		-	100	-	57
Bldg B - B1_Toilet 34		-	100	-	54
Bldg B - B1_Toilet 35		-	100	-	90
Bldg B - B1_Toilet 36		-	100	-	57
Bldg B - B1_Toilet 37		-	100	-	54
Bldg B - B1_Toilet 38		-	100	-	90
Bldg B - B1_Toilet 39		-	100	-	57
Bldg B - B1_Toilet 40		-	100	-	54
Bldg C - B1_Toilet 1		-	100	-	61

General lighting and display lighting		Luminous efficacy [lm/W]			
Zone name		Luminaire	Lamp	Display lamp	General lighting [W]
	Standard value	60	60	22	
Bldg C - B1_Toilet 2		-	100	-	56
Bldg C - B1_Toilet 3		-	100	-	91
Bldg C - B1_Toilet 4		-	100	-	63
Bldg C - B1_Toilet 5		-	100	-	61
Bldg C - B1_Toilet 6		-	100	-	56
Bldg C - B1_Toilet 7		-	100	-	91
Bldg C - B1_Toilet 8		-	100	-	63
Bldg C - B1_Toilet 9		-	100	-	61
Bldg C - B1_Toilet 10		-	100	-	56
Bldg C - B1_Toilet 11		-	100	-	91
Bldg C - B1_Toilet 12		-	100	-	63
Bldg C - B1_Toilet 13		-	100	-	61
Bldg C - B1_Toilet 14		-	100	-	56
Bldg C - B1_Toilet 15		-	100	-	91
Bldg C - B1_Toilet 16		-	100	-	63
Bldg C - B1_Toilet 17		-	100	-	61
Bldg C - B1_Toilet 18		-	100	-	56
Bldg C - B1_Toilet 19		-	100	-	91
Bldg C - B1_Toilet 20		-	100	-	63
Bldg C - B1_Toilet 21		-	100	-	61
Bldg C - B1_Toilet 22		-	100	-	56
Bldg C - B1_Toilet 23		-	100	-	91
Bldg C - B1_Toilet 24		-	100	-	63
Bldg C - B1_Toilet 25		-	100	-	61
Bldg C - B1_Toilet 26		-	100	-	56
Bldg C - B1_Toilet 27		-	100	-	91
Bldg C - B1_Toilet 28		-	100	-	63
Bldg C - B1_Toilet 29		-	100	-	61
Bldg C - B1_Toilet 30		-	100	-	56
Bldg C - B1_Toilet 31		-	100	-	91
Bldg C - B1_Toilet 32		-	100	-	63
Bldg C - B1_Toilet 33		-	100	-	61
Bldg C - B1_Toilet 34		-	100	-	56
Bldg C - B1_Toilet 35		-	100	-	91
Bldg C - B1_Toilet 36		-	100	-	63
Bldg C - B1_Toilet 37		-	100	-	61
Bldg C - B1_Toilet 38		-	100	-	56
Bldg C - B1_Toilet 39		-	100	-	91
Bldg C - B1_Toilet 40		-	100	-	61
Bldg D - B1_Toilet 1		-	100	-	72
Bldg D - B1_Toilet 2		-	100	-	67
Bldg D - B1_Toilet 3		-	100	-	76
Bldg D - B1_Toilet 4		-	100	-	72

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Toilet 5		-	100	-	67
Bldg D - B1_Toilet 6		-	100	-	76
Bldg D - B1_Toilet 7		-	100	-	72
Bldg D - B1_Toilet 8		-	100	-	67
Bldg D - B1_Toilet 9		-	100	-	76
Bldg D - B1_Toilet 10		-	100	-	72
Bldg D - B1_Toilet 11		-	100	-	67
Bldg D - B1_Toilet 12		-	100	-	76
Bldg D - B1_Toilet 13		-	100	-	72
Bldg D - B1_Toilet 14		-	100	-	67
Bldg D - B1_Toilet 15		-	100	-	76
Bldg D - B1_Toilet 16		-	100	-	72
Bldg D - B1_Toilet 17		-	100	-	67
Bldg D - B1_Toilet 18		-	100	-	76
Bldg D - B1_Toilet 19		-	100	-	72
Bldg D - B1_Toilet 20		-	100	-	67
Bldg D - B1_Toilet 21		-	100	-	76
Bldg D - B1_Toilet 22		-	100	-	72
Bldg D - B1_Toilet 23		-	100	-	67
Bldg D - B1_Toilet 24		-	100	-	76
Bldg D - B1_Toilet 25		-	100	-	72
Bldg D - B1_Toilet 26		-	100	-	67
Bldg D - B1_Toilet 27		-	100	-	76
Bldg D - B1_Toilet 28		-	100	-	72
Bldg D - B1_Toilet 29		-	100	-	67
Bldg D - B1_Toilet 30		-	100	-	76
Bldg D - B1_Toilet 31		-	100	-	72
Bldg D - B1_Toilet 32		-	100	-	67
Bldg D - B1_Toilet 33		-	100	-	76
Bldg D - B1_Toilet 34		-	100	-	72
Bldg D - B1_Toilet 35		-	100	-	67
Bldg D - B1_Toilet 36		-	100	-	76
Bldg D - B1_Toilet 37		-	100	-	67
Bldg D - B1_Toilet 38		-	100	-	76
Bldg D - B1_Toilet 39		-	100	-	67
Bldg D - B1_Toilet 40		-	100	-	76
Bldg B - B1_Toilet 41		-	100	-	90
Bldg B - B1_Toilet 42		-	100	-	57
Bldg B - B1_Toilet 43		-	100	-	54
Bldg B - B1_Toilet 44		-	100	-	90
Bldg B - B1_Circulation 101		-	100	-	15
Bldg B - B1_Circulation 102		-	100	-	13
Bldg B - B1_Circulation 103		-	100	-	15

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg B - B1_Circulation 104		-	100	-	47
Bldg B - B1_Circulation 105		-	100	-	15
Bldg C - B1_Toilet 41		-	100	-	56
Bldg C - B1_Toilet 42		-	100	-	91
Bldg C - B1_Toilet 43		-	100	-	61
Bldg C - B1_Toilet 44		-	100	-	56
Bldg C - B1_Toilet 45		-	100	-	91
Bldg C - B1_Toilet 46		-	100	-	61
Bldg C - B1_Toilet 47		-	100	-	56
Bldg C - B1_Toilet 48		-	100	-	91
Bldg D - B1_Toilet 41		-	100	-	67
Bldg D - B1_Toilet 42		-	100	-	76
Bldg D - B1_Toilet 43		-	100	-	67
Bldg D - B1_Toilet 44		-	100	-	76
Bldg D - B1_Toilet 45		-	100	-	67
Bldg D - B1_Toilet 46		-	100	-	76
Bldg D - B1_Toilet 47		-	100	-	67
Bldg D - B1_Toilet 48		-	100	-	76
Bldg D - B1_Toilet 49		-	100	-	67
Bldg D - B1_Toilet 50		-	100	-	76
Bldg D - B1_Toilet 51		-	100	-	67
Bldg D - B1_Toilet 52		-	100	-	76
Bldg D - B1_Toilet 53		-	100	-	67
Bldg D - B1_Toilet 54		-	100	-	76
Bldg D - B1_Toilet 55		-	100	-	67
Bldg D - B1_Toilet 56		-	100	-	76
Bldg A - B1_Store (Refuse) 1		100	-	-	82
Bldg B - B1_Store (Refuse) 1		100	-	-	131
Bldg C - B1_Store (Refuse) 1		100	-	-	127
Bldg D - B1_Store (Refuse) 1		100	-	-	128
Bldg A - B1_Plant 1		100	-	-	911
Bldg B - B1_Plant 1		100	-	-	234
Bldg B - B1_Plant 2		100	-	-	329
Bldg C - B1_Plant 1		100	-	-	334
Bldg C - B1_Plant 2		100	-	-	328
Bldg D - B1_Plant 1		100	-	-	1122

Criterion 3: The spaces in the building should have appropriate passive control measures to limit solar gains

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg A - B1_Office 1	NO (-39%)	NO
Bldg A - B1_Office 2	NO (-24%)	NO
Bldg A - B1_Office 3	NO (-19%)	NO
Bldg A - B1_Office 4	YES (+2%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg A - B1_Office 5	NO (-18%)	NO
Bldg A - B1_Office 6	NO (-36%)	NO
Bldg A - B1_Office 7	NO (-32%)	NO
Bldg A - B1_Office 8	NO (-35%)	NO
Bldg A - B1_Office 9	NO (-84%)	NO
Bldg A - B1_Office 10	NO (-22%)	NO
Bldg A - B1_Office 11	NO (-39%)	NO
Bldg A - B1_Office 12	NO (-37%)	NO
Bldg A - B1_Office 13	NO (-42%)	NO
Bldg A - B1_Office 14	NO (-24%)	NO
Bldg A - B1_Office 15	NO (-21%)	NO
Bldg A - B1_Office 16	YES (+16%)	NO
Bldg A - B1_Office 17	YES (+2%)	NO
Bldg A - B1_Office 18	NO (-20%)	NO
Bldg A - B1_Office 19	NO (-35%)	NO
Bldg A - B1_Office 20	NO (-32%)	NO
Bldg A - B1_Office 21	NO (-38%)	NO
Bldg A - B1_Office 22	NO (-84%)	NO
Bldg A - B1_Office 23	NO (-21%)	NO
Bldg A - B1_Office 24	NO (-38%)	NO
Bldg A - B1_Office 25	NO (-34%)	NO
Bldg A - B1_Office 26	NO (-41%)	NO
Bldg A - B1_Office 27	NO (-25%)	NO
Bldg A - B1_Office 28	NO (-21%)	NO
Bldg A - B1_Office 29	YES (+16%)	NO
Bldg A - B1_Office 30	YES (+2%)	NO
Bldg A - B1_Office 31	NO (-20%)	NO
Bldg A - B1_Office 32	NO (-36%)	NO
Bldg A - B1_Office 33	NO (-31%)	NO
Bldg A - B1_Office 34	NO (-37%)	NO
Bldg A - B1_Office 35	NO (-83%)	NO
Bldg A - B1_Office 36	NO (-17%)	NO
Bldg A - B1_Office 37	NO (-36%)	NO
Bldg A - B1_Office 38	NO (-34%)	NO
Bldg A - B1_Office 39	NO (-41%)	NO
Bldg A - B1_Office 40	NO (-25%)	NO
Bldg A - B1_Office 41	NO (-22%)	NO
Bldg A - B1_Office 42	NO (-21%)	NO
Bldg A - B1_Office 43	YES (+16%)	NO
Bldg A - B1_Office 44	YES (+2%)	NO
Bldg A - B1_Office 45	NO (-19%)	NO
Bldg A - B1_Office 46	NO (-30%)	NO
Bldg A - B1_Office 47	NO (-37%)	NO
Bldg A - B1_Office 48	NO (-31%)	NO
Bldg A - B1_Office 49	NO (-36%)	NO
Bldg A - B1_Office 50	NO (-84%)	NO
Bldg A - B1_Office 51	NO (-8%)	NO
Bldg A - B1_Office 52	NO (-33%)	NO
Bldg A - B1_Office 53	NO (-24%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg A - B1_Office 54	NO (-28%)	NO
Bldg A - B1_Office 55	NO (-17%)	NO
Bldg A - B1_Office 56	NO (-36%)	NO
Bldg A - B1_Office 57	NO (-16%)	NO
Bldg A - B1_Office 58	NO (-33%)	NO
Bldg A - B1_Office 59	NO (-28%)	NO
Bldg A - B1_Office 60	NO (-66%)	NO
Bldg A - B1_Office 61	NO (-57%)	NO
Bldg A - B1_Office 62	YES (+4%)	NO
Bldg A - B1_Office 63	NO (-18%)	NO
Bldg A - B1_Office 64	NO (-22%)	NO
Bldg A - B1_Office 65	NO (-39%)	NO
Bldg A - B1_Office 66	NO (-34%)	NO
Bldg A - B1_Office 67	NO (-32%)	NO
Bldg A - B1_Office 68	NO (-15%)	NO
Bldg A - B1_Office 69	NO (-21%)	NO
Bldg A - B1_Office 70	YES (+18%)	NO
Bldg A - B1_Office 71	NO (-67%)	NO
Bldg A - B1_Office 72	NO (-56%)	NO
Bldg A - B1_Office 73	NO (-1%)	NO
Bldg A - B1_Office 74	NO (-31%)	NO
Bldg A - B1_Office 75	NO (-24%)	NO
Bldg A - B1_Office 76	NO (-27%)	NO
Bldg A - B1_Office 77	NO (-16%)	NO
Bldg A - B1_Office 78	NO (-35%)	NO
Bldg A - B1_Office 79	NO (-14%)	NO
Bldg A - B1_Office 80	NO (-31%)	NO
Bldg A - B1_Office 81	NO (-25%)	NO
Bldg A - B1_Office 82	NO (-56%)	NO
Bldg A - B1_Office 83	NO (-65%)	NO
Bldg A - B1_Office 84	YES (+4%)	NO
Bldg A - B1_Office 85	NO (-17%)	NO
Bldg A - B1_Office 86	NO (-19%)	NO
Bldg A - B1_Office 87	NO (-37%)	NO
Bldg A - B1_Office 88	NO (-33%)	NO
Bldg A - B1_Office 89	NO (-31%)	NO
Bldg A - B1_Office 90	NO (-15%)	NO
Bldg A - B1_Office 91	NO (-21%)	NO
Bldg A - B1_Office 92	YES (+18%)	NO
Bldg A - B1_Office 93	NO (-66%)	NO
Bldg A - B1_Office 94	NO (-56%)	NO
Bldg A - B1_Office 95	YES (+5%)	NO
Bldg A - B1_Office 96	NO (-29%)	NO
Bldg A - B1_Office 97	NO (-23%)	NO
Bldg A - B1_Office 98	NO (-27%)	NO
Bldg A - B1_Office 99	NO (-14%)	NO
Bldg A - B1_Office 100	NO (-33%)	NO
Bldg B - B1_Office 1	NO (-15%)	NO
Bldg B - B1_Office 2	NO (-14%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg B - B1_Office 3	NO (-16%)	NO
Bldg B - B1_Office 4	NO (-15%)	NO
Bldg B - B1_Office 5	NO (-52%)	NO
Bldg B - B1_Office 6	NO (-71%)	NO
Bldg B - B1_Office 7	NO (-65%)	NO
Bldg B - B1_Office 8	NO (-34%)	NO
Bldg B - B1_Office 9	NO (-36%)	NO
Bldg B - B1_Office 10	NO (-46%)	NO
Bldg B - B1_Office 11	NO (-36%)	NO
Bldg B - B1_Office 12	NO (-52%)	NO
Bldg B - B1_Office 13	NO (-49%)	NO
Bldg B - B1_Office 14	NO (-12%)	NO
Bldg B - B1_Office 15	NO (-14%)	NO
Bldg B - B1_Office 16	NO (-63%)	NO
Bldg B - B1_Office 17	NO (-15%)	NO
Bldg B - B1_Office 18	NO (-15%)	NO
Bldg B - B1_Office 19	NO (-40%)	NO
Bldg B - B1_Office 20	NO (-23%)	NO
Bldg B - B1_Office 21	NO (-36%)	NO
Bldg B - B1_Office 22	NO (-45%)	NO
Bldg B - B1_Office 23	NO (-36%)	NO
Bldg B - B1_Office 24	NO (-38%)	NO
Bldg B - B1_Office 25	NO (-73%)	NO
Bldg B - B1_Office 26	NO (-41%)	NO
Bldg B - B1_Office 27	NO (-46%)	NO
Bldg B - B1_Office 28	NO (-49%)	NO
Bldg B - B1_Office 29	NO (-51%)	NO
Bldg B - B1_Office 30	NO (-79%)	NO
Bldg B - B1_Office 31	NO (-12%)	NO
Bldg B - B1_Office 32	NO (-14%)	NO
Bldg B - B1_Office 33	NO (-63%)	NO
Bldg B - B1_Office 34	NO (-15%)	NO
Bldg B - B1_Office 35	NO (-15%)	NO
Bldg B - B1_Office 36	NO (-39%)	NO
Bldg B - B1_Office 37	NO (-21%)	NO
Bldg B - B1_Office 38	NO (-36%)	NO
Bldg B - B1_Office 39	NO (-46%)	NO
Bldg B - B1_Office 40	NO (-35%)	NO
Bldg B - B1_Office 41	NO (-35%)	NO
Bldg B - B1_Office 42	NO (-75%)	NO
Bldg B - B1_Office 43	NO (-38%)	NO
Bldg B - B1_Office 44	NO (-48%)	NO
Bldg B - B1_Office 45	NO (-49%)	NO
Bldg B - B1_Office 46	NO (-43%)	NO
Bldg B - B1_Office 47	NO (-80%)	NO
Bldg B - B1_Office 48	NO (-12%)	NO
Bldg B - B1_Office 49	NO (-14%)	NO
Bldg B - B1_Office 50	NO (-63%)	NO
Bldg B - B1_Office 51	NO (-15%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg B - B1_Office 52	NO (-15%)	NO
Bldg B - B1_Office 53	NO (-39%)	NO
Bldg B - B1_Office 54	NO (-16%)	NO
Bldg B - B1_Office 55	NO (-35%)	NO
Bldg B - B1_Office 56	NO (-45%)	NO
Bldg B - B1_Office 57	NO (-34%)	NO
Bldg B - B1_Office 58	NO (-34%)	NO
Bldg B - B1_Office 59	NO (-77%)	NO
Bldg B - B1_Office 60	NO (-37%)	NO
Bldg B - B1_Office 61	NO (-71%)	NO
Bldg B - B1_Office 62	NO (-40%)	NO
Bldg B - B1_Office 63	NO (-72%)	NO
Bldg B - B1_Office 64	NO (-49%)	NO
Bldg B - B1_Office 65	NO (-48%)	NO
Bldg B - B1_Office 66	NO (-80%)	NO
Bldg B - B1_Office 67	NO (-13%)	NO
Bldg B - B1_Office 68	NO (-31%)	NO
Bldg B - B1_Office 69	NO (-32%)	NO
Bldg B - B1_Office 70	NO (-74%)	NO
Bldg B - B1_Office 71	NO (-35%)	NO
Bldg B - B1_Office 72	NO (-12%)	NO
Bldg B - B1_Office 73	NO (-14%)	NO
Bldg B - B1_Office 74	NO (-63%)	NO
Bldg B - B1_Office 75	NO (-15%)	NO
Bldg B - B1_Office 76	NO (-15%)	NO
Bldg B - B1_Office 77	NO (-38%)	NO
Bldg B - B1_Office 78	NO (-80%)	NO
Bldg B - B1_Office 79	NO (-47%)	NO
Bldg B - B1_Office 80	NO (-47%)	NO
Bldg B - B1_Office 81	NO (-10%)	NO
Bldg B - B1_Office 82	NO (-32%)	NO
Bldg B - B1_Office 83	NO (-31%)	NO
Bldg B - B1_Office 84	NO (-61%)	NO
Bldg B - B1_Office 85	NO (-4%)	NO
Bldg B - B1_Office 86	NO (-28%)	NO
Bldg B - B1_Office 87	NO (-30%)	NO
Bldg B - B1_Office 88	NO (-72%)	NO
Bldg B - B1_Office 89	NO (-29%)	NO
Bldg B - B1_Office 90	NO (-12%)	NO
Bldg B - B1_Office 91	NO (-13%)	NO
Bldg B - B1_Office 92	NO (-63%)	NO
Bldg B - B1_Office 93	NO (-14%)	NO
Bldg B - B1_Office 94	NO (-15%)	NO
Bldg B - B1_Office 95	NO (-37%)	NO
Bldg B - B1_Office 96	NO (-80%)	NO
Bldg B - B1_Office 97	NO (-47%)	NO
Bldg B - B1_Office 98	NO (-45%)	NO
Bldg B - B1_Office 99	NO (-7%)	NO
Bldg B - B1_Office 100	NO (-32%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg C - B1_Office 1	NO (-15%)	NO
Bldg C - B1_Office 2	NO (-14%)	NO
Bldg C - B1_Office 3	NO (-64%)	NO
Bldg C - B1_Office 4	NO (-14%)	NO
Bldg C - B1_Office 5	NO (-15%)	NO
Bldg C - B1_Office 6	NO (-63%)	NO
Bldg C - B1_Office 7	NO (-51%)	NO
Bldg C - B1_Office 9	NO (-36%)	NO
Bldg C - B1_Office 10	NO (-50%)	NO
Bldg C - B1_Office 11	NO (-46%)	NO
Bldg C - B1_Office 12	NO (-36%)	NO
Bldg C - B1_Office 13	NO (-36%)	NO
Bldg C - B1_Office 14	NO (-14%)	NO
Bldg C - B1_Office 15	NO (-15%)	NO
Bldg C - B1_Office 16	NO (-63%)	NO
Bldg C - B1_Office 17	NO (-13%)	NO
Bldg C - B1_Office 18	NO (-16%)	NO
Bldg C - B1_Office 19	NO (-63%)	NO
Bldg C - B1_Office 20	NO (-36%)	NO
Bldg C - B1_Office 21	NO (-91%)	NO
Bldg C - B1_Office 22	NO (-98%)	NO
Bldg C - B1_Office 23	NO (-98%)	NO
Bldg C - B1_Office 24	NO (-96%)	NO
Bldg C - B1_Office 25	NO (-80%)	NO
Bldg C - B1_Office 26	NO (-43%)	NO
Bldg C - B1_Office 27	NO (-36%)	NO
Bldg C - B1_Office 28	NO (-46%)	NO
Bldg C - B1_Office 29	NO (-95%)	NO
Bldg C - B1_Office 30	NO (-36%)	NO
Bldg C - B1_Office 31	NO (-15%)	NO
Bldg C - B1_Office 32	NO (-14%)	NO
Bldg C - B1_Office 33	NO (-15%)	NO
Bldg C - B1_Office 34	NO (-63%)	NO
Bldg C - B1_Office 35	NO (-13%)	NO
Bldg C - B1_Office 36	NO (-16%)	NO
Bldg C - B1_Office 37	NO (-63%)	NO
Bldg C - B1_Office 38	NO (-36%)	NO
Bldg C - B1_Office 39	NO (-91%)	NO
Bldg C - B1_Office 40	NO (-98%)	NO
Bldg C - B1_Office 41	NO (-98%)	NO
Bldg C - B1_Office 42	NO (-97%)	NO
Bldg C - B1_Office 43	NO (-81%)	NO
Bldg C - B1_Office 44	NO (-41%)	NO
Bldg C - B1_Office 45	NO (-36%)	NO
Bldg C - B1_Office 46	NO (-47%)	NO
Bldg C - B1_Office 47	NO (-95%)	NO
Bldg C - B1_Office 48	NO (-36%)	NO
Bldg C - B1_Office 49	NO (-15%)	NO
Bldg C - B1_Office 50	NO (-14%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg C - B1_Office 51	NO (-15%)	NO
Bldg C - B1_Office 52	NO (-63%)	NO
Bldg C - B1_Office 53	NO (-13%)	NO
Bldg C - B1_Office 54	NO (-16%)	NO
Bldg C - B1_Office 55	NO (-63%)	NO
Bldg C - B1_Office 56	NO (-36%)	NO
Bldg C - B1_Office 57	NO (-91%)	NO
Bldg C - B1_Office 58	NO (-98%)	NO
Bldg C - B1_Office 59	NO (-98%)	NO
Bldg C - B1_Office 60	NO (-96%)	NO
Bldg C - B1_Office 61	NO (-82%)	NO
Bldg C - B1_Office 62	NO (-39%)	NO
Bldg C - B1_Office 63	NO (-34%)	NO
Bldg C - B1_Office 64	NO (-47%)	NO
Bldg C - B1_Office 65	NO (-85%)	NO
Bldg C - B1_Office 66	NO (-95%)	NO
Bldg C - B1_Office 67	NO (-36%)	NO
Bldg C - B1_Office 68	NO (-74%)	NO
Bldg C - B1_Office 69	NO (-14%)	NO
Bldg C - B1_Office 70	NO (-14%)	NO
Bldg C - B1_Office 71	NO (-15%)	NO
Bldg C - B1_Office 72	NO (-62%)	NO
Bldg C - B1_Office 73	NO (-12%)	NO
Bldg C - B1_Office 74	NO (-16%)	NO
Bldg C - B1_Office 75	NO (-63%)	NO
Bldg C - B1_Office 76	NO (-35%)	NO
Bldg C - B1_Office 77	NO (-82%)	NO
Bldg C - B1_Office 78	NO (-47%)	NO
Bldg C - B1_Office 79	NO (-45%)	NO
Bldg C - B1_Office 80	NO (-38%)	NO
Bldg C - B1_Office 81	NO (-74%)	NO
Bldg C - B1_Office 82	NO (-37%)	NO
Bldg C - B1_Office 83	NO (-31%)	NO
Bldg C - B1_Office 84	NO (-15%)	NO
Bldg C - B1_Office 85	NO (-34%)	NO
Bldg C - B1_Office 86	NO (-31%)	NO
Bldg C - B1_Office 87	NO (-60%)	NO
Bldg C - B1_Office 88	NO (-11%)	NO
Bldg C - B1_Office 89	NO (-14%)	NO
Bldg C - B1_Office 90	NO (-15%)	NO
Bldg C - B1_Office 91	NO (-62%)	NO
Bldg C - B1_Office 92	NO (-12%)	NO
Bldg C - B1_Office 93	NO (-16%)	NO
Bldg C - B1_Office 94	NO (-63%)	NO
Bldg C - B1_Office 95	NO (-35%)	NO
Bldg C - B1_Office 96	NO (-82%)	NO
Bldg C - B1_Office 97	NO (-45%)	NO
Bldg C - B1_Office 98	NO (-47%)	NO
Bldg C - B1_Office 99	NO (-34%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg C - B1_Office 100	NO (-73%)	NO
Bldg D - B1_Office 1	YES (+2%)	NO
Bldg D - B1_Office 2	YES (+1%)	NO
Bldg D - B1_Office 3	NO (-25%)	NO
Bldg D - B1_Office 4	NO (-46%)	NO
Bldg D - B1_Office 5	NO (-38%)	NO
Bldg D - B1_Office 6	NO (-32%)	NO
Bldg D - B1_Office 7	NO (-15%)	NO
Bldg D - B1_Office 8	NO (-77%)	NO
Bldg D - B1_Office 9	YES (+1%)	NO
Bldg D - B1_Office 10	YES (+2%)	NO
Bldg D - B1_Office 11	NO (-29%)	NO
Bldg D - B1_Office 12	NO (-40%)	NO
Bldg D - B1_Office 13	NO (-31%)	NO
Bldg D - B1_Office 14	NO (-15%)	NO
Bldg D - B1_Office 15	NO (-72%)	NO
Bldg D - B1_Office 16	NO (-9%)	NO
Bldg D - B1_Office 17	YES (+1%)	NO
Bldg D - B1_Office 18	YES (+1%)	NO
Bldg D - B1_Office 19	NO (-29%)	NO
Bldg D - B1_Office 20	NO (-38%)	NO
Bldg D - B1_Office 21	NO (-31%)	NO
Bldg D - B1_Office 22	NO (-15%)	NO
Bldg D - B1_Office 23	NO (-73%)	NO
Bldg D - B1_Office 24	NO (-8%)	NO
Bldg D - B1_Office 25	YES (+1%)	NO
Bldg D - B1_Office 26	YES (+1%)	NO
Bldg D - B1_Office 27	NO (-29%)	NO
Bldg D - B1_Office 28	NO (-37%)	NO
Bldg D - B1_Office 29	NO (-31%)	NO
Bldg D - B1_Office 30	NO (-15%)	NO
Bldg D - B1_Office 31	NO (-73%)	NO
Bldg D - B1_Office 32	NO (-8%)	NO
Bldg D - B1_Office 33	YES (+1%)	NO
Bldg D - B1_Office 34	YES (+1%)	NO
Bldg D - B1_Office 35	NO (-29%)	NO
Bldg D - B1_Office 36	NO (-36%)	NO
Bldg D - B1_Office 37	NO (-31%)	NO
Bldg D - B1_Office 38	NO (-15%)	NO
Bldg D - B1_Office 39	NO (-73%)	NO
Bldg D - B1_Office 40	NO (-8%)	NO
Bldg D - B1_Office 41	YES (+1%)	NO
Bldg D - B1_Office 42	YES (+1%)	NO
Bldg D - B1_Office 43	NO (-29%)	NO
Bldg D - B1_Office 44	NO (-34%)	NO
Bldg D - B1_Office 45	NO (-31%)	NO
Bldg D - B1_Office 46	NO (-15%)	NO
Bldg D - B1_Office 47	NO (-72%)	NO
Bldg D - B1_Office 48	NO (-8%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg D - B1_Office 49	YES (+1%)	NO
Bldg D - B1_Office 50	YES (+1%)	NO
Bldg D - B1_Office 51	NO (-28%)	NO
Bldg D - B1_Office 52	NO (-32%)	NO
Bldg D - B1_Office 53	NO (-31%)	NO
Bldg D - B1_Office 54	NO (-15%)	NO
Bldg D - B1_Office 55	NO (-72%)	NO
Bldg D - B1_Office 56	NO (-8%)	NO
Bldg D - B1_Office 57	NO (-15%)	NO
Bldg D - B1_Office 58	NO (-30%)	NO
Bldg D - B1_Office 59	NO (-29%)	NO
Bldg D - B1_Office 60	NO (-28%)	NO
Bldg D - B1_Office 61	YES (+2%)	NO
Bldg D - B1_Office 62	YES (+1%)	NO
Bldg D - B1_Office 63	NO (-71%)	NO
Bldg D - B1_Office 64	NO (-8%)	NO
Bldg D - B1_Office 65	YES (+1%)	NO
Bldg D - B1_Office 66	YES (+2%)	NO
Bldg D - B1_Office 67	NO (-27%)	NO
Bldg D - B1_Office 68	NO (-27%)	NO
Bldg D - B1_Office 69	NO (-30%)	NO
Bldg D - B1_Office 70	NO (-15%)	NO
Bldg D - B1_Office 71	NO (-70%)	NO
Bldg D - B1_Office 72	NO (-8%)	NO
Bldg D - B1_Office 73	YES (+1%)	NO
Bldg D - B1_Office 74	YES (+2%)	NO
Bldg D - B1_Office 75	NO (-27%)	NO
Bldg D - B1_Office 76	NO (-26%)	NO
Bldg D - B1_Office 77	NO (-29%)	NO
Bldg D - B1_Office 78	NO (-15%)	NO
Bldg D - B1_Office 79	NO (-69%)	NO
Bldg D - B1_Office 80	NO (-8%)	NO
Bldg D - B1_Office 81	YES (+1%)	NO
Bldg D - B1_Office 82	YES (+2%)	NO
Bldg D - B1_Office 83	NO (-26%)	NO
Bldg D - B1_Office 84	NO (-25%)	NO
Bldg D - B1_Office 85	NO (-28%)	NO
Bldg D - B1_Office 86	NO (-15%)	NO
Bldg D - B1_Office 87	NO (-68%)	NO
Bldg D - B1_Office 88	NO (-7%)	NO
Bldg D - B1_Office 89	YES (+1%)	NO
Bldg D - B1_Office 90	YES (+2%)	NO
Bldg D - B1_Office 91	NO (-25%)	NO
Bldg D - B1_Office 92	NO (-24%)	NO
Bldg D - B1_Office 93	NO (-27%)	NO
Bldg D - B1_Office 94	NO (-15%)	NO
Bldg D - B1_Office 95	NO (-68%)	NO
Bldg D - B1_Office 96	NO (-8%)	NO
Bldg D - B1_Office 97	YES (+2%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg D - B1_Office 98	YES (+2%)	NO
Bldg D - B1_Office 99	NO (-19%)	NO
Bldg D - B1_Office 100	NO (-32%)	NO
Bldg A - B1_Office 101	NO (-12%)	NO
Bldg A - B1_Office 102	NO (-27%)	NO
Bldg A - B1_Office 103	NO (-22%)	NO
Bldg A - B1_Office 104	NO (-54%)	NO
Bldg A - B1_Office 105	NO (-65%)	NO
Bldg A - B1_Office 106	YES (+4%)	NO
Bldg A - B1_Office 107	NO (-16%)	NO
Bldg A - B1_Office 108	NO (-16%)	NO
Bldg A - B1_Office 109	NO (-36%)	NO
Bldg A - B1_Office 110	NO (-32%)	NO
Bldg A - B1_Office 111	NO (-29%)	NO
Bldg A - B1_Office 112	NO (-14%)	NO
Bldg A - B1_Office 113	NO (-20%)	NO
Bldg A - B1_Office 114	YES (+18%)	NO
Bldg A - B1_Office 115	NO (-66%)	NO
Bldg A - B1_Office 116	NO (-56%)	NO
Bldg A - B1_Office 117	YES (+7%)	NO
Bldg A - B1_Office 118	NO (-28%)	NO
Bldg A - B1_Office 119	NO (-23%)	NO
Bldg A - B1_Office 120	NO (-27%)	NO
Bldg A - B1_Office 121	NO (-12%)	NO
Bldg A - B1_Office 122	NO (-28%)	NO
Bldg A - B1_Office 123	NO (-6%)	NO
Bldg A - B1_Office 124	NO (-24%)	NO
Bldg A - B1_Office 125	NO (-19%)	NO
Bldg A - B1_Office 126	NO (-54%)	NO
Bldg A - B1_Office 127	NO (-64%)	NO
Bldg A - B1_Office 128	YES (+7%)	NO
Bldg A - B1_Office 129	NO (-14%)	NO
Bldg A - B1_Office 130	NO (-11%)	NO
Bldg A - B1_Office 131	NO (-32%)	NO
Bldg A - B1_Office 132	NO (-27%)	NO
Bldg A - B1_Office 133	NO (-27%)	NO
Bldg A - B1_Office 134	NO (-13%)	NO
Bldg A - B1_Office 135	NO (-20%)	NO
Bldg A - B1_Office 136	YES (+18%)	NO
Bldg A - B1_Office 137	NO (-62%)	NO
Bldg A - B1_Office 138	NO (-55%)	NO
Bldg A - B1_Office 139	YES (+9%)	NO
Bldg A - B1_Office 140	NO (-12%)	NO
Bldg A - B1_Office 141	NO (-8%)	NO
Bldg A - B1_Office 142	NO (-30%)	NO
Bldg A - B1_Office 143	NO (-26%)	NO
Bldg A - B1_Office 144	NO (-27%)	NO
Bldg A - B1_Office 145	NO (-12%)	NO
Bldg A - B1_Office 146	NO (-20%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg A - B1_Office 147	YES (+18%)	NO
Bldg A - B1_Office 148	NO (-59%)	NO
Bldg A - B1_Office 149	NO (-55%)	NO
Bldg A - B1_Office 150	YES (+11%)	NO
Bldg A - B1_Office 151	NO (-10%)	NO
Bldg A - B1_Office 152	NO (-4%)	NO
Bldg A - B1_Office 153	NO (-28%)	NO
Bldg A - B1_Office 154	NO (-25%)	NO
Bldg A - B1_Office 155	NO (-27%)	NO
Bldg A - B1_Office 156	NO (-12%)	NO
Bldg A - B1_Office 157	NO (-20%)	NO
Bldg A - B1_Office 158	YES (+18%)	NO
Bldg A - B1_Office 159	NO (-57%)	NO
Bldg A - B1_Office 160	NO (-55%)	NO
Bldg B - B1_Office 101	NO (-31%)	NO
Bldg B - B1_Office 102	NO (-59%)	NO
Bldg B - B1_Office 103	YES (+3%)	NO
Bldg B - B1_Office 104	NO (-26%)	NO
Bldg B - B1_Office 105	NO (-26%)	NO
Bldg B - B1_Office 106	NO (-67%)	NO
Bldg B - B1_Office 107	NO (-18%)	NO
Bldg B - B1_Office 108	NO (-12%)	NO
Bldg B - B1_Office 109	NO (-12%)	NO
Bldg B - B1_Office 110	NO (-62%)	NO
Bldg B - B1_Office 111	NO (-13%)	NO
Bldg B - B1_Office 112	NO (-15%)	NO
Bldg B - B1_Office 113	NO (-35%)	NO
Bldg B - B1_Office 114	NO (-80%)	NO
Bldg B - B1_Office 115	NO (-47%)	NO
Bldg B - B1_Office 116	NO (-44%)	NO
Bldg B - B1_Office 117	YES (+3%)	NO
Bldg B - B1_Office 118	NO (-30%)	NO
Bldg B - B1_Office 119	NO (-26%)	NO
Bldg B - B1_Office 120	NO (-12%)	NO
Bldg B - B1_Office 121	NO (-24%)	NO
Bldg B - B1_Office 122	NO (-69%)	NO
Bldg B - B1_Office 123	NO (-10%)	NO
Bldg B - B1_Office 124	NO (-12%)	NO
Bldg B - B1_Office 125	NO (-11%)	NO
Bldg B - B1_Office 126	NO (-62%)	NO
Bldg B - B1_Office 127	NO (-11%)	NO
Bldg B - B1_Office 128	NO (-15%)	NO
Bldg B - B1_Office 129	NO (-33%)	NO
Bldg B - B1_Office 130	NO (-80%)	NO
Bldg B - B1_Office 131	NO (-46%)	NO
Bldg B - B1_Office 132	NO (-44%)	NO
Bldg B - B1_Office 133	NO (-27%)	NO
Bldg B - B1_Office 134	NO (-21%)	NO
Bldg B - B1_Office 135	NO (-65%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg B - B1_Office 136	NO (-2%)	NO
Bldg B - B1_Office 137	NO (-9%)	NO
Bldg B - B1_Office 138	NO (-10%)	NO
Bldg B - B1_Office 139	NO (-61%)	NO
Bldg B - B1_Office 140	YES (+20%)	NO
Bldg B - B1_Office 141	NO (-13%)	NO
Bldg B - B1_Office 142	NO (-15%)	NO
Bldg B - B1_Office 143	NO (-31%)	NO
Bldg B - B1_Office 144	NO (-79%)	NO
Bldg B - B1_Office 145	NO (-43%)	NO
Bldg B - B1_Office 146	NO (-42%)	NO
Bldg B - B1_Office 147	NO (-27%)	NO
Bldg B - B1_Office 148	NO (-20%)	NO
Bldg B - B1_Office 149	NO (-63%)	NO
Bldg B - B1_Office 150	NO (-3%)	NO
Bldg B - B1_Office 151	NO (-8%)	NO
Bldg B - B1_Office 152	NO (-7%)	NO
Bldg B - B1_Office 153	NO (-9%)	NO
Bldg B - B1_Office 154	NO (-54%)	NO
Bldg B - B1_Office 155	NO (-27%)	NO
Bldg B - B1_Office 156	NO (-20%)	NO
Bldg B - B1_Office 157	NO (-62%)	NO
Bldg B - B1_Office 158	NO (-2%)	NO
Bldg B - B1_Office 159	NO (-8%)	NO
Bldg B - B1_Office 160	NO (-6%)	NO
Bldg B - B1_Office 161	NO (-7%)	NO
Bldg B - B1_Office 162	NO (-53%)	NO
Bldg B - B1_Office 163	NO (-27%)	NO
Bldg B - B1_Office 164	NO (-20%)	NO
Bldg B - B1_Office 165	NO (-62%)	NO
Bldg B - B1_Office 166	NO (-2%)	NO
Bldg B - B1_Office 167	NO (-8%)	NO
Bldg B - B1_Office 168	NO (-6%)	NO
Bldg B - B1_Office 169	NO (-7%)	NO
Bldg B - B1_Office 170	NO (-53%)	NO
Bldg B - B1_Office 171	NO (-27%)	NO
Bldg B - B1_Office 172	NO (-20%)	NO
Bldg B - B1_Office 173	NO (-62%)	NO
Bldg B - B1_Office 174	NO (-2%)	NO
Bldg B - B1_Office 175	NO (-8%)	NO
Bldg B - B1_Office 176	NO (-5%)	NO
Bldg B - B1_Office 177	NO (-6%)	NO
Bldg B - B1_Office 178	NO (-52%)	NO
Bldg C - B1_Office 101	NO (-34%)	NO
Bldg C - B1_Office 102	NO (-29%)	NO
Bldg C - B1_Office 103	NO (-7%)	NO
Bldg C - B1_Office 104	NO (-31%)	NO
Bldg C - B1_Office 105	NO (-33%)	NO
Bldg C - B1_Office 106	NO (-11%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg C - B1_Office 107	NO (-60%)	NO
Bldg C - B1_Office 108	NO (-15%)	NO
Bldg C - B1_Office 109	NO (-14%)	NO
Bldg C - B1_Office 110	NO (-62%)	NO
Bldg C - B1_Office 111	NO (-12%)	NO
Bldg C - B1_Office 112	NO (-16%)	NO
Bldg C - B1_Office 113	NO (-63%)	NO
Bldg C - B1_Office 114	NO (-35%)	NO
Bldg C - B1_Office 115	NO (-82%)	NO
Bldg C - B1_Office 116	NO (-47%)	NO
Bldg C - B1_Office 117	NO (-45%)	NO
Bldg C - B1_Office 118	NO (-29%)	NO
Bldg C - B1_Office 119	NO (-70%)	NO
Bldg C - B1_Office 120	NO (-31%)	NO
Bldg C - B1_Office 121	NO (-27%)	NO
Bldg C - B1_Office 122	NO (-2%)	NO
Bldg C - B1_Office 123	NO (-30%)	NO
Bldg C - B1_Office 124	NO (-33%)	NO
Bldg C - B1_Office 125	NO (-8%)	NO
Bldg C - B1_Office 126	NO (-60%)	NO
Bldg C - B1_Office 127	NO (-11%)	NO
Bldg C - B1_Office 128	NO (-15%)	NO
Bldg C - B1_Office 129	NO (-61%)	NO
Bldg C - B1_Office 130	NO (-11%)	NO
Bldg C - B1_Office 131	NO (-16%)	NO
Bldg C - B1_Office 132	NO (-63%)	NO
Bldg C - B1_Office 133	NO (-34%)	NO
Bldg C - B1_Office 134	NO (-82%)	NO
Bldg C - B1_Office 135	NO (-44%)	NO
Bldg C - B1_Office 136	NO (-47%)	NO
Bldg C - B1_Office 137	NO (-23%)	NO
Bldg C - B1_Office 138	NO (-71%)	NO
Bldg C - B1_Office 139	NO (-27%)	NO
Bldg C - B1_Office 140	NO (-31%)	NO
Bldg C - B1_Office 141	NO (-9%)	NO
Bldg C - B1_Office 142	NO (-14%)	NO
Bldg C - B1_Office 143	NO (-60%)	NO
Bldg C - B1_Office 144	NO (-9%)	NO
Bldg C - B1_Office 145	NO (-16%)	NO
Bldg C - B1_Office 146	NO (-63%)	NO
Bldg C - B1_Office 147	NO (-32%)	NO
Bldg C - B1_Office 148	NO (-82%)	NO
Bldg C - B1_Office 149	NO (-44%)	NO
Bldg C - B1_Office 150	NO (-47%)	NO
Bldg C - B1_Office 151	NO (-15%)	NO
Bldg C - B1_Office 152	NO (-69%)	NO
Bldg C - B1_Office 153	NO (-26%)	NO
Bldg C - B1_Office 154	NO (-28%)	NO
Bldg C - B1_Office 155	NO (-9%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg C - B1_Office 156	NO (-13%)	NO
Bldg C - B1_Office 157	NO (-61%)	NO
Bldg C - B1_Office 158	YES (+28%)	NO
Bldg C - B1_Office 159	NO (-14%)	NO
Bldg C - B1_Office 160	NO (-16%)	NO
Bldg C - B1_Office 161	NO (-61%)	NO
Bldg C - B1_Office 162	NO (-27%)	NO
Bldg C - B1_Office 163	NO (-81%)	NO
Bldg C - B1_Office 164	NO (-41%)	NO
Bldg C - B1_Office 165	NO (-43%)	NO
Bldg C - B1_Office 166	NO (-8%)	NO
Bldg C - B1_Office 167	NO (-66%)	NO
Bldg C - B1_Office 168	NO (-24%)	NO
Bldg C - B1_Office 169	NO (-27%)	NO
Bldg C - B1_Office 170	NO (-7%)	NO
Bldg C - B1_Office 171	NO (-9%)	NO
Bldg C - B1_Office 172	NO (-55%)	NO
Bldg C - B1_Office 173	NO (-10%)	NO
Bldg C - B1_Office 174	NO (-6%)	NO
Bldg C - B1_Office 175	NO (-63%)	NO
Bldg C - B1_Office 176	NO (-22%)	NO
Bldg C - B1_Office 177	NO (-26%)	NO
Bldg C - B1_Office 178	NO (-7%)	NO
Bldg C - B1_Office 179	NO (-8%)	NO
Bldg C - B1_Office 180	NO (-8%)	NO
Bldg C - B1_Office 181	NO (-55%)	NO
Bldg C - B1_Office 182	NO (-6%)	NO
Bldg C - B1_Office 183	NO (-62%)	NO
Bldg C - B1_Office 184	NO (-21%)	NO
Bldg C - B1_Office 185	NO (-25%)	NO
Bldg C - B1_Office 186	NO (-7%)	NO
Bldg C - B1_Office 187	NO (-8%)	NO
Bldg C - B1_Office 188	NO (-7%)	NO
Bldg C - B1_Office 189	NO (-55%)	NO
Bldg C - B1_Office 190	NO (-21%)	NO
Bldg C - B1_Office 191	NO (-62%)	NO
Bldg C - B1_Office 192	NO (-5%)	NO
Bldg C - B1_Office 193	NO (-25%)	NO
Bldg C - B1_Office 194	NO (-7%)	NO
Bldg C - B1_Office 195	NO (-8%)	NO
Bldg C - B1_Office 196	NO (-5%)	NO
Bldg C - B1_Office 197	NO (-55%)	NO
Bldg C - B1_Office 198	NO (-4%)	NO
Bldg C - B1_Office 199	NO (-62%)	NO
Bldg C - B1_Office 200	NO (-21%)	NO
Bldg C - B1_Office 201	NO (-25%)	NO
Bldg D - B1_Office 101	NO (-12%)	NO
Bldg D - B1_Office 102	NO (-60%)	NO
Bldg D - B1_Office 103	YES (+2%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg D - B1_Office 104	YES (+2%)	NO
Bldg D - B1_Office 105	NO (-19%)	NO
Bldg D - B1_Office 106	NO (-31%)	NO
Bldg D - B1_Office 107	NO (-13%)	NO
Bldg D - B1_Office 108	NO (-61%)	NO
Bldg D - B1_Office 109	YES (+2%)	NO
Bldg D - B1_Office 110	YES (+2%)	NO
Bldg D - B1_Office 111	NO (-19%)	NO
Bldg D - B1_Office 112	NO (-31%)	NO
Bldg D - B1_Office 113	NO (-13%)	NO
Bldg D - B1_Office 114	NO (-61%)	NO
Bldg D - B1_Office 115	YES (+2%)	NO
Bldg D - B1_Office 116	YES (+2%)	NO
Bldg D - B1_Office 117	NO (-19%)	NO
Bldg D - B1_Office 118	NO (-31%)	NO
Bldg D - B1_Office 119	NO (-13%)	NO
Bldg D - B1_Office 120	NO (-61%)	NO
Bldg D - B1_Office 121	YES (+2%)	NO
Bldg D - B1_Office 122	YES (+2%)	NO
Bldg D - B1_Office 123	NO (-19%)	NO
Bldg D - B1_Office 124	NO (-31%)	NO
Bldg D - B1_Office 125	NO (-13%)	NO
Bldg D - B1_Office 126	NO (-61%)	NO
Bldg D - B1_Office 127	YES (+2%)	NO
Bldg D - B1_Office 128	YES (+2%)	NO
Bldg D - B1_Office 129	NO (-19%)	NO
Bldg D - B1_Office 130	NO (-31%)	NO
Bldg D - B1_Office 131	NO (-13%)	NO
Bldg D - B1_Office 132	NO (-61%)	NO
Bldg D - B1_Office 133	YES (+2%)	NO
Bldg D - B1_Office 134	YES (+2%)	NO
Bldg D - B1_Office 135	NO (-19%)	NO
Bldg D - B1_Office 136	NO (-31%)	NO
Bldg D - B1_Office 137	NO (-13%)	NO
Bldg D - B1_Office 138	NO (-61%)	NO
Bldg D - B1_Office 139	YES (+2%)	NO
Bldg D - B1_Office 140	YES (+2%)	NO
Bldg D - B1_Office 141	NO (-19%)	NO
Bldg D - B1_Office 142	NO (-31%)	NO
Bldg D - B1_Office 143	NO (-13%)	NO
Bldg D - B1_Office 144	NO (-61%)	NO
Bldg D - B1_Office 145	YES (+2%)	NO
Bldg D - B1_Office 146	YES (+2%)	NO
Bldg D - B1_Office 147	NO (-19%)	NO
Bldg D - B1_Office 148	NO (-31%)	NO
Bldg D - B1_Office 149	NO (-13%)	NO
Bldg D - B1_Office 150	NO (-61%)	NO
Bldg D - B1_Office 151	YES (+2%)	NO
Bldg D - B1_Office 152	YES (+2%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg D - B1_Office 153	NO (-19%)	NO
Bldg D - B1_Office 154	NO (-31%)	NO
Bldg D - B1_Office 155	NO (-13%)	NO
Bldg D - B1_Office 156	NO (-61%)	NO
Bldg D - B1_Office 157	YES (+2%)	NO
Bldg D - B1_Office 158	YES (+2%)	NO
Bldg D - B1_Office 159	NO (-19%)	NO
Bldg D - B1_Office 160	NO (-30%)	NO
Bldg D - B1_Office 161	NO (-12%)	NO
Bldg D - B1_Office 162	NO (-61%)	NO

Criterion 4: The performance of the building, as built, should be consistent with the calculated BER

Separate submission

Criterion 5: The necessary provisions for enabling energy-efficient operation of the building should be in place

Separate submission

EPBD (Recast): Consideration of alternative energy systems

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

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Area [m ²]	86542	86542
External area [m ²]	56689	56689
Weather	SWI	SWI
Infiltration [m ³ /hm ² @ 50Pa]	3	3
Average conductance [W/K]	34028	28935
Average U-value [W/m ² K]	0.6	0.51
Alpha value* [%]	39.9	39.9

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

Building Use

% Area	Building Type
	A1/A2 Retail/Financial and Professional services
	A3/A4/A5 Restaurants and Cafes/Drinking Est./Takeaways
100	B1 Offices and Workshop businesses
	B2 to B7 General Industrial and Special Industrial Groups
	B8 Storage or Distribution
	C1 Hotels
	C2 Residential Institutions: Hospitals and Care Homes
	C2 Residential Institutions: Residential schools
	C2 Residential Institutions: Universities and colleges
	C2A Secure Residential Institutions
	Residential spaces
	D1 Non-residential Institutions: Community/Day Centre
	D1 Non-residential Institutions: Libraries, Museums, and Galleries
	D1 Non-residential Institutions: Education
	D1 Non-residential Institutions: Primary Health Care Building
	D1 Non-residential Institutions: Crown and County Courts
	D2 General Assembly and Leisure, Night Clubs, and Theatres
	Others: Passenger terminals
	Others: Emergency services
	Others: Miscellaneous 24hr activities
	Others: Car Parks 24 hrs
	Others: Stand alone utility block

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	2.72	2.71
Cooling	8.26	9.31
Auxiliary	14.71	10.25
Lighting	12.39	19.58
Hot water	3.27	2.73
Equipment*	39.72	39.72
TOTAL **	41.04	44.57

* 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	0.3	0
Solar thermal systems	0	0

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	115.78	135.4
Primary energy* [kWh/m ²]	112.2	123.77
Total emissions [kg/m ²]	19	21

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

HVAC Systems Performance										
System Type	Heat dem MJ/m2	Cool dem MJ/m2	Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEFF	Cool SSEER	Heat gen SEFF	Cool gen SEER	
[ST] Fan coil systems, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	7.8	124.7	2.6	10.1	17.3	0.85	3.42	0.89	3.6
	Notional	6	147.9	2	11.4	11.9	0.82	3.6	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	12.2	0	4	0	1.1	0.85	0	0.89	0
	Notional	18.8	0	6.4	0	1.1	0.82	0	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	18.6	0	6.1	0	14.4	0.85	0	0.89	0
	Notional	43	0	14.6	0	11.7	0.82	0	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	19.8	0	6.5	0	7.7	0.85	0	0.89	0
	Notional	18.1	0	6.2	0	6.4	0.82	0	----	----

Key to terms

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

Key Features

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

Building fabric

Element	U _{i-Typ}	U _{i-Min}	Surface where the minimum value occurs*
Wall	0.23	0.14	External Wall
Floor	0.2	0.14	Exposed Floor
Roof	0.15	0.15	Roof
Windows, roof windows, and rooflights	1.5	1.21	External Wall (70% Glazed)
Personnel doors	1.5	-	No personal doors in project
Vehicle access & similar large doors	1.5	-	No vehicle doors in project
High usage entrance doors	1.5	-	No high usage entrance doors in project
U _{i-Typ} = Typical individual element U-values [W/(m²K)]		U _{i-Min} = Minimum individual element U-values [W/(m²K)]	
* There might be more than one surface where the minimum U-value occurs.			

Air Permeability	Typical value	This building
m³/(h.m²) at 50 Pa	5	3



Appendix 5
Green Scheme BRUKL

Project name

Reading Station Park - Green Scheme**As designed****Date:** Mon Feb 10 21:46:16 2020**Administrative information****Building Details****Address:** Reading Station Park, Reading, RG1 8BA**Owner Details****Name:** Aviva Investors**Telephone number:** 02078096367**Address:** Saint Helen's, 1 Undershaft, London, EC3P 3DQ**Certification tool****Calculation engine:** TAS**Calculation engine version:** "v9.5.0"**Interface to calculation engine:** TAS**Interface to calculation engine version:** v9.5.0**BRUKL compliance check version:** v5.6.a.1**Certifier details****Name:** Scott Hedges**Telephone number:** 01932753739**Address:** 51 Staines Road West, Sunbury-on-Thames, TW16 7AH**Criterion 1: The calculated CO₂ emission rate for the building must not exceed the target**

CO ₂ emission rate from the notional building, kgCO ₂ /m ² .annum	20.7
Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	20.7
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	16.6
Are emissions from the building less than or equal to the target?	BER ≤ TER
Are as built details the same as used in the BER calculations?	Separate submission

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

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

Building fabric

Element	U _a -Limit	U _a -Calc	U _i -Calc	Surface where the maximum value occurs*
Wall**	0.35	0.14	0.14	External Wall
Floor	0.25	0.14	0.14	Ground Floor
Roof	0.25	0.15	0.15	Roof
Windows***, roof windows, and rooflights	2.2	1.21	1.21	External Wall (70% Glazed)
Personnel doors	2.2	-	-	No personal doors in project
Vehicle access & similar large doors	1.5	-	-	No vehicle doors in project
High usage entrance doors	3.5	-	-	No high usage entrance doors in project
U _a -Limit = Limiting area-weighted average U-values [W/(m ² K)] U _a -Calc = Calculated area-weighted average U-values [W/(m ² K)] U _i -Calc = Calculated maximum individual element U-values [W/(m ² K)]				
* There might be more than one surface where the maximum U-value occurs. ** Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows. *** Display windows and similar glazing are excluded from the U-value check. N.B.: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.				

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

Building services

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

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

1- Office (700 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	6	5.6	-	1.9	0.7
Standard value	2.5*	2.6	N/A	1.6^	0.65
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards.					
^ Limiting SFP may be extended by the amounts specified in the Non-Domestic Building Services Compliance Guide if the system includes additional components as listed in the Guide.					

2- Circulation

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	6	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards.					

3- Toilet (164 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	6	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards.					

4- Refuse (4 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	6	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards.					

1- New HWS Circuit

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	6	0
Standard value	0.9*	N/A
* Standard shown is for gas boilers >30 kW output. For boilers <=30 kW output, limiting efficiency is 0.73.		

"No zones in project where local mechanical ventilation, exhaust, or terminal unit is applicable"

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	Luminaire	Lamp	Display lamp	General lighting [W]
Standard value	60	60	22	
Bldg A - B1_Office 1	100	-	-	543

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg A - B1_Office 2		100	-	-	967
Bldg A - B1_Office 3		100	-	-	205
Bldg A - B1_Office 4		100	-	-	611
Bldg A - B1_Office 5		100	-	-	197
Bldg A - B1_Office 6		100	-	-	725
Bldg A - B1_Office 7		100	-	-	616
Bldg A - B1_Office 8		100	-	-	471
Bldg A - B1_Office 9		100	-	-	3577
Bldg A - B1_Office 10		100	-	-	159
Bldg A - B1_Office 11		100	-	-	198
Bldg A - B1_Office 12		100	-	-	445
Bldg A - B1_Office 13		100	-	-	1072
Bldg A - B1_Office 14		100	-	-	967
Bldg A - B1_Office 15		100	-	-	205
Bldg A - B1_Office 16		100	-	-	155
Bldg A - B1_Office 17		100	-	-	171
Bldg A - B1_Office 18		100	-	-	197
Bldg A - B1_Office 19		100	-	-	725
Bldg A - B1_Office 20		100	-	-	616
Bldg A - B1_Office 21		100	-	-	191
Bldg A - B1_Office 22		100	-	-	4709
Bldg A - B1_Office 23		100	-	-	159
Bldg A - B1_Office 24		100	-	-	198
Bldg A - B1_Office 25		100	-	-	445
Bldg A - B1_Office 26		100	-	-	1072
Bldg A - B1_Office 27		100	-	-	967
Bldg A - B1_Office 28		100	-	-	205
Bldg A - B1_Office 29		100	-	-	155
Bldg A - B1_Office 30		100	-	-	171
Bldg A - B1_Office 31		100	-	-	197
Bldg A - B1_Office 32		100	-	-	725
Bldg A - B1_Office 33		100	-	-	616
Bldg A - B1_Office 34		100	-	-	191
Bldg A - B1_Office 35		100	-	-	4709
Bldg A - B1_Office 36		100	-	-	159
Bldg A - B1_Office 37		100	-	-	198
Bldg A - B1_Office 38		100	-	-	445
Bldg A - B1_Office 39		100	-	-	1072
Bldg A - B1_Office 40		100	-	-	507
Bldg A - B1_Office 41		100	-	-	460
Bldg A - B1_Office 42		100	-	-	205
Bldg A - B1_Office 43		100	-	-	155
Bldg A - B1_Office 44		100	-	-	171

General lighting and display lighting		Luminous efficacy [lm/W]			
Zone name		Luminaire	Lamp	Display lamp	General lighting [W]
	Standard value	60	60	22	
Bldg A - B1_Office 45		100	-	-	197
Bldg A - B1_Office 46		100	-	-	442
Bldg A - B1_Office 47		100	-	-	284
Bldg A - B1_Office 48		100	-	-	616
Bldg A - B1_Office 49		100	-	-	191
Bldg A - B1_Office 50		100	-	-	4709
Bldg A - B1_Office 51		100	-	-	159
Bldg A - B1_Office 52		100	-	-	198
Bldg A - B1_Office 53		100	-	-	268
Bldg A - B1_Office 54		100	-	-	199
Bldg A - B1_Office 55		100	-	-	588
Bldg A - B1_Office 56		100	-	-	197
Bldg A - B1_Office 57		100	-	-	265
Bldg A - B1_Office 58		100	-	-	197
Bldg A - B1_Office 59		100	-	-	191
Bldg A - B1_Office 60		100	-	-	257
Bldg A - B1_Office 61		100	-	-	214
Bldg A - B1_Office 62		100	-	-	171
Bldg A - B1_Office 63		100	-	-	197
Bldg A - B1_Office 64		100	-	-	253
Bldg A - B1_Office 65		100	-	-	188
Bldg A - B1_Office 66		100	-	-	540
Bldg A - B1_Office 67		100	-	-	196
Bldg A - B1_Office 68		100	-	-	264
Bldg A - B1_Office 69		100	-	-	205
Bldg A - B1_Office 70		100	-	-	155
Bldg A - B1_Office 71		100	-	-	220
Bldg A - B1_Office 72		100	-	-	199
Bldg A - B1_Office 73		100	-	-	159
Bldg A - B1_Office 74		100	-	-	198
Bldg A - B1_Office 75		100	-	-	268
Bldg A - B1_Office 76		100	-	-	199
Bldg A - B1_Office 77		100	-	-	588
Bldg A - B1_Office 78		100	-	-	197
Bldg A - B1_Office 79		100	-	-	265
Bldg A - B1_Office 80		100	-	-	197
Bldg A - B1_Office 81		100	-	-	191
Bldg A - B1_Office 82		100	-	-	214
Bldg A - B1_Office 83		100	-	-	257
Bldg A - B1_Office 84		100	-	-	171
Bldg A - B1_Office 85		100	-	-	197
Bldg A - B1_Office 86		100	-	-	253
Bldg A - B1_Office 87		100	-	-	188

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg A - B1_Office 88		100	-	-	540
Bldg A - B1_Office 89		100	-	-	196
Bldg A - B1_Office 90		100	-	-	264
Bldg A - B1_Office 91		100	-	-	205
Bldg A - B1_Office 92		100	-	-	155
Bldg A - B1_Office 93		100	-	-	220
Bldg A - B1_Office 94		100	-	-	199
Bldg A - B1_Office 95		100	-	-	159
Bldg A - B1_Office 96		100	-	-	198
Bldg A - B1_Office 97		100	-	-	268
Bldg A - B1_Office 98		100	-	-	199
Bldg A - B1_Office 99		100	-	-	588
Bldg A - B1_Office 100		100	-	-	197
Bldg B - B1_Office 1		100	-	-	368
Bldg B - B1_Office 2		100	-	-	632
Bldg B - B1_Office 3		100	-	-	786
Bldg B - B1_Office 4		100	-	-	627
Bldg B - B1_Office 5		100	-	-	599
Bldg B - B1_Office 6		100	-	-	1728
Bldg B - B1_Office 7		100	-	-	244
Bldg B - B1_Office 8		100	-	-	391
Bldg B - B1_Office 9		100	-	-	550
Bldg B - B1_Office 10		100	-	-	526
Bldg B - B1_Office 11		100	-	-	547
Bldg B - B1_Office 12		100	-	-	393
Bldg B - B1_Office 13		100	-	-	1657
Bldg B - B1_Office 14		100	-	-	187
Bldg B - B1_Office 15		100	-	-	632
Bldg B - B1_Office 16		100	-	-	244
Bldg B - B1_Office 17		100	-	-	786
Bldg B - B1_Office 18		100	-	-	627
Bldg B - B1_Office 19		100	-	-	1277
Bldg B - B1_Office 20		100	-	-	290
Bldg B - B1_Office 21		100	-	-	547
Bldg B - B1_Office 22		100	-	-	526
Bldg B - B1_Office 23		100	-	-	550
Bldg B - B1_Office 24		100	-	-	1155
Bldg B - B1_Office 25		100	-	-	2159
Bldg B - B1_Office 26		100	-	-	781
Bldg B - B1_Office 27		100	-	-	483
Bldg B - B1_Office 28		100	-	-	547
Bldg B - B1_Office 29		100	-	-	540
Bldg B - B1_Office 30		100	-	-	2215

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg B - B1_Office 31		100	-	-	187
Bldg B - B1_Office 32		100	-	-	632
Bldg B - B1_Office 33		100	-	-	244
Bldg B - B1_Office 34		100	-	-	786
Bldg B - B1_Office 35		100	-	-	627
Bldg B - B1_Office 36		100	-	-	1277
Bldg B - B1_Office 37		100	-	-	290
Bldg B - B1_Office 38		100	-	-	547
Bldg B - B1_Office 39		100	-	-	526
Bldg B - B1_Office 40		100	-	-	550
Bldg B - B1_Office 41		100	-	-	1155
Bldg B - B1_Office 42		100	-	-	2159
Bldg B - B1_Office 43		100	-	-	781
Bldg B - B1_Office 44		100	-	-	540
Bldg B - B1_Office 45		100	-	-	547
Bldg B - B1_Office 46		100	-	-	483
Bldg B - B1_Office 47		100	-	-	2215
Bldg B - B1_Office 48		100	-	-	187
Bldg B - B1_Office 49		100	-	-	632
Bldg B - B1_Office 50		100	-	-	244
Bldg B - B1_Office 51		100	-	-	786
Bldg B - B1_Office 52		100	-	-	627
Bldg B - B1_Office 53		100	-	-	1277
Bldg B - B1_Office 54		100	-	-	290
Bldg B - B1_Office 55		100	-	-	547
Bldg B - B1_Office 56		100	-	-	526
Bldg B - B1_Office 57		100	-	-	550
Bldg B - B1_Office 58		100	-	-	1155
Bldg B - B1_Office 59		100	-	-	1289
Bldg B - B1_Office 60		100	-	-	781
Bldg B - B1_Office 61		100	-	-	327
Bldg B - B1_Office 62		100	-	-	483
Bldg B - B1_Office 63		100	-	-	542
Bldg B - B1_Office 64		100	-	-	547
Bldg B - B1_Office 65		100	-	-	540
Bldg B - B1_Office 66		100	-	-	2215
Bldg B - B1_Office 67		100	-	-	289
Bldg B - B1_Office 68		100	-	-	550
Bldg B - B1_Office 69		100	-	-	1155
Bldg B - B1_Office 70		100	-	-	998
Bldg B - B1_Office 71		100	-	-	777
Bldg B - B1_Office 72		100	-	-	187
Bldg B - B1_Office 73		100	-	-	632

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg B - B1_Office 74		100	-	-	244
Bldg B - B1_Office 75		100	-	-	786
Bldg B - B1_Office 76		100	-	-	627
Bldg B - B1_Office 77		100	-	-	1277
Bldg B - B1_Office 78		100	-	-	2140
Bldg B - B1_Office 79		100	-	-	540
Bldg B - B1_Office 80		100	-	-	621
Bldg B - B1_Office 81		100	-	-	290
Bldg B - B1_Office 82		100	-	-	547
Bldg B - B1_Office 83		100	-	-	289
Bldg B - B1_Office 84		100	-	-	254
Bldg B - B1_Office 85		100	-	-	289
Bldg B - B1_Office 86		100	-	-	550
Bldg B - B1_Office 87		100	-	-	1155
Bldg B - B1_Office 88		100	-	-	998
Bldg B - B1_Office 89		100	-	-	777
Bldg B - B1_Office 90		100	-	-	187
Bldg B - B1_Office 91		100	-	-	632
Bldg B - B1_Office 92		100	-	-	244
Bldg B - B1_Office 93		100	-	-	786
Bldg B - B1_Office 94		100	-	-	627
Bldg B - B1_Office 95		100	-	-	1277
Bldg B - B1_Office 96		100	-	-	2140
Bldg B - B1_Office 97		100	-	-	540
Bldg B - B1_Office 98		100	-	-	621
Bldg B - B1_Office 99		100	-	-	290
Bldg B - B1_Office 100		100	-	-	547
Bldg C - B1_Office 1		100	-	-	192
Bldg C - B1_Office 2		100	-	-	603
Bldg C - B1_Office 3		100	-	-	206
Bldg C - B1_Office 4		100	-	-	837
Bldg C - B1_Office 5		100	-	-	603
Bldg C - B1_Office 6		100	-	-	158
Bldg C - B1_Office 7		100	-	-	2315
Bldg C - B1_Office 9		100	-	-	570
Bldg C - B1_Office 10		100	-	-	1488
Bldg C - B1_Office 11		100	-	-	542
Bldg C - B1_Office 12		100	-	-	569
Bldg C - B1_Office 13		100	-	-	379
Bldg C - B1_Office 14		100	-	-	192
Bldg C - B1_Office 15		100	-	-	603
Bldg C - B1_Office 16		100	-	-	206
Bldg C - B1_Office 17		100	-	-	837

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Office 18		100	-	-	603
Bldg C - B1_Office 19		100	-	-	158
Bldg C - B1_Office 20		100	-	-	1678
Bldg C - B1_Office 21		100	-	-	1517
Bldg C - B1_Office 22		100	-	-	651
Bldg C - B1_Office 23		100	-	-	549
Bldg C - B1_Office 24		100	-	-	770
Bldg C - B1_Office 25		100	-	-	2070
Bldg C - B1_Office 26		100	-	-	1113
Bldg C - B1_Office 27		100	-	-	569
Bldg C - B1_Office 28		100	-	-	542
Bldg C - B1_Office 29		100	-	-	462
Bldg C - B1_Office 30		100	-	-	570
Bldg C - B1_Office 31		100	-	-	372
Bldg C - B1_Office 32		100	-	-	192
Bldg C - B1_Office 33		100	-	-	603
Bldg C - B1_Office 34		100	-	-	206
Bldg C - B1_Office 35		100	-	-	837
Bldg C - B1_Office 36		100	-	-	603
Bldg C - B1_Office 37		100	-	-	158
Bldg C - B1_Office 38		100	-	-	1678
Bldg C - B1_Office 39		100	-	-	1517
Bldg C - B1_Office 40		100	-	-	549
Bldg C - B1_Office 41		100	-	-	652
Bldg C - B1_Office 42		100	-	-	770
Bldg C - B1_Office 43		100	-	-	2070
Bldg C - B1_Office 44		100	-	-	1113
Bldg C - B1_Office 45		100	-	-	569
Bldg C - B1_Office 46		100	-	-	542
Bldg C - B1_Office 47		100	-	-	461
Bldg C - B1_Office 48		100	-	-	570
Bldg C - B1_Office 49		100	-	-	372
Bldg C - B1_Office 50		100	-	-	192
Bldg C - B1_Office 51		100	-	-	603
Bldg C - B1_Office 52		100	-	-	206
Bldg C - B1_Office 53		100	-	-	837
Bldg C - B1_Office 54		100	-	-	603
Bldg C - B1_Office 55		100	-	-	158
Bldg C - B1_Office 56		100	-	-	1678
Bldg C - B1_Office 57		100	-	-	1517
Bldg C - B1_Office 58		100	-	-	549
Bldg C - B1_Office 59		100	-	-	653
Bldg C - B1_Office 60		100	-	-	770

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Office 61		100	-	-	1312
Bldg C - B1_Office 62		100	-	-	1113
Bldg C - B1_Office 63		100	-	-	569
Bldg C - B1_Office 64		100	-	-	542
Bldg C - B1_Office 65		100	-	-	312
Bldg C - B1_Office 66		100	-	-	462
Bldg C - B1_Office 67		100	-	-	570
Bldg C - B1_Office 68		100	-	-	446
Bldg C - B1_Office 69		100	-	-	372
Bldg C - B1_Office 70		100	-	-	192
Bldg C - B1_Office 71		100	-	-	603
Bldg C - B1_Office 72		100	-	-	206
Bldg C - B1_Office 73		100	-	-	837
Bldg C - B1_Office 74		100	-	-	603
Bldg C - B1_Office 75		100	-	-	158
Bldg C - B1_Office 76		100	-	-	1678
Bldg C - B1_Office 77		100	-	-	1526
Bldg C - B1_Office 78		100	-	-	540
Bldg C - B1_Office 79		100	-	-	666
Bldg C - B1_Office 80		100	-	-	766
Bldg C - B1_Office 81		100	-	-	1031
Bldg C - B1_Office 82		100	-	-	1113
Bldg C - B1_Office 83		100	-	-	569
Bldg C - B1_Office 84		100	-	-	280
Bldg C - B1_Office 85		100	-	-	570
Bldg C - B1_Office 86		100	-	-	289
Bldg C - B1_Office 87		100	-	-	157
Bldg C - B1_Office 88		100	-	-	372
Bldg C - B1_Office 89		100	-	-	192
Bldg C - B1_Office 90		100	-	-	603
Bldg C - B1_Office 91		100	-	-	206
Bldg C - B1_Office 92		100	-	-	837
Bldg C - B1_Office 93		100	-	-	603
Bldg C - B1_Office 94		100	-	-	158
Bldg C - B1_Office 95		100	-	-	1678
Bldg C - B1_Office 96		100	-	-	1526
Bldg C - B1_Office 97		100	-	-	666
Bldg C - B1_Office 98		100	-	-	540
Bldg C - B1_Office 99		100	-	-	766
Bldg C - B1_Office 100		100	-	-	1031
Bldg D - B1_Office 1		100	-	-	321
Bldg D - B1_Office 2		100	-	-	345
Bldg D - B1_Office 3		100	-	-	989

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Office 4		100	-	-	267
Bldg D - B1_Office 5		100	-	-	997
Bldg D - B1_Office 6		100	-	-	375
Bldg D - B1_Office 7		100	-	-	302
Bldg D - B1_Office 8		100	-	-	2070
Bldg D - B1_Office 9		100	-	-	321
Bldg D - B1_Office 10		100	-	-	345
Bldg D - B1_Office 11		100	-	-	1063
Bldg D - B1_Office 12		100	-	-	1070
Bldg D - B1_Office 13		100	-	-	375
Bldg D - B1_Office 14		100	-	-	302
Bldg D - B1_Office 15		100	-	-	2638
Bldg D - B1_Office 16		100	-	-	942
Bldg D - B1_Office 17		100	-	-	321
Bldg D - B1_Office 18		100	-	-	345
Bldg D - B1_Office 19		100	-	-	1063
Bldg D - B1_Office 20		100	-	-	1070
Bldg D - B1_Office 21		100	-	-	375
Bldg D - B1_Office 22		100	-	-	302
Bldg D - B1_Office 23		100	-	-	2638
Bldg D - B1_Office 24		100	-	-	942
Bldg D - B1_Office 25		100	-	-	321
Bldg D - B1_Office 26		100	-	-	345
Bldg D - B1_Office 27		100	-	-	1063
Bldg D - B1_Office 28		100	-	-	1070
Bldg D - B1_Office 29		100	-	-	375
Bldg D - B1_Office 30		100	-	-	302
Bldg D - B1_Office 31		100	-	-	2638
Bldg D - B1_Office 32		100	-	-	942
Bldg D - B1_Office 33		100	-	-	321
Bldg D - B1_Office 34		100	-	-	345
Bldg D - B1_Office 35		100	-	-	1063
Bldg D - B1_Office 36		100	-	-	1070
Bldg D - B1_Office 37		100	-	-	375
Bldg D - B1_Office 38		100	-	-	302
Bldg D - B1_Office 39		100	-	-	2638
Bldg D - B1_Office 40		100	-	-	942
Bldg D - B1_Office 41		100	-	-	321
Bldg D - B1_Office 42		100	-	-	345
Bldg D - B1_Office 43		100	-	-	1063
Bldg D - B1_Office 44		100	-	-	1070
Bldg D - B1_Office 45		100	-	-	375
Bldg D - B1_Office 46		100	-	-	302

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Office 47		100	-	-	2638
Bldg D - B1_Office 48		100	-	-	942
Bldg D - B1_Office 49		100	-	-	321
Bldg D - B1_Office 50		100	-	-	345
Bldg D - B1_Office 51		100	-	-	1063
Bldg D - B1_Office 52		100	-	-	1070
Bldg D - B1_Office 53		100	-	-	375
Bldg D - B1_Office 54		100	-	-	302
Bldg D - B1_Office 55		100	-	-	2638
Bldg D - B1_Office 56		100	-	-	942
Bldg D - B1_Office 57		100	-	-	302
Bldg D - B1_Office 58		100	-	-	375
Bldg D - B1_Office 59		100	-	-	1070
Bldg D - B1_Office 60		100	-	-	1063
Bldg D - B1_Office 61		100	-	-	345
Bldg D - B1_Office 62		100	-	-	321
Bldg D - B1_Office 63		100	-	-	2638
Bldg D - B1_Office 64		100	-	-	942
Bldg D - B1_Office 65		100	-	-	321
Bldg D - B1_Office 66		100	-	-	345
Bldg D - B1_Office 67		100	-	-	1063
Bldg D - B1_Office 68		100	-	-	1070
Bldg D - B1_Office 69		100	-	-	375
Bldg D - B1_Office 70		100	-	-	302
Bldg D - B1_Office 71		100	-	-	2638
Bldg D - B1_Office 72		100	-	-	942
Bldg D - B1_Office 73		100	-	-	321
Bldg D - B1_Office 74		100	-	-	345
Bldg D - B1_Office 75		100	-	-	1063
Bldg D - B1_Office 76		100	-	-	1070
Bldg D - B1_Office 77		100	-	-	375
Bldg D - B1_Office 78		100	-	-	302
Bldg D - B1_Office 79		100	-	-	2638
Bldg D - B1_Office 80		100	-	-	942
Bldg D - B1_Office 81		100	-	-	321
Bldg D - B1_Office 82		100	-	-	345
Bldg D - B1_Office 83		100	-	-	1063
Bldg D - B1_Office 84		100	-	-	1070
Bldg D - B1_Office 85		100	-	-	375
Bldg D - B1_Office 86		100	-	-	302
Bldg D - B1_Office 87		100	-	-	2638
Bldg D - B1_Office 88		100	-	-	942
Bldg D - B1_Office 89		100	-	-	321

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Office 90		100	-	-	345
Bldg D - B1_Office 91		100	-	-	1063
Bldg D - B1_Office 92		100	-	-	1070
Bldg D - B1_Office 93		100	-	-	375
Bldg D - B1_Office 94		100	-	-	302
Bldg D - B1_Office 95		100	-	-	2638
Bldg D - B1_Office 96		100	-	-	940
Bldg D - B1_Office 97		100	-	-	321
Bldg D - B1_Office 98		100	-	-	345
Bldg D - B1_Office 99		100	-	-	886
Bldg D - B1_Office 100		100	-	-	656
Bldg A - B1_Office 101		100	-	-	265
Bldg A - B1_Office 102		100	-	-	197
Bldg A - B1_Office 103		100	-	-	191
Bldg A - B1_Office 104		100	-	-	214
Bldg A - B1_Office 105		100	-	-	257
Bldg A - B1_Office 106		100	-	-	171
Bldg A - B1_Office 107		100	-	-	197
Bldg A - B1_Office 108		100	-	-	253
Bldg A - B1_Office 109		100	-	-	188
Bldg A - B1_Office 110		100	-	-	540
Bldg A - B1_Office 111		100	-	-	196
Bldg A - B1_Office 112		100	-	-	264
Bldg A - B1_Office 113		100	-	-	205
Bldg A - B1_Office 114		100	-	-	155
Bldg A - B1_Office 115		100	-	-	220
Bldg A - B1_Office 116		100	-	-	199
Bldg A - B1_Office 117		100	-	-	159
Bldg A - B1_Office 118		100	-	-	198
Bldg A - B1_Office 119		100	-	-	268
Bldg A - B1_Office 120		100	-	-	199
Bldg A - B1_Office 121		100	-	-	588
Bldg A - B1_Office 122		100	-	-	197
Bldg A - B1_Office 123		100	-	-	265
Bldg A - B1_Office 124		100	-	-	197
Bldg A - B1_Office 125		100	-	-	191
Bldg A - B1_Office 126		100	-	-	214
Bldg A - B1_Office 127		100	-	-	257
Bldg A - B1_Office 128		100	-	-	171
Bldg A - B1_Office 129		100	-	-	197
Bldg A - B1_Office 130		100	-	-	253
Bldg A - B1_Office 131		100	-	-	188
Bldg A - B1_Office 132		100	-	-	540

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg A - B1_Office 133		100	-	-	196
Bldg A - B1_Office 134		100	-	-	264
Bldg A - B1_Office 135		100	-	-	205
Bldg A - B1_Office 136		100	-	-	155
Bldg A - B1_Office 137		100	-	-	220
Bldg A - B1_Office 138		100	-	-	199
Bldg A - B1_Office 139		100	-	-	171
Bldg A - B1_Office 140		100	-	-	197
Bldg A - B1_Office 141		100	-	-	253
Bldg A - B1_Office 142		100	-	-	188
Bldg A - B1_Office 143		100	-	-	540
Bldg A - B1_Office 144		100	-	-	196
Bldg A - B1_Office 145		100	-	-	264
Bldg A - B1_Office 146		100	-	-	205
Bldg A - B1_Office 147		100	-	-	155
Bldg A - B1_Office 148		100	-	-	220
Bldg A - B1_Office 149		100	-	-	199
Bldg A - B1_Office 150		100	-	-	171
Bldg A - B1_Office 151		100	-	-	197
Bldg A - B1_Office 152		100	-	-	253
Bldg A - B1_Office 153		100	-	-	188
Bldg A - B1_Office 154		100	-	-	540
Bldg A - B1_Office 155		100	-	-	196
Bldg A - B1_Office 156		100	-	-	264
Bldg A - B1_Office 157		100	-	-	205
Bldg A - B1_Office 158		100	-	-	155
Bldg A - B1_Office 159		100	-	-	220
Bldg A - B1_Office 160		100	-	-	199
Bldg B - B1_Office 101		100	-	-	289
Bldg B - B1_Office 102		100	-	-	254
Bldg B - B1_Office 103		100	-	-	289
Bldg B - B1_Office 104		100	-	-	550
Bldg B - B1_Office 105		100	-	-	1155
Bldg B - B1_Office 106		100	-	-	998
Bldg B - B1_Office 107		100	-	-	777
Bldg B - B1_Office 108		100	-	-	187
Bldg B - B1_Office 109		100	-	-	632
Bldg B - B1_Office 110		100	-	-	244
Bldg B - B1_Office 111		100	-	-	786
Bldg B - B1_Office 112		100	-	-	627
Bldg B - B1_Office 113		100	-	-	1277
Bldg B - B1_Office 114		100	-	-	2140
Bldg B - B1_Office 115		100	-	-	540

General lighting and display lighting		Luminous efficacy [lm/W]			
Zone name		Luminaire	Lamp	Display lamp	General lighting [W]
	Standard value	60	60	22	
Bldg B - B1_Office 116		100	-	-	621
Bldg B - B1_Office 117		100	-	-	290
Bldg B - B1_Office 118		100	-	-	547
Bldg B - B1_Office 119		100	-	-	289
Bldg B - B1_Office 120		100	-	-	507
Bldg B - B1_Office 121		100	-	-	674
Bldg B - B1_Office 122		100	-	-	678
Bldg B - B1_Office 123		100	-	-	777
Bldg B - B1_Office 124		100	-	-	187
Bldg B - B1_Office 125		100	-	-	632
Bldg B - B1_Office 126		100	-	-	244
Bldg B - B1_Office 127		100	-	-	786
Bldg B - B1_Office 128		100	-	-	627
Bldg B - B1_Office 129		100	-	-	1277
Bldg B - B1_Office 130		100	-	-	2140
Bldg B - B1_Office 131		100	-	-	540
Bldg B - B1_Office 132		100	-	-	621
Bldg B - B1_Office 133		100	-	-	255
Bldg B - B1_Office 134		100	-	-	674
Bldg B - B1_Office 135		100	-	-	678
Bldg B - B1_Office 136		100	-	-	777
Bldg B - B1_Office 137		100	-	-	187
Bldg B - B1_Office 138		100	-	-	632
Bldg B - B1_Office 139		100	-	-	244
Bldg B - B1_Office 140		100	-	-	144
Bldg B - B1_Office 141		100	-	-	642
Bldg B - B1_Office 142		100	-	-	627
Bldg B - B1_Office 143		100	-	-	1277
Bldg B - B1_Office 144		100	-	-	2140
Bldg B - B1_Office 145		100	-	-	540
Bldg B - B1_Office 146		100	-	-	621
Bldg B - B1_Office 147		100	-	-	255
Bldg B - B1_Office 148		100	-	-	674
Bldg B - B1_Office 149		100	-	-	678
Bldg B - B1_Office 150		100	-	-	778
Bldg B - B1_Office 151		100	-	-	187
Bldg B - B1_Office 152		100	-	-	632
Bldg B - B1_Office 153		100	-	-	150
Bldg B - B1_Office 154		100	-	-	244
Bldg B - B1_Office 155		100	-	-	255
Bldg B - B1_Office 156		100	-	-	674
Bldg B - B1_Office 157		100	-	-	678
Bldg B - B1_Office 158		100	-	-	778

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg B - B1_Office 159		100	-	-	187
Bldg B - B1_Office 160		100	-	-	632
Bldg B - B1_Office 161		100	-	-	150
Bldg B - B1_Office 162		100	-	-	244
Bldg B - B1_Office 163		100	-	-	255
Bldg B - B1_Office 164		100	-	-	674
Bldg B - B1_Office 165		100	-	-	678
Bldg B - B1_Office 166		100	-	-	778
Bldg B - B1_Office 167		100	-	-	187
Bldg B - B1_Office 168		100	-	-	632
Bldg B - B1_Office 169		100	-	-	150
Bldg B - B1_Office 170		100	-	-	244
Bldg B - B1_Office 171		100	-	-	255
Bldg B - B1_Office 172		100	-	-	674
Bldg B - B1_Office 173		100	-	-	678
Bldg B - B1_Office 174		100	-	-	778
Bldg B - B1_Office 175		100	-	-	187
Bldg B - B1_Office 176		100	-	-	632
Bldg B - B1_Office 177		100	-	-	150
Bldg B - B1_Office 178		100	-	-	244
Bldg C - B1_Office 101		100	-	-	1113
Bldg C - B1_Office 102		100	-	-	569
Bldg C - B1_Office 103		100	-	-	280
Bldg C - B1_Office 104		100	-	-	289
Bldg C - B1_Office 105		100	-	-	570
Bldg C - B1_Office 106		100	-	-	372
Bldg C - B1_Office 107		100	-	-	157
Bldg C - B1_Office 108		100	-	-	603
Bldg C - B1_Office 109		100	-	-	192
Bldg C - B1_Office 110		100	-	-	206
Bldg C - B1_Office 111		100	-	-	837
Bldg C - B1_Office 112		100	-	-	603
Bldg C - B1_Office 113		100	-	-	158
Bldg C - B1_Office 114		100	-	-	1678
Bldg C - B1_Office 115		100	-	-	1526
Bldg C - B1_Office 116		100	-	-	540
Bldg C - B1_Office 117		100	-	-	666
Bldg C - B1_Office 118		100	-	-	766
Bldg C - B1_Office 119		100	-	-	1031
Bldg C - B1_Office 120		100	-	-	1113
Bldg C - B1_Office 121		100	-	-	569
Bldg C - B1_Office 122		100	-	-	280
Bldg C - B1_Office 123		100	-	-	289

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Office 124		100	-	-	570
Bldg C - B1_Office 125		100	-	-	372
Bldg C - B1_Office 126		100	-	-	157
Bldg C - B1_Office 127		100	-	-	192
Bldg C - B1_Office 128		100	-	-	603
Bldg C - B1_Office 129		100	-	-	206
Bldg C - B1_Office 130		100	-	-	837
Bldg C - B1_Office 131		100	-	-	603
Bldg C - B1_Office 132		100	-	-	158
Bldg C - B1_Office 133		100	-	-	1678
Bldg C - B1_Office 134		100	-	-	1526
Bldg C - B1_Office 135		100	-	-	666
Bldg C - B1_Office 136		100	-	-	540
Bldg C - B1_Office 137		100	-	-	766
Bldg C - B1_Office 138		100	-	-	682
Bldg C - B1_Office 139		100	-	-	609
Bldg C - B1_Office 140		100	-	-	317
Bldg C - B1_Office 141		100	-	-	192
Bldg C - B1_Office 142		100	-	-	603
Bldg C - B1_Office 143		100	-	-	206
Bldg C - B1_Office 144		100	-	-	837
Bldg C - B1_Office 145		100	-	-	603
Bldg C - B1_Office 146		100	-	-	158
Bldg C - B1_Office 147		100	-	-	1678
Bldg C - B1_Office 148		100	-	-	1526
Bldg C - B1_Office 149		100	-	-	666
Bldg C - B1_Office 150		100	-	-	540
Bldg C - B1_Office 151		100	-	-	766
Bldg C - B1_Office 152		100	-	-	682
Bldg C - B1_Office 153		100	-	-	609
Bldg C - B1_Office 154		100	-	-	317
Bldg C - B1_Office 155		100	-	-	192
Bldg C - B1_Office 156		100	-	-	603
Bldg C - B1_Office 157		100	-	-	206
Bldg C - B1_Office 158		100	-	-	178
Bldg C - B1_Office 159		100	-	-	659
Bldg C - B1_Office 160		100	-	-	603
Bldg C - B1_Office 161		100	-	-	158
Bldg C - B1_Office 162		100	-	-	1678
Bldg C - B1_Office 163		100	-	-	1526
Bldg C - B1_Office 164		100	-	-	666
Bldg C - B1_Office 165		100	-	-	540
Bldg C - B1_Office 166		100	-	-	766

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Office 167		100	-	-	682
Bldg C - B1_Office 168		100	-	-	609
Bldg C - B1_Office 169		100	-	-	317
Bldg C - B1_Office 170		100	-	-	192
Bldg C - B1_Office 171		100	-	-	603
Bldg C - B1_Office 172		100	-	-	206
Bldg C - B1_Office 173		100	-	-	178
Bldg C - B1_Office 174		100	-	-	767
Bldg C - B1_Office 175		100	-	-	682
Bldg C - B1_Office 176		100	-	-	609
Bldg C - B1_Office 177		100	-	-	317
Bldg C - B1_Office 178		100	-	-	192
Bldg C - B1_Office 179		100	-	-	603
Bldg C - B1_Office 180		100	-	-	178
Bldg C - B1_Office 181		100	-	-	206
Bldg C - B1_Office 182		100	-	-	767
Bldg C - B1_Office 183		100	-	-	682
Bldg C - B1_Office 184		100	-	-	609
Bldg C - B1_Office 185		100	-	-	317
Bldg C - B1_Office 186		100	-	-	192
Bldg C - B1_Office 187		100	-	-	603
Bldg C - B1_Office 188		100	-	-	178
Bldg C - B1_Office 189		100	-	-	206
Bldg C - B1_Office 190		100	-	-	609
Bldg C - B1_Office 191		100	-	-	682
Bldg C - B1_Office 192		100	-	-	767
Bldg C - B1_Office 193		100	-	-	317
Bldg C - B1_Office 194		100	-	-	192
Bldg C - B1_Office 195		100	-	-	603
Bldg C - B1_Office 196		100	-	-	178
Bldg C - B1_Office 197		100	-	-	206
Bldg C - B1_Office 198		100	-	-	767
Bldg C - B1_Office 199		100	-	-	682
Bldg C - B1_Office 200		100	-	-	609
Bldg C - B1_Office 201		100	-	-	317
Bldg D - B1_Office 101		100	-	-	545
Bldg D - B1_Office 102		100	-	-	1051
Bldg D - B1_Office 103		100	-	-	321
Bldg D - B1_Office 104		100	-	-	345
Bldg D - B1_Office 105		100	-	-	886
Bldg D - B1_Office 106		100	-	-	656
Bldg D - B1_Office 107		100	-	-	545
Bldg D - B1_Office 108		100	-	-	1051

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Office 109		100	-	-	321
Bldg D - B1_Office 110		100	-	-	345
Bldg D - B1_Office 111		100	-	-	886
Bldg D - B1_Office 112		100	-	-	656
Bldg D - B1_Office 113		100	-	-	545
Bldg D - B1_Office 114		100	-	-	1051
Bldg D - B1_Office 115		100	-	-	321
Bldg D - B1_Office 116		100	-	-	345
Bldg D - B1_Office 117		100	-	-	886
Bldg D - B1_Office 118		100	-	-	656
Bldg D - B1_Office 119		100	-	-	545
Bldg D - B1_Office 120		100	-	-	1051
Bldg D - B1_Office 121		100	-	-	321
Bldg D - B1_Office 122		100	-	-	345
Bldg D - B1_Office 123		100	-	-	886
Bldg D - B1_Office 124		100	-	-	656
Bldg D - B1_Office 125		100	-	-	545
Bldg D - B1_Office 126		100	-	-	1051
Bldg D - B1_Office 127		100	-	-	321
Bldg D - B1_Office 128		100	-	-	345
Bldg D - B1_Office 129		100	-	-	886
Bldg D - B1_Office 130		100	-	-	656
Bldg D - B1_Office 131		100	-	-	545
Bldg D - B1_Office 132		100	-	-	1051
Bldg D - B1_Office 133		100	-	-	321
Bldg D - B1_Office 134		100	-	-	345
Bldg D - B1_Office 135		100	-	-	886
Bldg D - B1_Office 136		100	-	-	656
Bldg D - B1_Office 137		100	-	-	545
Bldg D - B1_Office 138		100	-	-	1051
Bldg D - B1_Office 139		100	-	-	321
Bldg D - B1_Office 140		100	-	-	345
Bldg D - B1_Office 141		100	-	-	886
Bldg D - B1_Office 142		100	-	-	656
Bldg D - B1_Office 143		100	-	-	545
Bldg D - B1_Office 144		100	-	-	1051
Bldg D - B1_Office 145		100	-	-	321
Bldg D - B1_Office 146		100	-	-	345
Bldg D - B1_Office 147		100	-	-	886
Bldg D - B1_Office 148		100	-	-	656
Bldg D - B1_Office 149		100	-	-	545
Bldg D - B1_Office 150		100	-	-	1051
Bldg D - B1_Office 151		100	-	-	321

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Office 152		100	-	-	345
Bldg D - B1_Office 153		100	-	-	886
Bldg D - B1_Office 154		100	-	-	656
Bldg D - B1_Office 155		100	-	-	545
Bldg D - B1_Office 156		100	-	-	1051
Bldg D - B1_Office 157		100	-	-	321
Bldg D - B1_Office 158		100	-	-	345
Bldg D - B1_Office 159		100	-	-	886
Bldg D - B1_Office 160		100	-	-	656
Bldg D - B1_Office 161		100	-	-	545
Bldg D - B1_Office 162		100	-	-	1051
Bldg A - B1_Circulation 1 (Stairs)		-	100	-	336
Bldg A - B1_Circulation 2 (Stairs)		-	100	-	266
Bldg A - B1_Circulation 3		-	100	-	35
Bldg A - B1_Circulation 4		-	100	-	36
Bldg A - B1_Circulation 5		-	100	-	46
Bldg A - B1_Circulation 6		-	100	-	35
Bldg A - B1_Circulation 7		-	100	-	36
Bldg A - B1_Circulation 8		-	100	-	44
Bldg A - B1_Circulation 9		-	100	-	46
Bldg A - B1_Circulation 10		-	100	-	35
Bldg A - B1_Circulation 11		-	100	-	36
Bldg A - B1_Circulation 12		-	100	-	44
Bldg A - B1_Circulation 13		-	100	-	46
Bldg A - B1_Circulation 14		-	100	-	35
Bldg A - B1_Circulation 15		-	100	-	36
Bldg A - B1_Circulation 16		-	100	-	44
Bldg A - B1_Circulation 17		-	100	-	46
Bldg A - B1_Circulation 18		-	100	-	35
Bldg A - B1_Circulation 19		-	100	-	36
Bldg A - B1_Circulation 20		-	100	-	44
Bldg A - B1_Circulation 21		-	100	-	46
Bldg A - B1_Circulation 22		-	100	-	35
Bldg A - B1_Circulation 23		-	100	-	36
Bldg A - B1_Circulation 24		-	100	-	90
Bldg A - B1_Circulation 25		-	100	-	35
Bldg A - B1_Circulation 26		-	100	-	36
Bldg A - B1_Circulation 27		-	100	-	44
Bldg A - B1_Circulation 28		-	100	-	46
Bldg A - B1_Circulation 29		-	100	-	35
Bldg A - B1_Circulation 30		-	100	-	36
Bldg A - B1_Circulation 31		-	100	-	44
Bldg A - B1_Circulation 32		-	100	-	46

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg A - B1_Circulation 33		-	100	-	35
Bldg A - B1_Circulation 34		-	100	-	46
Bldg A - B1_Circulation 35		-	100	-	35
Bldg B - B1_Circulation 1 (Stairs)		-	100	-	467
Bldg B - B1_Circulation 2 (Stairs)		-	100	-	491
Bldg B - B1_Circulation 3 (Stairs)		-	100	-	356
Bldg B - B1_Circulation 4 (Stairs)		-	100	-	343
Bldg B - B1_Circulation 5		-	100	-	87
Bldg B - B1_Circulation 6		-	100	-	13
Bldg B - B1_Circulation 7		-	100	-	15
Bldg B - B1_Circulation 8		-	100	-	15
Bldg B - B1_Circulation 9		-	100	-	15
Bldg B - B1_Circulation 10		-	100	-	15
Bldg B - B1_Circulation 11		-	100	-	87
Bldg B - B1_Circulation 12		-	100	-	13
Bldg B - B1_Circulation 13		-	100	-	15
Bldg B - B1_Circulation 14		-	100	-	15
Bldg B - B1_Circulation 15		-	100	-	47
Bldg B - B1_Circulation 16		-	100	-	15
Bldg B - B1_Circulation 17		-	100	-	87
Bldg B - B1_Circulation 18		-	100	-	15
Bldg B - B1_Circulation 19		-	100	-	13
Bldg B - B1_Circulation 20		-	100	-	15
Bldg B - B1_Circulation 21		-	100	-	47
Bldg B - B1_Circulation 22		-	100	-	15
Bldg B - B1_Circulation 23		-	100	-	87
Bldg B - B1_Circulation 24		-	100	-	15
Bldg B - B1_Circulation 25		-	100	-	13
Bldg B - B1_Circulation 26		-	100	-	15
Bldg B - B1_Circulation 27		-	100	-	47
Bldg B - B1_Circulation 28		-	100	-	15
Bldg B - B1_Circulation 29		-	100	-	87
Bldg B - B1_Circulation 30		-	100	-	15
Bldg B - B1_Circulation 31		-	100	-	13
Bldg B - B1_Circulation 32		-	100	-	15
Bldg B - B1_Circulation 33		-	100	-	47
Bldg B - B1_Circulation 34		-	100	-	15
Bldg B - B1_Circulation 35		-	100	-	87
Bldg B - B1_Circulation 36		-	100	-	15
Bldg B - B1_Circulation 37		-	100	-	13
Bldg B - B1_Circulation 38		-	100	-	15
Bldg B - B1_Circulation 39		-	100	-	47
Bldg B - B1_Circulation 40		-	100	-	15

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg B - B1_Circulation 41		-	100	-	87
Bldg B - B1_Circulation 42		-	100	-	15
Bldg B - B1_Circulation 43		-	100	-	13
Bldg B - B1_Circulation 44		-	100	-	15
Bldg B - B1_Circulation 45		-	100	-	46
Bldg B - B1_Circulation 46		-	100	-	15
Bldg B - B1_Circulation 47		-	100	-	87
Bldg B - B1_Circulation 48		-	100	-	15
Bldg B - B1_Circulation 49		-	100	-	13
Bldg B - B1_Circulation 50		-	100	-	15
Bldg B - B1_Circulation 51		-	100	-	46
Bldg B - B1_Circulation 52		-	100	-	15
Bldg B - B1_Circulation 53		-	100	-	88
Bldg B - B1_Circulation 54		-	100	-	15
Bldg B - B1_Circulation 55		-	100	-	13
Bldg B - B1_Circulation 56		-	100	-	15
Bldg B - B1_Circulation 57		-	100	-	88
Bldg B - B1_Circulation 58		-	100	-	15
Bldg B - B1_Circulation 59		-	100	-	13
Bldg B - B1_Circulation 60		-	100	-	15
Bldg B - B1_Circulation 61		-	100	-	88
Bldg B - B1_Circulation 62		-	100	-	15
Bldg B - B1_Circulation 63		-	100	-	13
Bldg B - B1_Circulation 64		-	100	-	15
Bldg B - B1_Circulation 65		-	100	-	88
Bldg B - B1_Circulation 66		-	100	-	15
Bldg B - B1_Circulation 67		-	100	-	13
Bldg B - B1_Circulation 68		-	100	-	102
Bldg C - B1_Circulation 1 (Stairs)		-	100	-	522
Bldg C - B1_Circulation 2 (Stairs)		-	100	-	509
Bldg C - B1_Circulation 3 (Stairs)		-	100	-	392
Bldg C - B1_Circulation 4 (Stairs)		-	100	-	387
Bldg C - B1_Circulation 5		-	100	-	89
Bldg C - B1_Circulation 6		-	100	-	14
Bldg C - B1_Circulation 7		-	100	-	13
Bldg C - B1_Circulation 8		-	100	-	15
Bldg C - B1_Circulation 9		-	100	-	14
Bldg C - B1_Circulation 10		-	100	-	15
Bldg C - B1_Circulation 11		-	100	-	89
Bldg C - B1_Circulation 12		-	100	-	14
Bldg C - B1_Circulation 13		-	100	-	13
Bldg C - B1_Circulation 14		-	100	-	15
Bldg C - B1_Circulation 15		-	100	-	13

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Circulation 16		-	100	-	37
Bldg C - B1_Circulation 17		-	100	-	15
Bldg C - B1_Circulation 18		-	100	-	89
Bldg C - B1_Circulation 19		-	100	-	14
Bldg C - B1_Circulation 20		-	100	-	13
Bldg C - B1_Circulation 21		-	100	-	15
Bldg C - B1_Circulation 22		-	100	-	13
Bldg C - B1_Circulation 23		-	100	-	37
Bldg C - B1_Circulation 24		-	100	-	15
Bldg C - B1_Circulation 25		-	100	-	89
Bldg C - B1_Circulation 26		-	100	-	14
Bldg C - B1_Circulation 27		-	100	-	13
Bldg C - B1_Circulation 28		-	100	-	15
Bldg C - B1_Circulation 29		-	100	-	13
Bldg C - B1_Circulation 30		-	100	-	37
Bldg C - B1_Circulation 31		-	100	-	15
Bldg C - B1_Circulation 32		-	100	-	89
Bldg C - B1_Circulation 33		-	100	-	14
Bldg C - B1_Circulation 34		-	100	-	13
Bldg C - B1_Circulation 35		-	100	-	15
Bldg C - B1_Circulation 36		-	100	-	13
Bldg C - B1_Circulation 37		-	100	-	37
Bldg C - B1_Circulation 38		-	100	-	15
Bldg C - B1_Circulation 39		-	100	-	89
Bldg C - B1_Circulation 40		-	100	-	14
Bldg C - B1_Circulation 41		-	100	-	13
Bldg C - B1_Circulation 42		-	100	-	15
Bldg C - B1_Circulation 43		-	100	-	13
Bldg C - B1_Circulation 44		-	100	-	37
Bldg C - B1_Circulation 45		-	100	-	15
Bldg C - B1_Circulation 46		-	100	-	89
Bldg C - B1_Circulation 47		-	100	-	14
Bldg C - B1_Circulation 48		-	100	-	13
Bldg C - B1_Circulation 49		-	100	-	15
Bldg C - B1_Circulation 50		-	100	-	13
Bldg C - B1_Circulation 51		-	100	-	37
Bldg C - B1_Circulation 52		-	100	-	15
Bldg C - B1_Circulation 53		-	100	-	89
Bldg C - B1_Circulation 54		-	100	-	14
Bldg C - B1_Circulation 55		-	100	-	13
Bldg C - B1_Circulation 56		-	100	-	15
Bldg C - B1_Circulation 57		-	100	-	12
Bldg C - B1_Circulation 58		-	100	-	37

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Circulation 59		-	100	-	15
Bldg C - B1_Circulation 60		-	100	-	89
Bldg C - B1_Circulation 61		-	100	-	14
Bldg C - B1_Circulation 62		-	100	-	13
Bldg C - B1_Circulation 63		-	100	-	15
Bldg C - B1_Circulation 64		-	100	-	12
Bldg C - B1_Circulation 65		-	100	-	37
Bldg C - B1_Circulation 66		-	100	-	15
Bldg C - B1_Circulation 67		-	100	-	89
Bldg C - B1_Circulation 68		-	100	-	14
Bldg C - B1_Circulation 69		-	100	-	13
Bldg C - B1_Circulation 70		-	100	-	15
Bldg C - B1_Circulation 71		-	100	-	12
Bldg C - B1_Circulation 72		-	100	-	37
Bldg C - B1_Circulation 73		-	100	-	15
Bldg C - B1_Circulation 74		-	100	-	88
Bldg C - B1_Circulation 75		-	100	-	14
Bldg C - B1_Circulation 76		-	100	-	13
Bldg C - B1_Circulation 77		-	100	-	15
Bldg C - B1_Circulation 78		-	100	-	88
Bldg C - B1_Circulation 79		-	100	-	14
Bldg C - B1_Circulation 80		-	100	-	13
Bldg C - B1_Circulation 81		-	100	-	15
Bldg C - B1_Circulation 82		-	100	-	88
Bldg C - B1_Circulation 83		-	100	-	14
Bldg C - B1_Circulation 84		-	100	-	13
Bldg C - B1_Circulation 85		-	100	-	15
Bldg C - B1_Circulation 86		-	100	-	88
Bldg C - B1_Circulation 87		-	100	-	14
Bldg C - B1_Circulation 88		-	100	-	13
Bldg C - B1_Circulation 89		-	100	-	15
Bldg D - B1_Circulation 1 (Stairs)		-	100	-	743
Bldg D - B1_Circulation 2 (Stairs)		-	100	-	426
Bldg D - B1_Circulation 3		-	100	-	76
Bldg D - B1_Circulation 4		-	100	-	13
Bldg D - B1_Circulation 5		-	100	-	30
Bldg D - B1_Circulation 6		-	100	-	76
Bldg D - B1_Circulation 7		-	100	-	13
Bldg D - B1_Circulation 8		-	100	-	29
Bldg D - B1_Circulation 9		-	100	-	30
Bldg D - B1_Circulation 10		-	100	-	76
Bldg D - B1_Circulation 11		-	100	-	13
Bldg D - B1_Circulation 12		-	100	-	29

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Circulation 13		-	100	-	30
Bldg D - B1_Circulation 14		-	100	-	76
Bldg D - B1_Circulation 15		-	100	-	13
Bldg D - B1_Circulation 16		-	100	-	29
Bldg D - B1_Circulation 17		-	100	-	30
Bldg D - B1_Circulation 18		-	100	-	76
Bldg D - B1_Circulation 19		-	100	-	13
Bldg D - B1_Circulation 20		-	100	-	29
Bldg D - B1_Circulation 21		-	100	-	30
Bldg D - B1_Circulation 22		-	100	-	76
Bldg D - B1_Circulation 23		-	100	-	13
Bldg D - B1_Circulation 24		-	100	-	29
Bldg D - B1_Circulation 25		-	100	-	30
Bldg D - B1_Circulation 26		-	100	-	76
Bldg D - B1_Circulation 27		-	100	-	13
Bldg D - B1_Circulation 28		-	100	-	29
Bldg D - B1_Circulation 29		-	100	-	30
Bldg D - B1_Circulation 30		-	100	-	76
Bldg D - B1_Circulation 31		-	100	-	13
Bldg D - B1_Circulation 32		-	100	-	29
Bldg D - B1_Circulation 33		-	100	-	30
Bldg D - B1_Circulation 34		-	100	-	76
Bldg D - B1_Circulation 35		-	100	-	13
Bldg D - B1_Circulation 36		-	100	-	29
Bldg D - B1_Circulation 37		-	100	-	30
Bldg D - B1_Circulation 38		-	100	-	76
Bldg D - B1_Circulation 39		-	100	-	13
Bldg D - B1_Circulation 40		-	100	-	29
Bldg D - B1_Circulation 41		-	100	-	30
Bldg D - B1_Circulation 42		-	100	-	76
Bldg D - B1_Circulation 43		-	100	-	13
Bldg D - B1_Circulation 44		-	100	-	29
Bldg D - B1_Circulation 45		-	100	-	30
Bldg D - B1_Circulation 46		-	100	-	76
Bldg D - B1_Circulation 47		-	100	-	13
Bldg D - B1_Circulation 48		-	100	-	29
Bldg D - B1_Circulation 49		-	100	-	30
Bldg D - B1_Circulation 50		-	100	-	76
Bldg D - B1_Circulation 51		-	100	-	13
Bldg D - B1_Circulation 52		-	100	-	29
Bldg D - B1_Circulation 53		-	100	-	76
Bldg D - B1_Circulation 54		-	100	-	13
Bldg D - B1_Circulation 55		-	100	-	29

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Circulation 56		-	100	-	76
Bldg D - B1_Circulation 57		-	100	-	13
Bldg D - B1_Circulation 58		-	100	-	29
Bldg D - B1_Circulation 59		-	100	-	76
Bldg D - B1_Circulation 60		-	100	-	13
Bldg D - B1_Circulation 61		-	100	-	29
Bldg D - B1_Circulation 62		-	100	-	76
Bldg D - B1_Circulation 63		-	100	-	13
Bldg D - B1_Circulation 64		-	100	-	29
Bldg D - B1_Circulation 65		-	100	-	76
Bldg D - B1_Circulation 66		-	100	-	13
Bldg D - B1_Circulation 67		-	100	-	29
Bldg D - B1_Circulation 68		-	100	-	76
Bldg D - B1_Circulation 69		-	100	-	13
Bldg D - B1_Circulation 70		-	100	-	29
Bldg D - B1_Circulation 71		-	100	-	76
Bldg D - B1_Circulation 72		-	100	-	13
Bldg D - B1_Circulation 73		-	100	-	29
Bldg D - B1_Circulation 74		-	100	-	76
Bldg D - B1_Circulation 75		-	100	-	13
Bldg D - B1_Circulation 76		-	100	-	29
Bldg D - B1_Circulation 77		-	100	-	76
Bldg D - B1_Circulation 78		-	100	-	13
Bldg D - B1_Circulation 79		-	100	-	29
Bldg D - B1_Circulation 80		-	100	-	76
Bldg D - B1_Circulation 81		-	100	-	13
Bldg D - B1_Circulation 82		-	100	-	29
Bldg A - B1_Toilet 1		-	100	-	44
Bldg A - B1_Toilet 2		-	100	-	43
Bldg A - B1_Toilet 3		-	100	-	44
Bldg A - B1_Toilet 4		-	100	-	43
Bldg A - B1_Toilet 5		-	100	-	44
Bldg A - B1_Toilet 6		-	100	-	43
Bldg A - B1_Toilet 7		-	100	-	44
Bldg A - B1_Toilet 8		-	100	-	43
Bldg A - B1_Toilet 9		-	100	-	44
Bldg A - B1_Toilet 10		-	100	-	43
Bldg A - B1_Toilet 11		-	100	-	44
Bldg A - B1_Toilet 12		-	100	-	43
Bldg A - B1_Toilet 13		-	100	-	44
Bldg A - B1_Toilet 14		-	100	-	43
Bldg A - B1_Toilet 15		-	100	-	44
Bldg A - B1_Toilet 16		-	100	-	44

General lighting and display lighting		Luminous efficacy [lm/W]			
Zone name		Luminaire	Lamp	Display lamp	General lighting [W]
	Standard value	60	60	22	
Bldg B - B1_Toilet 1		-	100	-	57
Bldg B - B1_Toilet 2		-	100	-	54
Bldg B - B1_Toilet 3		-	100	-	90
Bldg B - B1_Toilet 4		-	100	-	61
Bldg B - B1_Toilet 5		-	100	-	57
Bldg B - B1_Toilet 6		-	100	-	54
Bldg B - B1_Toilet 7		-	100	-	90
Bldg B - B1_Toilet 8		-	100	-	61
Bldg B - B1_Toilet 9		-	100	-	57
Bldg B - B1_Toilet 10		-	100	-	54
Bldg B - B1_Toilet 11		-	100	-	90
Bldg B - B1_Toilet 12		-	100	-	61
Bldg B - B1_Toilet 13		-	100	-	57
Bldg B - B1_Toilet 14		-	100	-	54
Bldg B - B1_Toilet 15		-	100	-	90
Bldg B - B1_Toilet 16		-	100	-	61
Bldg B - B1_Toilet 17		-	100	-	57
Bldg B - B1_Toilet 18		-	100	-	54
Bldg B - B1_Toilet 19		-	100	-	90
Bldg B - B1_Toilet 20		-	100	-	61
Bldg B - B1_Toilet 21		-	100	-	57
Bldg B - B1_Toilet 22		-	100	-	54
Bldg B - B1_Toilet 23		-	100	-	90
Bldg B - B1_Toilet 24		-	100	-	61
Bldg B - B1_Toilet 25		-	100	-	57
Bldg B - B1_Toilet 26		-	100	-	54
Bldg B - B1_Toilet 27		-	100	-	90
Bldg B - B1_Toilet 28		-	100	-	61
Bldg B - B1_Toilet 29		-	100	-	57
Bldg B - B1_Toilet 30		-	100	-	54
Bldg B - B1_Toilet 31		-	100	-	90
Bldg B - B1_Toilet 32		-	100	-	61
Bldg B - B1_Toilet 33		-	100	-	57
Bldg B - B1_Toilet 34		-	100	-	54
Bldg B - B1_Toilet 35		-	100	-	90
Bldg B - B1_Toilet 36		-	100	-	57
Bldg B - B1_Toilet 37		-	100	-	54
Bldg B - B1_Toilet 38		-	100	-	90
Bldg B - B1_Toilet 39		-	100	-	57
Bldg B - B1_Toilet 40		-	100	-	54
Bldg C - B1_Toilet 1		-	100	-	61
Bldg C - B1_Toilet 2		-	100	-	56
Bldg C - B1_Toilet 3		-	100	-	91

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Toilet 4		-	100	-	63
Bldg C - B1_Toilet 5		-	100	-	61
Bldg C - B1_Toilet 6		-	100	-	56
Bldg C - B1_Toilet 7		-	100	-	91
Bldg C - B1_Toilet 8		-	100	-	63
Bldg C - B1_Toilet 9		-	100	-	61
Bldg C - B1_Toilet 10		-	100	-	56
Bldg C - B1_Toilet 11		-	100	-	91
Bldg C - B1_Toilet 12		-	100	-	63
Bldg C - B1_Toilet 13		-	100	-	61
Bldg C - B1_Toilet 14		-	100	-	56
Bldg C - B1_Toilet 15		-	100	-	91
Bldg C - B1_Toilet 16		-	100	-	63
Bldg C - B1_Toilet 17		-	100	-	61
Bldg C - B1_Toilet 18		-	100	-	56
Bldg C - B1_Toilet 19		-	100	-	91
Bldg C - B1_Toilet 20		-	100	-	63
Bldg C - B1_Toilet 21		-	100	-	61
Bldg C - B1_Toilet 22		-	100	-	56
Bldg C - B1_Toilet 23		-	100	-	91
Bldg C - B1_Toilet 24		-	100	-	63
Bldg C - B1_Toilet 25		-	100	-	61
Bldg C - B1_Toilet 26		-	100	-	56
Bldg C - B1_Toilet 27		-	100	-	91
Bldg C - B1_Toilet 28		-	100	-	63
Bldg C - B1_Toilet 29		-	100	-	61
Bldg C - B1_Toilet 30		-	100	-	56
Bldg C - B1_Toilet 31		-	100	-	91
Bldg C - B1_Toilet 32		-	100	-	63
Bldg C - B1_Toilet 33		-	100	-	61
Bldg C - B1_Toilet 34		-	100	-	56
Bldg C - B1_Toilet 35		-	100	-	91
Bldg C - B1_Toilet 36		-	100	-	63
Bldg C - B1_Toilet 37		-	100	-	61
Bldg C - B1_Toilet 38		-	100	-	56
Bldg C - B1_Toilet 39		-	100	-	91
Bldg C - B1_Toilet 40		-	100	-	61
Bldg D - B1_Toilet 1		-	100	-	72
Bldg D - B1_Toilet 2		-	100	-	67
Bldg D - B1_Toilet 3		-	100	-	76
Bldg D - B1_Toilet 4		-	100	-	72
Bldg D - B1_Toilet 5		-	100	-	67
Bldg D - B1_Toilet 6		-	100	-	76

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg D - B1_Toilet 7		-	100	-	72
Bldg D - B1_Toilet 8		-	100	-	67
Bldg D - B1_Toilet 9		-	100	-	76
Bldg D - B1_Toilet 10		-	100	-	72
Bldg D - B1_Toilet 11		-	100	-	67
Bldg D - B1_Toilet 12		-	100	-	76
Bldg D - B1_Toilet 13		-	100	-	72
Bldg D - B1_Toilet 14		-	100	-	67
Bldg D - B1_Toilet 15		-	100	-	76
Bldg D - B1_Toilet 16		-	100	-	72
Bldg D - B1_Toilet 17		-	100	-	67
Bldg D - B1_Toilet 18		-	100	-	76
Bldg D - B1_Toilet 19		-	100	-	72
Bldg D - B1_Toilet 20		-	100	-	67
Bldg D - B1_Toilet 21		-	100	-	76
Bldg D - B1_Toilet 22		-	100	-	72
Bldg D - B1_Toilet 23		-	100	-	67
Bldg D - B1_Toilet 24		-	100	-	76
Bldg D - B1_Toilet 25		-	100	-	72
Bldg D - B1_Toilet 26		-	100	-	67
Bldg D - B1_Toilet 27		-	100	-	76
Bldg D - B1_Toilet 28		-	100	-	72
Bldg D - B1_Toilet 29		-	100	-	67
Bldg D - B1_Toilet 30		-	100	-	76
Bldg D - B1_Toilet 31		-	100	-	72
Bldg D - B1_Toilet 32		-	100	-	67
Bldg D - B1_Toilet 33		-	100	-	76
Bldg D - B1_Toilet 34		-	100	-	72
Bldg D - B1_Toilet 35		-	100	-	67
Bldg D - B1_Toilet 36		-	100	-	76
Bldg D - B1_Toilet 37		-	100	-	67
Bldg D - B1_Toilet 38		-	100	-	76
Bldg D - B1_Toilet 39		-	100	-	67
Bldg D - B1_Toilet 40		-	100	-	76
Bldg B - B1_Toilet 41		-	100	-	90
Bldg B - B1_Toilet 42		-	100	-	57
Bldg B - B1_Toilet 43		-	100	-	54
Bldg B - B1_Toilet 44		-	100	-	90
Bldg B - B1_Circulation 101		-	100	-	15
Bldg B - B1_Circulation 102		-	100	-	13
Bldg B - B1_Circulation 103		-	100	-	15
Bldg B - B1_Circulation 104		-	100	-	47
Bldg B - B1_Circulation 105		-	100	-	15

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
Bldg C - B1_Toilet 41		-	100	-	56
Bldg C - B1_Toilet 42		-	100	-	91
Bldg C - B1_Toilet 43		-	100	-	61
Bldg C - B1_Toilet 44		-	100	-	56
Bldg C - B1_Toilet 45		-	100	-	91
Bldg C - B1_Toilet 46		-	100	-	61
Bldg C - B1_Toilet 47		-	100	-	56
Bldg C - B1_Toilet 48		-	100	-	91
Bldg D - B1_Toilet 41		-	100	-	67
Bldg D - B1_Toilet 42		-	100	-	76
Bldg D - B1_Toilet 43		-	100	-	67
Bldg D - B1_Toilet 44		-	100	-	76
Bldg D - B1_Toilet 45		-	100	-	67
Bldg D - B1_Toilet 46		-	100	-	76
Bldg D - B1_Toilet 47		-	100	-	67
Bldg D - B1_Toilet 48		-	100	-	76
Bldg D - B1_Toilet 49		-	100	-	67
Bldg D - B1_Toilet 50		-	100	-	76
Bldg D - B1_Toilet 51		-	100	-	67
Bldg D - B1_Toilet 52		-	100	-	76
Bldg D - B1_Toilet 53		-	100	-	67
Bldg D - B1_Toilet 54		-	100	-	76
Bldg D - B1_Toilet 55		-	100	-	67
Bldg D - B1_Toilet 56		-	100	-	76
Bldg A - B1_Store (Refuse) 1		100	-	-	82
Bldg B - B1_Store (Refuse) 1		100	-	-	131
Bldg C - B1_Store (Refuse) 1		100	-	-	127
Bldg D - B1_Store (Refuse) 1		100	-	-	128
Bldg A - B1_Plant 1		100	-	-	911
Bldg B - B1_Plant 1		100	-	-	234
Bldg B - B1_Plant 2		100	-	-	329
Bldg C - B1_Plant 1		100	-	-	334
Bldg C - B1_Plant 2		100	-	-	328
Bldg D - B1_Plant 1		100	-	-	1122

Criterion 3: The spaces in the building should have appropriate passive control measures to limit solar gains

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg A - B1_Office 1	NO (-39%)	NO
Bldg A - B1_Office 2	NO (-24%)	NO
Bldg A - B1_Office 3	NO (-19%)	NO
Bldg A - B1_Office 4	YES (+2%)	NO
Bldg A - B1_Office 5	NO (-18%)	NO
Bldg A - B1_Office 6	NO (-36%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg A - B1_Office 7	NO (-32%)	NO
Bldg A - B1_Office 8	NO (-35%)	NO
Bldg A - B1_Office 9	NO (-84%)	NO
Bldg A - B1_Office 10	NO (-22%)	NO
Bldg A - B1_Office 11	NO (-39%)	NO
Bldg A - B1_Office 12	NO (-37%)	NO
Bldg A - B1_Office 13	NO (-42%)	NO
Bldg A - B1_Office 14	NO (-24%)	NO
Bldg A - B1_Office 15	NO (-21%)	NO
Bldg A - B1_Office 16	YES (+16%)	NO
Bldg A - B1_Office 17	YES (+2%)	NO
Bldg A - B1_Office 18	NO (-20%)	NO
Bldg A - B1_Office 19	NO (-35%)	NO
Bldg A - B1_Office 20	NO (-32%)	NO
Bldg A - B1_Office 21	NO (-38%)	NO
Bldg A - B1_Office 22	NO (-84%)	NO
Bldg A - B1_Office 23	NO (-21%)	NO
Bldg A - B1_Office 24	NO (-38%)	NO
Bldg A - B1_Office 25	NO (-34%)	NO
Bldg A - B1_Office 26	NO (-41%)	NO
Bldg A - B1_Office 27	NO (-25%)	NO
Bldg A - B1_Office 28	NO (-21%)	NO
Bldg A - B1_Office 29	YES (+16%)	NO
Bldg A - B1_Office 30	YES (+2%)	NO
Bldg A - B1_Office 31	NO (-20%)	NO
Bldg A - B1_Office 32	NO (-36%)	NO
Bldg A - B1_Office 33	NO (-31%)	NO
Bldg A - B1_Office 34	NO (-37%)	NO
Bldg A - B1_Office 35	NO (-83%)	NO
Bldg A - B1_Office 36	NO (-17%)	NO
Bldg A - B1_Office 37	NO (-36%)	NO
Bldg A - B1_Office 38	NO (-34%)	NO
Bldg A - B1_Office 39	NO (-41%)	NO
Bldg A - B1_Office 40	NO (-25%)	NO
Bldg A - B1_Office 41	NO (-22%)	NO
Bldg A - B1_Office 42	NO (-21%)	NO
Bldg A - B1_Office 43	YES (+16%)	NO
Bldg A - B1_Office 44	YES (+2%)	NO
Bldg A - B1_Office 45	NO (-19%)	NO
Bldg A - B1_Office 46	NO (-30%)	NO
Bldg A - B1_Office 47	NO (-37%)	NO
Bldg A - B1_Office 48	NO (-31%)	NO
Bldg A - B1_Office 49	NO (-36%)	NO
Bldg A - B1_Office 50	NO (-84%)	NO
Bldg A - B1_Office 51	NO (-8%)	NO
Bldg A - B1_Office 52	NO (-33%)	NO
Bldg A - B1_Office 53	NO (-24%)	NO
Bldg A - B1_Office 54	NO (-28%)	NO
Bldg A - B1_Office 55	NO (-17%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg A - B1_Office 56	NO (-36%)	NO
Bldg A - B1_Office 57	NO (-16%)	NO
Bldg A - B1_Office 58	NO (-33%)	NO
Bldg A - B1_Office 59	NO (-28%)	NO
Bldg A - B1_Office 60	NO (-66%)	NO
Bldg A - B1_Office 61	NO (-57%)	NO
Bldg A - B1_Office 62	YES (+4%)	NO
Bldg A - B1_Office 63	NO (-18%)	NO
Bldg A - B1_Office 64	NO (-22%)	NO
Bldg A - B1_Office 65	NO (-39%)	NO
Bldg A - B1_Office 66	NO (-34%)	NO
Bldg A - B1_Office 67	NO (-32%)	NO
Bldg A - B1_Office 68	NO (-15%)	NO
Bldg A - B1_Office 69	NO (-21%)	NO
Bldg A - B1_Office 70	YES (+18%)	NO
Bldg A - B1_Office 71	NO (-67%)	NO
Bldg A - B1_Office 72	NO (-56%)	NO
Bldg A - B1_Office 73	NO (-1%)	NO
Bldg A - B1_Office 74	NO (-31%)	NO
Bldg A - B1_Office 75	NO (-24%)	NO
Bldg A - B1_Office 76	NO (-27%)	NO
Bldg A - B1_Office 77	NO (-16%)	NO
Bldg A - B1_Office 78	NO (-35%)	NO
Bldg A - B1_Office 79	NO (-14%)	NO
Bldg A - B1_Office 80	NO (-31%)	NO
Bldg A - B1_Office 81	NO (-25%)	NO
Bldg A - B1_Office 82	NO (-56%)	NO
Bldg A - B1_Office 83	NO (-65%)	NO
Bldg A - B1_Office 84	YES (+4%)	NO
Bldg A - B1_Office 85	NO (-17%)	NO
Bldg A - B1_Office 86	NO (-19%)	NO
Bldg A - B1_Office 87	NO (-37%)	NO
Bldg A - B1_Office 88	NO (-33%)	NO
Bldg A - B1_Office 89	NO (-31%)	NO
Bldg A - B1_Office 90	NO (-15%)	NO
Bldg A - B1_Office 91	NO (-21%)	NO
Bldg A - B1_Office 92	YES (+18%)	NO
Bldg A - B1_Office 93	NO (-66%)	NO
Bldg A - B1_Office 94	NO (-56%)	NO
Bldg A - B1_Office 95	YES (+5%)	NO
Bldg A - B1_Office 96	NO (-29%)	NO
Bldg A - B1_Office 97	NO (-23%)	NO
Bldg A - B1_Office 98	NO (-27%)	NO
Bldg A - B1_Office 99	NO (-14%)	NO
Bldg A - B1_Office 100	NO (-33%)	NO
Bldg B - B1_Office 1	NO (-15%)	NO
Bldg B - B1_Office 2	NO (-14%)	NO
Bldg B - B1_Office 3	NO (-16%)	NO
Bldg B - B1_Office 4	NO (-15%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg B - B1_Office 5	NO (-52%)	NO
Bldg B - B1_Office 6	NO (-71%)	NO
Bldg B - B1_Office 7	NO (-65%)	NO
Bldg B - B1_Office 8	NO (-34%)	NO
Bldg B - B1_Office 9	NO (-36%)	NO
Bldg B - B1_Office 10	NO (-46%)	NO
Bldg B - B1_Office 11	NO (-36%)	NO
Bldg B - B1_Office 12	NO (-52%)	NO
Bldg B - B1_Office 13	NO (-49%)	NO
Bldg B - B1_Office 14	NO (-12%)	NO
Bldg B - B1_Office 15	NO (-14%)	NO
Bldg B - B1_Office 16	NO (-63%)	NO
Bldg B - B1_Office 17	NO (-15%)	NO
Bldg B - B1_Office 18	NO (-15%)	NO
Bldg B - B1_Office 19	NO (-40%)	NO
Bldg B - B1_Office 20	NO (-23%)	NO
Bldg B - B1_Office 21	NO (-36%)	NO
Bldg B - B1_Office 22	NO (-45%)	NO
Bldg B - B1_Office 23	NO (-36%)	NO
Bldg B - B1_Office 24	NO (-38%)	NO
Bldg B - B1_Office 25	NO (-73%)	NO
Bldg B - B1_Office 26	NO (-41%)	NO
Bldg B - B1_Office 27	NO (-46%)	NO
Bldg B - B1_Office 28	NO (-49%)	NO
Bldg B - B1_Office 29	NO (-51%)	NO
Bldg B - B1_Office 30	NO (-79%)	NO
Bldg B - B1_Office 31	NO (-12%)	NO
Bldg B - B1_Office 32	NO (-14%)	NO
Bldg B - B1_Office 33	NO (-63%)	NO
Bldg B - B1_Office 34	NO (-15%)	NO
Bldg B - B1_Office 35	NO (-15%)	NO
Bldg B - B1_Office 36	NO (-39%)	NO
Bldg B - B1_Office 37	NO (-21%)	NO
Bldg B - B1_Office 38	NO (-36%)	NO
Bldg B - B1_Office 39	NO (-46%)	NO
Bldg B - B1_Office 40	NO (-35%)	NO
Bldg B - B1_Office 41	NO (-35%)	NO
Bldg B - B1_Office 42	NO (-75%)	NO
Bldg B - B1_Office 43	NO (-38%)	NO
Bldg B - B1_Office 44	NO (-48%)	NO
Bldg B - B1_Office 45	NO (-49%)	NO
Bldg B - B1_Office 46	NO (-43%)	NO
Bldg B - B1_Office 47	NO (-80%)	NO
Bldg B - B1_Office 48	NO (-12%)	NO
Bldg B - B1_Office 49	NO (-14%)	NO
Bldg B - B1_Office 50	NO (-63%)	NO
Bldg B - B1_Office 51	NO (-15%)	NO
Bldg B - B1_Office 52	NO (-15%)	NO
Bldg B - B1_Office 53	NO (-39%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg B - B1_Office 54	NO (-16%)	NO
Bldg B - B1_Office 55	NO (-35%)	NO
Bldg B - B1_Office 56	NO (-45%)	NO
Bldg B - B1_Office 57	NO (-34%)	NO
Bldg B - B1_Office 58	NO (-34%)	NO
Bldg B - B1_Office 59	NO (-77%)	NO
Bldg B - B1_Office 60	NO (-37%)	NO
Bldg B - B1_Office 61	NO (-71%)	NO
Bldg B - B1_Office 62	NO (-40%)	NO
Bldg B - B1_Office 63	NO (-72%)	NO
Bldg B - B1_Office 64	NO (-49%)	NO
Bldg B - B1_Office 65	NO (-48%)	NO
Bldg B - B1_Office 66	NO (-80%)	NO
Bldg B - B1_Office 67	NO (-13%)	NO
Bldg B - B1_Office 68	NO (-31%)	NO
Bldg B - B1_Office 69	NO (-32%)	NO
Bldg B - B1_Office 70	NO (-74%)	NO
Bldg B - B1_Office 71	NO (-35%)	NO
Bldg B - B1_Office 72	NO (-12%)	NO
Bldg B - B1_Office 73	NO (-14%)	NO
Bldg B - B1_Office 74	NO (-63%)	NO
Bldg B - B1_Office 75	NO (-15%)	NO
Bldg B - B1_Office 76	NO (-15%)	NO
Bldg B - B1_Office 77	NO (-38%)	NO
Bldg B - B1_Office 78	NO (-80%)	NO
Bldg B - B1_Office 79	NO (-47%)	NO
Bldg B - B1_Office 80	NO (-47%)	NO
Bldg B - B1_Office 81	NO (-10%)	NO
Bldg B - B1_Office 82	NO (-32%)	NO
Bldg B - B1_Office 83	NO (-31%)	NO
Bldg B - B1_Office 84	NO (-61%)	NO
Bldg B - B1_Office 85	NO (-4%)	NO
Bldg B - B1_Office 86	NO (-28%)	NO
Bldg B - B1_Office 87	NO (-30%)	NO
Bldg B - B1_Office 88	NO (-72%)	NO
Bldg B - B1_Office 89	NO (-29%)	NO
Bldg B - B1_Office 90	NO (-12%)	NO
Bldg B - B1_Office 91	NO (-13%)	NO
Bldg B - B1_Office 92	NO (-63%)	NO
Bldg B - B1_Office 93	NO (-14%)	NO
Bldg B - B1_Office 94	NO (-15%)	NO
Bldg B - B1_Office 95	NO (-37%)	NO
Bldg B - B1_Office 96	NO (-80%)	NO
Bldg B - B1_Office 97	NO (-47%)	NO
Bldg B - B1_Office 98	NO (-45%)	NO
Bldg B - B1_Office 99	NO (-7%)	NO
Bldg B - B1_Office 100	NO (-32%)	NO
Bldg C - B1_Office 1	NO (-15%)	NO
Bldg C - B1_Office 2	NO (-14%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg C - B1_Office 3	NO (-64%)	NO
Bldg C - B1_Office 4	NO (-14%)	NO
Bldg C - B1_Office 5	NO (-15%)	NO
Bldg C - B1_Office 6	NO (-63%)	NO
Bldg C - B1_Office 7	NO (-51%)	NO
Bldg C - B1_Office 9	NO (-36%)	NO
Bldg C - B1_Office 10	NO (-50%)	NO
Bldg C - B1_Office 11	NO (-46%)	NO
Bldg C - B1_Office 12	NO (-36%)	NO
Bldg C - B1_Office 13	NO (-36%)	NO
Bldg C - B1_Office 14	NO (-14%)	NO
Bldg C - B1_Office 15	NO (-15%)	NO
Bldg C - B1_Office 16	NO (-63%)	NO
Bldg C - B1_Office 17	NO (-13%)	NO
Bldg C - B1_Office 18	NO (-16%)	NO
Bldg C - B1_Office 19	NO (-63%)	NO
Bldg C - B1_Office 20	NO (-36%)	NO
Bldg C - B1_Office 21	NO (-91%)	NO
Bldg C - B1_Office 22	NO (-98%)	NO
Bldg C - B1_Office 23	NO (-98%)	NO
Bldg C - B1_Office 24	NO (-96%)	NO
Bldg C - B1_Office 25	NO (-80%)	NO
Bldg C - B1_Office 26	NO (-43%)	NO
Bldg C - B1_Office 27	NO (-36%)	NO
Bldg C - B1_Office 28	NO (-46%)	NO
Bldg C - B1_Office 29	NO (-95%)	NO
Bldg C - B1_Office 30	NO (-36%)	NO
Bldg C - B1_Office 31	NO (-15%)	NO
Bldg C - B1_Office 32	NO (-14%)	NO
Bldg C - B1_Office 33	NO (-15%)	NO
Bldg C - B1_Office 34	NO (-63%)	NO
Bldg C - B1_Office 35	NO (-13%)	NO
Bldg C - B1_Office 36	NO (-16%)	NO
Bldg C - B1_Office 37	NO (-63%)	NO
Bldg C - B1_Office 38	NO (-36%)	NO
Bldg C - B1_Office 39	NO (-91%)	NO
Bldg C - B1_Office 40	NO (-98%)	NO
Bldg C - B1_Office 41	NO (-98%)	NO
Bldg C - B1_Office 42	NO (-97%)	NO
Bldg C - B1_Office 43	NO (-81%)	NO
Bldg C - B1_Office 44	NO (-41%)	NO
Bldg C - B1_Office 45	NO (-36%)	NO
Bldg C - B1_Office 46	NO (-47%)	NO
Bldg C - B1_Office 47	NO (-95%)	NO
Bldg C - B1_Office 48	NO (-36%)	NO
Bldg C - B1_Office 49	NO (-15%)	NO
Bldg C - B1_Office 50	NO (-14%)	NO
Bldg C - B1_Office 51	NO (-15%)	NO
Bldg C - B1_Office 52	NO (-63%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg C - B1_Office 53	NO (-13%)	NO
Bldg C - B1_Office 54	NO (-16%)	NO
Bldg C - B1_Office 55	NO (-63%)	NO
Bldg C - B1_Office 56	NO (-36%)	NO
Bldg C - B1_Office 57	NO (-91%)	NO
Bldg C - B1_Office 58	NO (-98%)	NO
Bldg C - B1_Office 59	NO (-98%)	NO
Bldg C - B1_Office 60	NO (-96%)	NO
Bldg C - B1_Office 61	NO (-82%)	NO
Bldg C - B1_Office 62	NO (-39%)	NO
Bldg C - B1_Office 63	NO (-34%)	NO
Bldg C - B1_Office 64	NO (-47%)	NO
Bldg C - B1_Office 65	NO (-85%)	NO
Bldg C - B1_Office 66	NO (-95%)	NO
Bldg C - B1_Office 67	NO (-36%)	NO
Bldg C - B1_Office 68	NO (-74%)	NO
Bldg C - B1_Office 69	NO (-14%)	NO
Bldg C - B1_Office 70	NO (-14%)	NO
Bldg C - B1_Office 71	NO (-15%)	NO
Bldg C - B1_Office 72	NO (-62%)	NO
Bldg C - B1_Office 73	NO (-12%)	NO
Bldg C - B1_Office 74	NO (-16%)	NO
Bldg C - B1_Office 75	NO (-63%)	NO
Bldg C - B1_Office 76	NO (-35%)	NO
Bldg C - B1_Office 77	NO (-82%)	NO
Bldg C - B1_Office 78	NO (-47%)	NO
Bldg C - B1_Office 79	NO (-45%)	NO
Bldg C - B1_Office 80	NO (-38%)	NO
Bldg C - B1_Office 81	NO (-74%)	NO
Bldg C - B1_Office 82	NO (-37%)	NO
Bldg C - B1_Office 83	NO (-31%)	NO
Bldg C - B1_Office 84	NO (-15%)	NO
Bldg C - B1_Office 85	NO (-34%)	NO
Bldg C - B1_Office 86	NO (-31%)	NO
Bldg C - B1_Office 87	NO (-60%)	NO
Bldg C - B1_Office 88	NO (-11%)	NO
Bldg C - B1_Office 89	NO (-14%)	NO
Bldg C - B1_Office 90	NO (-15%)	NO
Bldg C - B1_Office 91	NO (-62%)	NO
Bldg C - B1_Office 92	NO (-12%)	NO
Bldg C - B1_Office 93	NO (-16%)	NO
Bldg C - B1_Office 94	NO (-63%)	NO
Bldg C - B1_Office 95	NO (-35%)	NO
Bldg C - B1_Office 96	NO (-82%)	NO
Bldg C - B1_Office 97	NO (-45%)	NO
Bldg C - B1_Office 98	NO (-47%)	NO
Bldg C - B1_Office 99	NO (-34%)	NO
Bldg C - B1_Office 100	NO (-73%)	NO
Bldg D - B1_Office 1	YES (+2%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg D - B1_Office 2	YES (+1%)	NO
Bldg D - B1_Office 3	NO (-25%)	NO
Bldg D - B1_Office 4	NO (-46%)	NO
Bldg D - B1_Office 5	NO (-38%)	NO
Bldg D - B1_Office 6	NO (-32%)	NO
Bldg D - B1_Office 7	NO (-15%)	NO
Bldg D - B1_Office 8	NO (-77%)	NO
Bldg D - B1_Office 9	YES (+1%)	NO
Bldg D - B1_Office 10	YES (+2%)	NO
Bldg D - B1_Office 11	NO (-29%)	NO
Bldg D - B1_Office 12	NO (-40%)	NO
Bldg D - B1_Office 13	NO (-31%)	NO
Bldg D - B1_Office 14	NO (-15%)	NO
Bldg D - B1_Office 15	NO (-72%)	NO
Bldg D - B1_Office 16	NO (-9%)	NO
Bldg D - B1_Office 17	YES (+1%)	NO
Bldg D - B1_Office 18	YES (+1%)	NO
Bldg D - B1_Office 19	NO (-29%)	NO
Bldg D - B1_Office 20	NO (-38%)	NO
Bldg D - B1_Office 21	NO (-31%)	NO
Bldg D - B1_Office 22	NO (-15%)	NO
Bldg D - B1_Office 23	NO (-73%)	NO
Bldg D - B1_Office 24	NO (-8%)	NO
Bldg D - B1_Office 25	YES (+1%)	NO
Bldg D - B1_Office 26	YES (+1%)	NO
Bldg D - B1_Office 27	NO (-29%)	NO
Bldg D - B1_Office 28	NO (-37%)	NO
Bldg D - B1_Office 29	NO (-31%)	NO
Bldg D - B1_Office 30	NO (-15%)	NO
Bldg D - B1_Office 31	NO (-73%)	NO
Bldg D - B1_Office 32	NO (-8%)	NO
Bldg D - B1_Office 33	YES (+1%)	NO
Bldg D - B1_Office 34	YES (+1%)	NO
Bldg D - B1_Office 35	NO (-29%)	NO
Bldg D - B1_Office 36	NO (-36%)	NO
Bldg D - B1_Office 37	NO (-31%)	NO
Bldg D - B1_Office 38	NO (-15%)	NO
Bldg D - B1_Office 39	NO (-73%)	NO
Bldg D - B1_Office 40	NO (-8%)	NO
Bldg D - B1_Office 41	YES (+1%)	NO
Bldg D - B1_Office 42	YES (+1%)	NO
Bldg D - B1_Office 43	NO (-29%)	NO
Bldg D - B1_Office 44	NO (-34%)	NO
Bldg D - B1_Office 45	NO (-31%)	NO
Bldg D - B1_Office 46	NO (-15%)	NO
Bldg D - B1_Office 47	NO (-72%)	NO
Bldg D - B1_Office 48	NO (-8%)	NO
Bldg D - B1_Office 49	YES (+1%)	NO
Bldg D - B1_Office 50	YES (+1%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg D - B1_Office 51	NO (-28%)	NO
Bldg D - B1_Office 52	NO (-32%)	NO
Bldg D - B1_Office 53	NO (-31%)	NO
Bldg D - B1_Office 54	NO (-15%)	NO
Bldg D - B1_Office 55	NO (-72%)	NO
Bldg D - B1_Office 56	NO (-8%)	NO
Bldg D - B1_Office 57	NO (-15%)	NO
Bldg D - B1_Office 58	NO (-30%)	NO
Bldg D - B1_Office 59	NO (-29%)	NO
Bldg D - B1_Office 60	NO (-28%)	NO
Bldg D - B1_Office 61	YES (+2%)	NO
Bldg D - B1_Office 62	YES (+1%)	NO
Bldg D - B1_Office 63	NO (-71%)	NO
Bldg D - B1_Office 64	NO (-8%)	NO
Bldg D - B1_Office 65	YES (+1%)	NO
Bldg D - B1_Office 66	YES (+2%)	NO
Bldg D - B1_Office 67	NO (-27%)	NO
Bldg D - B1_Office 68	NO (-27%)	NO
Bldg D - B1_Office 69	NO (-30%)	NO
Bldg D - B1_Office 70	NO (-15%)	NO
Bldg D - B1_Office 71	NO (-70%)	NO
Bldg D - B1_Office 72	NO (-8%)	NO
Bldg D - B1_Office 73	YES (+1%)	NO
Bldg D - B1_Office 74	YES (+2%)	NO
Bldg D - B1_Office 75	NO (-27%)	NO
Bldg D - B1_Office 76	NO (-26%)	NO
Bldg D - B1_Office 77	NO (-29%)	NO
Bldg D - B1_Office 78	NO (-15%)	NO
Bldg D - B1_Office 79	NO (-69%)	NO
Bldg D - B1_Office 80	NO (-8%)	NO
Bldg D - B1_Office 81	YES (+1%)	NO
Bldg D - B1_Office 82	YES (+2%)	NO
Bldg D - B1_Office 83	NO (-26%)	NO
Bldg D - B1_Office 84	NO (-25%)	NO
Bldg D - B1_Office 85	NO (-28%)	NO
Bldg D - B1_Office 86	NO (-15%)	NO
Bldg D - B1_Office 87	NO (-68%)	NO
Bldg D - B1_Office 88	NO (-7%)	NO
Bldg D - B1_Office 89	YES (+1%)	NO
Bldg D - B1_Office 90	YES (+2%)	NO
Bldg D - B1_Office 91	NO (-25%)	NO
Bldg D - B1_Office 92	NO (-24%)	NO
Bldg D - B1_Office 93	NO (-27%)	NO
Bldg D - B1_Office 94	NO (-15%)	NO
Bldg D - B1_Office 95	NO (-68%)	NO
Bldg D - B1_Office 96	NO (-8%)	NO
Bldg D - B1_Office 97	YES (+2%)	NO
Bldg D - B1_Office 98	YES (+2%)	NO
Bldg D - B1_Office 99	NO (-19%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg D - B1_Office 100	NO (-32%)	NO
Bldg A - B1_Office 101	NO (-12%)	NO
Bldg A - B1_Office 102	NO (-27%)	NO
Bldg A - B1_Office 103	NO (-22%)	NO
Bldg A - B1_Office 104	NO (-54%)	NO
Bldg A - B1_Office 105	NO (-65%)	NO
Bldg A - B1_Office 106	YES (+4%)	NO
Bldg A - B1_Office 107	NO (-16%)	NO
Bldg A - B1_Office 108	NO (-16%)	NO
Bldg A - B1_Office 109	NO (-36%)	NO
Bldg A - B1_Office 110	NO (-32%)	NO
Bldg A - B1_Office 111	NO (-29%)	NO
Bldg A - B1_Office 112	NO (-14%)	NO
Bldg A - B1_Office 113	NO (-20%)	NO
Bldg A - B1_Office 114	YES (+18%)	NO
Bldg A - B1_Office 115	NO (-66%)	NO
Bldg A - B1_Office 116	NO (-56%)	NO
Bldg A - B1_Office 117	YES (+7%)	NO
Bldg A - B1_Office 118	NO (-28%)	NO
Bldg A - B1_Office 119	NO (-23%)	NO
Bldg A - B1_Office 120	NO (-27%)	NO
Bldg A - B1_Office 121	NO (-12%)	NO
Bldg A - B1_Office 122	NO (-28%)	NO
Bldg A - B1_Office 123	NO (-6%)	NO
Bldg A - B1_Office 124	NO (-24%)	NO
Bldg A - B1_Office 125	NO (-19%)	NO
Bldg A - B1_Office 126	NO (-54%)	NO
Bldg A - B1_Office 127	NO (-64%)	NO
Bldg A - B1_Office 128	YES (+7%)	NO
Bldg A - B1_Office 129	NO (-14%)	NO
Bldg A - B1_Office 130	NO (-11%)	NO
Bldg A - B1_Office 131	NO (-32%)	NO
Bldg A - B1_Office 132	NO (-27%)	NO
Bldg A - B1_Office 133	NO (-27%)	NO
Bldg A - B1_Office 134	NO (-13%)	NO
Bldg A - B1_Office 135	NO (-20%)	NO
Bldg A - B1_Office 136	YES (+18%)	NO
Bldg A - B1_Office 137	NO (-62%)	NO
Bldg A - B1_Office 138	NO (-55%)	NO
Bldg A - B1_Office 139	YES (+9%)	NO
Bldg A - B1_Office 140	NO (-12%)	NO
Bldg A - B1_Office 141	NO (-8%)	NO
Bldg A - B1_Office 142	NO (-30%)	NO
Bldg A - B1_Office 143	NO (-26%)	NO
Bldg A - B1_Office 144	NO (-27%)	NO
Bldg A - B1_Office 145	NO (-12%)	NO
Bldg A - B1_Office 146	NO (-20%)	NO
Bldg A - B1_Office 147	YES (+18%)	NO
Bldg A - B1_Office 148	NO (-59%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg A - B1_Office 149	NO (-55%)	NO
Bldg A - B1_Office 150	YES (+11%)	NO
Bldg A - B1_Office 151	NO (-10%)	NO
Bldg A - B1_Office 152	NO (-4%)	NO
Bldg A - B1_Office 153	NO (-28%)	NO
Bldg A - B1_Office 154	NO (-25%)	NO
Bldg A - B1_Office 155	NO (-27%)	NO
Bldg A - B1_Office 156	NO (-12%)	NO
Bldg A - B1_Office 157	NO (-20%)	NO
Bldg A - B1_Office 158	YES (+18%)	NO
Bldg A - B1_Office 159	NO (-57%)	NO
Bldg A - B1_Office 160	NO (-55%)	NO
Bldg B - B1_Office 101	NO (-31%)	NO
Bldg B - B1_Office 102	NO (-59%)	NO
Bldg B - B1_Office 103	YES (+3%)	NO
Bldg B - B1_Office 104	NO (-26%)	NO
Bldg B - B1_Office 105	NO (-26%)	NO
Bldg B - B1_Office 106	NO (-67%)	NO
Bldg B - B1_Office 107	NO (-18%)	NO
Bldg B - B1_Office 108	NO (-12%)	NO
Bldg B - B1_Office 109	NO (-12%)	NO
Bldg B - B1_Office 110	NO (-62%)	NO
Bldg B - B1_Office 111	NO (-13%)	NO
Bldg B - B1_Office 112	NO (-15%)	NO
Bldg B - B1_Office 113	NO (-35%)	NO
Bldg B - B1_Office 114	NO (-80%)	NO
Bldg B - B1_Office 115	NO (-47%)	NO
Bldg B - B1_Office 116	NO (-44%)	NO
Bldg B - B1_Office 117	YES (+3%)	NO
Bldg B - B1_Office 118	NO (-30%)	NO
Bldg B - B1_Office 119	NO (-26%)	NO
Bldg B - B1_Office 120	NO (-12%)	NO
Bldg B - B1_Office 121	NO (-24%)	NO
Bldg B - B1_Office 122	NO (-69%)	NO
Bldg B - B1_Office 123	NO (-10%)	NO
Bldg B - B1_Office 124	NO (-12%)	NO
Bldg B - B1_Office 125	NO (-11%)	NO
Bldg B - B1_Office 126	NO (-62%)	NO
Bldg B - B1_Office 127	NO (-11%)	NO
Bldg B - B1_Office 128	NO (-15%)	NO
Bldg B - B1_Office 129	NO (-33%)	NO
Bldg B - B1_Office 130	NO (-80%)	NO
Bldg B - B1_Office 131	NO (-46%)	NO
Bldg B - B1_Office 132	NO (-44%)	NO
Bldg B - B1_Office 133	NO (-27%)	NO
Bldg B - B1_Office 134	NO (-21%)	NO
Bldg B - B1_Office 135	NO (-65%)	NO
Bldg B - B1_Office 136	NO (-2%)	NO
Bldg B - B1_Office 137	NO (-9%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg B - B1_Office 138	NO (-10%)	NO
Bldg B - B1_Office 139	NO (-61%)	NO
Bldg B - B1_Office 140	YES (+20%)	NO
Bldg B - B1_Office 141	NO (-13%)	NO
Bldg B - B1_Office 142	NO (-15%)	NO
Bldg B - B1_Office 143	NO (-31%)	NO
Bldg B - B1_Office 144	NO (-79%)	NO
Bldg B - B1_Office 145	NO (-43%)	NO
Bldg B - B1_Office 146	NO (-42%)	NO
Bldg B - B1_Office 147	NO (-27%)	NO
Bldg B - B1_Office 148	NO (-20%)	NO
Bldg B - B1_Office 149	NO (-63%)	NO
Bldg B - B1_Office 150	NO (-3%)	NO
Bldg B - B1_Office 151	NO (-8%)	NO
Bldg B - B1_Office 152	NO (-7%)	NO
Bldg B - B1_Office 153	NO (-9%)	NO
Bldg B - B1_Office 154	NO (-54%)	NO
Bldg B - B1_Office 155	NO (-27%)	NO
Bldg B - B1_Office 156	NO (-20%)	NO
Bldg B - B1_Office 157	NO (-62%)	NO
Bldg B - B1_Office 158	NO (-2%)	NO
Bldg B - B1_Office 159	NO (-8%)	NO
Bldg B - B1_Office 160	NO (-6%)	NO
Bldg B - B1_Office 161	NO (-7%)	NO
Bldg B - B1_Office 162	NO (-53%)	NO
Bldg B - B1_Office 163	NO (-27%)	NO
Bldg B - B1_Office 164	NO (-20%)	NO
Bldg B - B1_Office 165	NO (-62%)	NO
Bldg B - B1_Office 166	NO (-2%)	NO
Bldg B - B1_Office 167	NO (-8%)	NO
Bldg B - B1_Office 168	NO (-6%)	NO
Bldg B - B1_Office 169	NO (-7%)	NO
Bldg B - B1_Office 170	NO (-53%)	NO
Bldg B - B1_Office 171	NO (-27%)	NO
Bldg B - B1_Office 172	NO (-20%)	NO
Bldg B - B1_Office 173	NO (-62%)	NO
Bldg B - B1_Office 174	NO (-2%)	NO
Bldg B - B1_Office 175	NO (-8%)	NO
Bldg B - B1_Office 176	NO (-5%)	NO
Bldg B - B1_Office 177	NO (-6%)	NO
Bldg B - B1_Office 178	NO (-52%)	NO
Bldg C - B1_Office 101	NO (-34%)	NO
Bldg C - B1_Office 102	NO (-29%)	NO
Bldg C - B1_Office 103	NO (-7%)	NO
Bldg C - B1_Office 104	NO (-31%)	NO
Bldg C - B1_Office 105	NO (-33%)	NO
Bldg C - B1_Office 106	NO (-11%)	NO
Bldg C - B1_Office 107	NO (-60%)	NO
Bldg C - B1_Office 108	NO (-15%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg C - B1_Office 109	NO (-14%)	NO
Bldg C - B1_Office 110	NO (-62%)	NO
Bldg C - B1_Office 111	NO (-12%)	NO
Bldg C - B1_Office 112	NO (-16%)	NO
Bldg C - B1_Office 113	NO (-63%)	NO
Bldg C - B1_Office 114	NO (-35%)	NO
Bldg C - B1_Office 115	NO (-82%)	NO
Bldg C - B1_Office 116	NO (-47%)	NO
Bldg C - B1_Office 117	NO (-45%)	NO
Bldg C - B1_Office 118	NO (-29%)	NO
Bldg C - B1_Office 119	NO (-70%)	NO
Bldg C - B1_Office 120	NO (-31%)	NO
Bldg C - B1_Office 121	NO (-27%)	NO
Bldg C - B1_Office 122	NO (-2%)	NO
Bldg C - B1_Office 123	NO (-30%)	NO
Bldg C - B1_Office 124	NO (-33%)	NO
Bldg C - B1_Office 125	NO (-8%)	NO
Bldg C - B1_Office 126	NO (-60%)	NO
Bldg C - B1_Office 127	NO (-11%)	NO
Bldg C - B1_Office 128	NO (-15%)	NO
Bldg C - B1_Office 129	NO (-61%)	NO
Bldg C - B1_Office 130	NO (-11%)	NO
Bldg C - B1_Office 131	NO (-16%)	NO
Bldg C - B1_Office 132	NO (-63%)	NO
Bldg C - B1_Office 133	NO (-34%)	NO
Bldg C - B1_Office 134	NO (-82%)	NO
Bldg C - B1_Office 135	NO (-44%)	NO
Bldg C - B1_Office 136	NO (-47%)	NO
Bldg C - B1_Office 137	NO (-23%)	NO
Bldg C - B1_Office 138	NO (-71%)	NO
Bldg C - B1_Office 139	NO (-27%)	NO
Bldg C - B1_Office 140	NO (-31%)	NO
Bldg C - B1_Office 141	NO (-9%)	NO
Bldg C - B1_Office 142	NO (-14%)	NO
Bldg C - B1_Office 143	NO (-60%)	NO
Bldg C - B1_Office 144	NO (-9%)	NO
Bldg C - B1_Office 145	NO (-16%)	NO
Bldg C - B1_Office 146	NO (-63%)	NO
Bldg C - B1_Office 147	NO (-32%)	NO
Bldg C - B1_Office 148	NO (-82%)	NO
Bldg C - B1_Office 149	NO (-44%)	NO
Bldg C - B1_Office 150	NO (-47%)	NO
Bldg C - B1_Office 151	NO (-15%)	NO
Bldg C - B1_Office 152	NO (-69%)	NO
Bldg C - B1_Office 153	NO (-26%)	NO
Bldg C - B1_Office 154	NO (-28%)	NO
Bldg C - B1_Office 155	NO (-9%)	NO
Bldg C - B1_Office 156	NO (-13%)	NO
Bldg C - B1_Office 157	NO (-61%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg C - B1_Office 158	YES (+28%)	NO
Bldg C - B1_Office 159	NO (-14%)	NO
Bldg C - B1_Office 160	NO (-16%)	NO
Bldg C - B1_Office 161	NO (-61%)	NO
Bldg C - B1_Office 162	NO (-27%)	NO
Bldg C - B1_Office 163	NO (-81%)	NO
Bldg C - B1_Office 164	NO (-41%)	NO
Bldg C - B1_Office 165	NO (-43%)	NO
Bldg C - B1_Office 166	NO (-8%)	NO
Bldg C - B1_Office 167	NO (-66%)	NO
Bldg C - B1_Office 168	NO (-24%)	NO
Bldg C - B1_Office 169	NO (-27%)	NO
Bldg C - B1_Office 170	NO (-7%)	NO
Bldg C - B1_Office 171	NO (-9%)	NO
Bldg C - B1_Office 172	NO (-55%)	NO
Bldg C - B1_Office 173	NO (-10%)	NO
Bldg C - B1_Office 174	NO (-6%)	NO
Bldg C - B1_Office 175	NO (-63%)	NO
Bldg C - B1_Office 176	NO (-22%)	NO
Bldg C - B1_Office 177	NO (-26%)	NO
Bldg C - B1_Office 178	NO (-7%)	NO
Bldg C - B1_Office 179	NO (-8%)	NO
Bldg C - B1_Office 180	NO (-8%)	NO
Bldg C - B1_Office 181	NO (-55%)	NO
Bldg C - B1_Office 182	NO (-6%)	NO
Bldg C - B1_Office 183	NO (-62%)	NO
Bldg C - B1_Office 184	NO (-21%)	NO
Bldg C - B1_Office 185	NO (-25%)	NO
Bldg C - B1_Office 186	NO (-7%)	NO
Bldg C - B1_Office 187	NO (-8%)	NO
Bldg C - B1_Office 188	NO (-7%)	NO
Bldg C - B1_Office 189	NO (-55%)	NO
Bldg C - B1_Office 190	NO (-21%)	NO
Bldg C - B1_Office 191	NO (-62%)	NO
Bldg C - B1_Office 192	NO (-5%)	NO
Bldg C - B1_Office 193	NO (-25%)	NO
Bldg C - B1_Office 194	NO (-7%)	NO
Bldg C - B1_Office 195	NO (-8%)	NO
Bldg C - B1_Office 196	NO (-5%)	NO
Bldg C - B1_Office 197	NO (-55%)	NO
Bldg C - B1_Office 198	NO (-4%)	NO
Bldg C - B1_Office 199	NO (-62%)	NO
Bldg C - B1_Office 200	NO (-21%)	NO
Bldg C - B1_Office 201	NO (-25%)	NO
Bldg D - B1_Office 101	NO (-12%)	NO
Bldg D - B1_Office 102	NO (-60%)	NO
Bldg D - B1_Office 103	YES (+2%)	NO
Bldg D - B1_Office 104	YES (+2%)	NO
Bldg D - B1_Office 105	NO (-19%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg D - B1_Office 106	NO (-31%)	NO
Bldg D - B1_Office 107	NO (-13%)	NO
Bldg D - B1_Office 108	NO (-61%)	NO
Bldg D - B1_Office 109	YES (+2%)	NO
Bldg D - B1_Office 110	YES (+2%)	NO
Bldg D - B1_Office 111	NO (-19%)	NO
Bldg D - B1_Office 112	NO (-31%)	NO
Bldg D - B1_Office 113	NO (-13%)	NO
Bldg D - B1_Office 114	NO (-61%)	NO
Bldg D - B1_Office 115	YES (+2%)	NO
Bldg D - B1_Office 116	YES (+2%)	NO
Bldg D - B1_Office 117	NO (-19%)	NO
Bldg D - B1_Office 118	NO (-31%)	NO
Bldg D - B1_Office 119	NO (-13%)	NO
Bldg D - B1_Office 120	NO (-61%)	NO
Bldg D - B1_Office 121	YES (+2%)	NO
Bldg D - B1_Office 122	YES (+2%)	NO
Bldg D - B1_Office 123	NO (-19%)	NO
Bldg D - B1_Office 124	NO (-31%)	NO
Bldg D - B1_Office 125	NO (-13%)	NO
Bldg D - B1_Office 126	NO (-61%)	NO
Bldg D - B1_Office 127	YES (+2%)	NO
Bldg D - B1_Office 128	YES (+2%)	NO
Bldg D - B1_Office 129	NO (-19%)	NO
Bldg D - B1_Office 130	NO (-31%)	NO
Bldg D - B1_Office 131	NO (-13%)	NO
Bldg D - B1_Office 132	NO (-61%)	NO
Bldg D - B1_Office 133	YES (+2%)	NO
Bldg D - B1_Office 134	YES (+2%)	NO
Bldg D - B1_Office 135	NO (-19%)	NO
Bldg D - B1_Office 136	NO (-31%)	NO
Bldg D - B1_Office 137	NO (-13%)	NO
Bldg D - B1_Office 138	NO (-61%)	NO
Bldg D - B1_Office 139	YES (+2%)	NO
Bldg D - B1_Office 140	YES (+2%)	NO
Bldg D - B1_Office 141	NO (-19%)	NO
Bldg D - B1_Office 142	NO (-31%)	NO
Bldg D - B1_Office 143	NO (-13%)	NO
Bldg D - B1_Office 144	NO (-61%)	NO
Bldg D - B1_Office 145	YES (+2%)	NO
Bldg D - B1_Office 146	YES (+2%)	NO
Bldg D - B1_Office 147	NO (-19%)	NO
Bldg D - B1_Office 148	NO (-31%)	NO
Bldg D - B1_Office 149	NO (-13%)	NO
Bldg D - B1_Office 150	NO (-61%)	NO
Bldg D - B1_Office 151	YES (+2%)	NO
Bldg D - B1_Office 152	YES (+2%)	NO
Bldg D - B1_Office 153	NO (-19%)	NO
Bldg D - B1_Office 154	NO (-31%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bldg D - B1_Office 155	NO (-13%)	NO
Bldg D - B1_Office 156	NO (-61%)	NO
Bldg D - B1_Office 157	YES (+2%)	NO
Bldg D - B1_Office 158	YES (+2%)	NO
Bldg D - B1_Office 159	NO (-19%)	NO
Bldg D - B1_Office 160	NO (-30%)	NO
Bldg D - B1_Office 161	NO (-12%)	NO
Bldg D - B1_Office 162	NO (-61%)	NO

Criterion 4: The performance of the building, as built, should be consistent with the calculated BER

Separate submission

Criterion 5: The necessary provisions for enabling energy-efficient operation of the building should be in place

Separate submission

EPBD (Recast): Consideration of alternative energy systems

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

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Area [m ²]	86542	86542
External area [m ²]	56689	56689
Weather	SWI	SWI
Infiltration [m ³ /hm ² @ 50Pa]	3	3
Average conductance [W/K]	34028	28935
Average U-value [W/m ² K]	0.6	0.51
Alpha value* [%]	39.9	39.9

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

Building Use

% Area	Building Type
	A1/A2 Retail/Financial and Professional services
	A3/A4/A5 Restaurants and Cafes/Drinking Est./Takeaways
100	B1 Offices and Workshop businesses
	B2 to B7 General Industrial and Special Industrial Groups
	B8 Storage or Distribution
	C1 Hotels
	C2 Residential Institutions: Hospitals and Care Homes
	C2 Residential Institutions: Residential schools
	C2 Residential Institutions: Universities and colleges
	C2A Secure Residential Institutions
	Residential spaces
	D1 Non-residential Institutions: Community/Day Centre
	D1 Non-residential Institutions: Libraries, Museums, and Galleries
	D1 Non-residential Institutions: Education
	D1 Non-residential Institutions: Primary Health Care Building
	D1 Non-residential Institutions: Crown and County Courts
	D2 General Assembly and Leisure, Night Clubs, and Theatres
	Others: Passenger terminals
	Others: Emergency services
	Others: Miscellaneous 24hr activities
	Others: Car Parks 24 hrs
	Others: Stand alone utility block

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	0.38	0.91
Cooling	5.04	9.31
Auxiliary	14.71	10.25
Lighting	12.39	19.58
Hot water	0.39	0.92
Equipment*	39.72	39.72
TOTAL **	32.92	40.97

* 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	0.07	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	115.78	135.4
Primary energy* [kWh/m ²]	98.53	122.62
Total emissions [kg/m ²]	16.6	20.7

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

HVAC Systems Performance										
System Type	Heat dem MJ/m2	Cool dem MJ/m2	Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEFF	Cool SSEER	Heat gen SEFF	Cool gen SEER	
[ST] Fan coil systems, [HS] LTHW boiler, [HFT] Electricity, [CFT] Electricity										
	Actual	7.8	124.7	0.4	6.2	17.3	6	5.6	6	5.6
	Notional	6	147.9	0.7	11.4	11.9	2.43	3.6	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Electricity, [CFT] Electricity										
	Actual	12.2	0	0.6	0	1.1	6	0	6	0
	Notional	18.8	0	2.1	0	1.1	2.43	0	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Electricity, [CFT] Electricity										
	Actual	18.6	0	0.9	0	14.4	6	0	6	0
	Notional	43	0	4.9	0	11.7	2.43	0	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Electricity, [CFT] Electricity										
	Actual	19.8	0	0.9	0	7.7	6	0	6	0
	Notional	18.1	0	2.1	0	6.4	2.43	0	----	----

Key to terms

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

Key Features

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

Building fabric

Element	U _{i-Typ}	U _{i-Min}	Surface where the minimum value occurs*
Wall	0.23	0.14	External Wall
Floor	0.2	0.14	Exposed Floor
Roof	0.15	0.15	Roof
Windows, roof windows, and rooflights	1.5	1.21	External Wall (70% Glazed)
Personnel doors	1.5	-	No personal doors in project
Vehicle access & similar large doors	1.5	-	No vehicle doors in project
High usage entrance doors	1.5	-	No high usage entrance doors in project
U _{i-Typ} = Typical individual element U-values [W/(m²K)]		U _{i-Min} = Minimum individual element U-values [W/(m²K)]	
* There might be more than one surface where the minimum U-value occurs.			

Air Permeability	Typical value	This building
m³/(h.m²) at 50 Pa	5	3

Reading Park Station
Caversham Road
Reading
RG1 8BA

Residential Development
Energy and Sustainability
Statement/Strategy

Issue 03



Client Name	Aviva Life and Pensions UK Limited
Client Address	Saint Helen's 1 Undershaft London EC3P 3DQ
Property:	Residential Development Reading Station Park, Caversham Road, Reading, RG1 8BA
Project Reference:	4568
Issue:	03
Date:	February 2020
Prepared by:	MW/SK
Checked by:	KA
Validated by:	KA



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EXECUTIVE SUMMARY

The energy strategy adopts a hierarchical approach using passive and low energy design technologies to reduce baseline energy demand and CO₂ emissions followed by the application of low and zero carbon technologies. This strategy is in line with the relevant Reading Policies and the related supplementary guidance. In accordance with the December 2019 issue of the SPG, a target carbon emission for this energy strategy is zero carbon homes and as a minimum on site 35% less than a Building Regulations Part L2A:2013 baseline.

The focus of this energy strategy is on CO₂ reduction by using a highly efficient building envelope with high efficiency mechanical and electrical services, along with air source heat pumps, photovoltaic panels serving the domestic hot water base load in conjunction with photovoltaic cell renewable technology. The result is a proposed development with predicted performance of:

- Block A achieves a 50.52% reduction in carbon, Block B achieves a 49.79% reduction in carbon, Block C achieves a 49.81% reduction in carbon and Block D achieves a 48.43% reduction in carbon when compared to a Building Regulation 2013 compliant building as required by the Reading Plan.
- Block A achieves a 8.58% improvement in fabric energy efficiency, Block B achieves a 9.13% improvement in fabric energy efficiency, Block C achieves a 3.38% improvement in fabric energy efficiency and Block D achieves a 9.06% improvement in fabric energy efficiency when compared to a Building Regulation 2013 compliant building as required by the Reading Plan.
- The residential development achieves a CO₂ emissions reduction of 49.64 % over the Building Regulations 2013 compliant baseline scheme.
- The energy strategy is predicted, using the Building Regulations calculation methodologies, to achieve an annual development carbon emission saving of 497.96 tonnes over the baseline scheme.

The carbon dioxide emission and savings values, for the development as a whole, are as follows:

	CO ₂ Emissions (Tonnes per annum)	
	Regulated	Unregulated
Baseline Building Regulations 2013 Part L Compliant Development	1003.08	2033.74
After passive/low energy (energy demand) reduction	779.56	1810.21
After CHP or decentralised heating	774.52	1805.18
After renewable energy	505.12	1535.78

As stated above the developments carbon emission was significantly reduced compared to a Building Regulation 2013 complaint scheme. The below table set out the offset payment through Section 106 contribution as laid out within the Reading policies.

	Regulated CO ₂ Savings	
	Tonnes per annum	%
Savings from passive/low energy (energy demand) reduction	223.53	22.28
Savings from CHP or decentralised heating	5.04	0.50
Savings from renewable energy	269.40	26.86
Total Cumulative Savings	497.96	49.64
Carbon Short Fall	505.12	



	Tonnes CO₂
Cumulative Saving for off-set payment	£15,153.61
Cash-in-lieu contribution	£909,216.50



1.00 INTRODUCTION

1.01 Purpose

This report has been prepared on behalf of Aviva Life and Pensions UK Limited for the proposed Reading Station Park development energy strategy.

The report contains the predicted energy and carbon emission assessment results and identifies savings from the proposed low and zero carbon technologies to be incorporated into the scheme.

The energy and carbon dioxide emission assessment also known as the SAP assessment (Standard Assessment Procedure) has been undertaken using Elmhurst Design SAP 2012 software. Based on the building design submitted with the planning application the modelling identifies the energy and carbon dioxide savings related to the building envelope design and efficient mechanical and electrical services systems followed by the improvement using the proposed low and zero carbon (renewable) technologies for the scheme.

1.02 Existing Building

The existing development comprise a number of low-level retail buildings arranged facing Vastern Road. This development will be demolished and the land repurposed.

1.03 Proposed Development

The proposed development is submitted in outline based on Development Parameters, which allow the mix of commercial and residential use to be determined at a later stage. Under all land use mix scenarios, the development would come forward on the four defined development plots within the application site. For the purposes of this report we have assumed the development will be residential led and is based on the illustrative scheme contained in the Design & Access Statement.

The proposed development consists of four new towers referred to as Block A, Block B, Block C and Block D. The site is located next to Reading railway station on the corner of Caversham Road and Vastern Road.

The four blocks will provide approximately 1000 apartments in various configurations. The ground level on all four blocks will consist of retail/commercial/community demises. The towers increase in height with Block D being the tallest tower within the proposed development.

1.04 Reservation

This report has been prepared solely for the use of the applicant and Watkins Payne Partnership accept no responsibility for its use by any third parties.



2.00 POLICY REVIEW

2.01 National Policy

The National Planning Policy Framework (NPPF) sets out the planning policies for England that are to be taken into account within local planning policies. The framework itself does not have specific policies but identifies the purpose of achieving sustainable development. The NPPF launched in February 2019 states;

“The planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal changes. It should help to: shape places in ways that contribute to radical reduction in greenhouse gas emission, minimise vulnerability of existing buildings; and support renewable and low carbon energy and associate infrastructure”.

2.02 Reading Sustainable Policies

Reading Borough Local Plan came into effect in November 2019. This document contains the policies for how Reading will develop up to 2036. The policies favours sustainable developments at the heart of its approach to planning and this is articulated in the National Planning Policy Framework, published in February 2019. The key policies associated with building design and energy strategy as noted below:

Sustainable Design and Construction

CC2: SUSTAINABLE DESIGN AND CONSTRUCTION

Proposals for new development, including the construction of new buildings and the redevelopment and refurbishment of existing building stock, will be acceptable where the design of buildings and site layouts use energy, water, minerals, materials and other natural resources appropriately, efficiently and with care and take account of the effects of climate change.

To meet these requirements:

- All major non-residential developments or conversions to residential are required to meet the most up-to-date BREEAM ‘Excellent’ standards, where possible;*
- All minor non-residential developments or conversions to residential are required to meet the most up-to-date BREEAM ‘Very Good’ standard as a minimum;*
- All non-residential development or conversions to residential should incorporate water conservation measures so that predicted per capita consumption does not exceed the appropriate levels set out in the applicable BREEAM standard. Both residential and non-residential development should include recycling greywater and rainwater harvesting where systems are energy and cost effective.*



Adaptation to Climate Change

CC3: ADAPTATION TO CLIMATE CHANGE

All developments will demonstrate how they have been designed to incorporate measures to adapt to climate change. The following measures shall be incorporated into development:

- *Wherever possible, new buildings shall be orientated to maximise the opportunities for both natural heating and ventilation and reducing exposure to wind and other elements;*
- *Proposals involving both new and existing buildings shall demonstrate how they have been designed to maximise resistance and resilience to climate change for example by including measures such as solar shading, thermal mass, heating and ventilation of the building and appropriately coloured materials in areas exposed to direct sunlight, green and brown roofs, green walls, etc;*
- *Use of trees and other planting, where appropriate as part of a landscape scheme, to provide shading of amenity areas, buildings and streets and to help to connect habitat, designed with native plants that are carefully selected, managed and adaptable to meet the predicted changed climatic conditions; and*
- *All development shall minimise the impact of surface water runoff from the development in the design of the drainage system, and where possible incorporate mitigation and resilience measures for any increases in river flooding levels as a result of climate change*

Decentralised Energy

CC4: DECENTRALISED ENERGY

In meeting the sustainability requirements of this plan, developments of the sizes set out below shall demonstrate how consideration has been given to securing energy for the development from a decentralised energy source.

Any development of more than 20 dwellings and/ or non-residential development of over 1,000 sq m shall consider the inclusion of decentralised energy provision, within the site, unless it can be demonstrated that the scheme is not suitable, feasible or viable for this form of energy provision.

Where there is existing decentralised energy provision present within the vicinity of an application site, further developments of 10 dwellings or more or non-residential development of 1,000 sq m or more will be expected to link into the existing decentralised energy network or demonstrate why this is not feasible.



Standards for New Housing

H5: STANDARDS FOR NEW HOUSING

New build housing should be built to the following standards, unless it can be clearly demonstrated that this would render a development unviable:

- a. All new build housing outside the Central Area as defined on the Proposals Map will comply with the nationally-described space standard.*
- b. All new build housing will be built to the higher water efficiency standard under Regulation 36(3) of the Building Regulations⁷⁹.*
- c. All major new-build residential development should be designed to achieve zero carbon homes.*
- d. All other new build housing will achieve at a minimum a 19% improvement in the dwelling emission rate over the target emission rate, as defined in the 2013 Building Regulations.*
- e. All new build housing will be accessible and adaptable in line with M4(2) of the Building Regulations, unless it is built in line with M4(3) (see below).*
- f. On developments of 20 or more new build dwellings, at least 5% of dwellings will be wheelchair user dwellings in line with M4(3) of the Building Regulations. Any market homes provided to meet this requirement will be 'wheelchair adaptable' as defined in part M, whilst homes where the Council is responsible for allocating or nominating an individual may be 'wheelchair accessible'.*

2.03 Reading Supplementary Planning Guidance

The further clarification to the Reading Local Plan 2019 is supported by supplementary planning guidance (SPG) that includes "Sustainable Design and Construction" dated December 2019 that relates specifically to sustainability issues.

The SPD is intended to guide developers and decision-makers on the implementation of key sustainability policies set out in the Reading Local Plan, namely CC2-CC5, EN18 and H5. Summary of these policies are below;

- **CC2: Sustainable Design and Construction**

This policy seeks improved sustainability performance of buildings by setting out BREEAM requirements for non-residential developments conversions to residential. It also sets out the general principles of sustainability in new development that applies to both residential and non-residential uses. Requiring the specified BREEAM levels will significantly contribute to achieving Reading's emissions targets, as well as mitigating the effects of climate change.

- **CC3: Adaptation to Climate Change**

This identifies measures including building orientation, shading, heating, ventilation, green or brown roofs and walls, planting and surface water run-off to deal with the effects of climate change. Where these measures are not appropriately incorporated, planners will consider whether or not this is a reason for refusal. This policy will ensure that development within the Borough is resilient in the face of climate change.



- CC4: Decentralised Energy

This policy requires developers to consider inclusion of decentralised energy infrastructure, increasing the amount of decentralised energy provision in the Borough. This will help to achieve a shift to sustainable energy consumption and production and covers a wide range of technologies that reduce dependence on a centralised network or grid.

- CC5: Waste Minimisation and Storage

This policy requires developers to identify measures to minimise the generation of waste and to handle waste appropriately during the lifetime of a development. It will help to achieve the aims of the Council's Waste Minimisation Strategy⁹, as well as to comply with national policy, such as the Landfill Directive¹⁰.

- EN18: Flooding and Sustainable Drainage Systems

This policy directs development away from areas that are liable to flood. In areas of lower risk, development may move forward if it passes the exception test in the NPPF. It also requires major developments to incorporate Sustainable Drainage Systems (SuDS). This policy will help to protect people and property from flooding.

- H5: Standards for New Housing

This policy outlines standards for new-build housing, including those for sustainable design and construction. All new-build housing must be built to the higher water efficiency standard under the Building Regulations. All major new-build residential should achieve zero carbon homes and all other new-build housing must achieve a minimum 19% improvement over the 2013 Building Regulations target. This policy will help to deliver high-quality new homes and achieve Reading's emissions targets, as well as mitigate the effects of climate change.

According to the SPD an energy statement would typically include the following information: Energy efficiency of the building;

- Baseline annual predicted energy demand of the development (regulated and unregulated);
- Baseline annual predicted carbon emission of the development (regulated and unregulated), the Target Emission Rate (TER);
- The contribution of each proposed renewable energy technology;
- Cost information of technically feasible low zero carbon renewable technologies, including additional insulation, low carbon decentralised energy, heat pumps etc;
- Feasibility of district or community heating;
- Summary of the benefits of various energy technologies;
- The total estimated reduction in the development's baseline carbon and/or energy emissions.



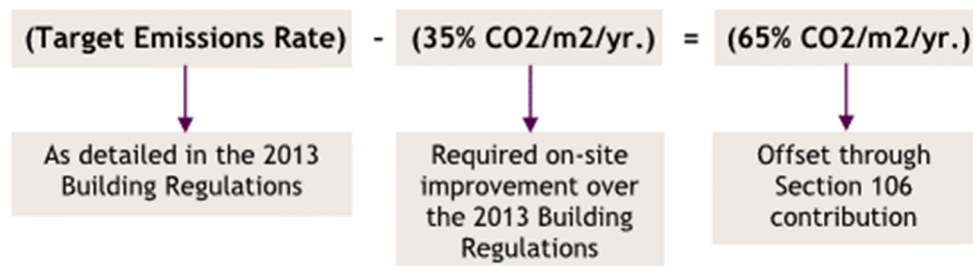
The relevant sections from the Sustainable Design and Construction SPG are as follows:

Table 3.1: Required level of sustainability standard

	Size of Development	Required Standard
New-build residential	Minor (fewer than 10 dwellings)	19% improvement in the dwelling emission rate over the target emission rate, as defined in the 2013 Building Regulations
	Major (10 dwellings or more)	Zero Carbon (or if unachievable, a minimum 35% improvement in the dwelling emission rate over the target emission rate, as defined in the 2013 Building Regulations and planning contribution to offset remaining carbon emissions to zero)
Creation of new residential units through conversion from other uses and/or	Minor (fewer than 10 dwellings)	BREEAM 'Very Good'
	Major (10 dwellings or more)	BREEAM 'Excellent'
Non-residential development (including development for non-C3 residential)	Minor (less than 1,000 sq. m of floorspace)	BREEAM 'Very Good'
	Major (1,000 sq. m of floorspace or more)	BREEAM 'Excellent'
Non-residential refurbishment (including refurbishment for non-C3 residential)	Minor (less than 1,000 sq. m of floorspace)	BREEAM 'Very Good'
	Major (1,000 sq. m of floorspace or more)	BREEAM 'Excellent'

As stated above the requirement for major new residential developments is to achieve Zero Carbon Homes. The policy recognised that is not always achievable and such if not achievable, it must achieve a minimum of 35% improvement in regulated emissions over the Target Emissions Rate (TER) in the 2013 Building Regulations, plus a Section 106 contribution of £1,800 per remaining tonne towards carbon offsetting within the Borough calculated as £60/tonne over a 30 year period). £60 per tonne of carbon is nationally recognized price of carbon and reflects the amount established by the Zero Carbon Hub.

The following calculation should be used to determine contribution:





3.00 OUTLINE METHODOLOGY

3.01 Energy Strategy

The fundamental approach for the energy strategy is as follows:

- Establish the baseline energy demand in line with statutory requirements in terms of Building Regulations Part L1A:2013 compliance using SAP assessment methodology.
- Adopt passive and low energy design techniques in order to reduce the energy demand for the development beyond the baseline energy demand requirements.
- Assess the potential decentralised heating, cooling and power measures available to suit this development and establish potential energy/carbon dioxide reduction for viable solutions (clean scheme).
- Assess the potential low and zero carbon (renewable) technologies to suit the development and establish potential energy/carbon dioxide reduction for viable solutions.
- Establish the anticipated energy and carbon dioxide emission reductions for the residential areas.

This approach is in line with the principles detailed within the relevant policy statements and regulatory guidelines listed in section 2.00. The development consists of new build residential apartments. The above-mentioned methodologies shall be applied to the whole residential development.

3.02 Energy Strategy Targets

The target carbon emission savings for this energy strategy are 35% less than a Building Regulation Part L1A:2013 Baseline.



4.00 ENERGY DEMAND ASSESSMENT

4.01 General

4.01.01 Principles

The energy demand assessment work has been undertaken using the Standard Assessment Procedure (SAP) 2012 version 9.9.2 in line with Building Regulations Part L1A: 2013 requirements using Elmhurst Design SAP 2012 software version 4.12.

Within the energy demand assessment, the following fuel carbon dioxide emission intensity factors have been used in line with Part L1A:2013.

Fuel	kg CO ₂ / kWh
Natural gas	0.216
Grid supplied electricity	0.519
Grid displaced electricity	0.519

4.01.02 Regulated and Un-regulated Energy

The planning application energy strategy will be provided in a format that reflects the recommendations of the Reading SPA December 2019.

Therefore, this framework energy strategy shows how policy compliance for the “regulated” energy can be achieved at the development and makes reference to the estimated “un-regulated” energy usage by means of energy benchmarks.

For clarity “regulated” and “un-regulated” energy are summarised as follows:

- **Regulated Energy** This is the energy covered by Approved Document L1A of the Building Regulations i.e. the energy used in heating, cooling, fans and pumps plus domestic hot water
- **Un - regulated Energy** This is energy used within a building that is not covered by the Building Regulations i.e. the energy used for general small power loads, lifts, external lighting, catering electricity, etc.

The planning policy CO₂ reduction targets are based in “regulated” energy only. Hence the % CO₂ emission savings target is not adversely affected by the estimated “un-regulated” energy in a building.

The assessed un-regulated energy uses for the proposed development are as follows:

- Appliances
- Cooking

For Block A the area weighted un-regulated energy equates to 20.19 kgCO₂/m², Block B 19.25 kgCO₂/m², Block C 19.50 kgCO₂/m² and Block D 18.80 kgCO₂/m².



4.02 Baseline Scheme

The baseline demand is the Building Regulations Part L1A:2013 target emission rate (TER).

The Part L1A:2013 TER is derived from the thermal model based on the National Calculation Methodology (NCM). The review has been carried out utilising the Elmhurst Design SAP 2012 software version 4.12.

The baseline CO₂ emissions for residential development are modelled as follows:-

Block A

Type	TER-CO ₂ Emission Rate (kg CO ₂ / m ²)
Area weighted	19.06

The annual CO₂ emission resulting from the baseline demand equates to the following:

	CO ₂ Emission (tonnes CO ₂ /year)
Without unregulated uses	209.91
With unregulated uses	432.24

Under the Building Regulations L1A: 2013 a fabric energy efficiency requirement was added to criterion 1, along with the carbon emission requirement which is mandatory requirement under the regulations.

This is referred to as the Target Fabric Energy Efficiency (TFEE) and expressed in kwh/m² per annum. The base line fabric energy efficiencies for the residential development are modelled as follows:

Type	TFEE – Fabric Energy Efficiency (kwh/ m ²)
Area Weighted	44.77

Block B

The baseline CO₂ emissions for Block B residential development are modelled as follows:-

Type	Apartments	TER-CO ₂ Emission Rate (kg CO ₂ / m ²)
Area weighted		19.06

The annual CO₂ emission resulting from the baseline demand equates to the following:

	CO ₂ Emission (tonnes CO ₂ /year)
Without unregulated uses	252.28
With unregulated uses	507.13

Baseline fabric energy efficiency for the Block B apartment types is as follows:



Type	Apartments	TFEE – Fabric Energy Efficiency (kwh/ m ²)
Area weighted		45.34

Block C

The baseline CO₂ emissions for Block C residential development are modelled as follows:-

Type	Apartments	TER-CO ₂ Emission Rate (kg CO ₂ / m ²)
Area weighted		18.79

The annual CO₂ emission resulting from the baseline demand equates to the following:

	CO ₂ Emission (tonnes CO ₂ /year)
Without unregulated uses	282.86
With unregulated uses	576.41

Baseline fabric energy efficiency for the Block C apartment types is as follows:

Type	Apartments	TFEE – Fabric Energy Efficiency (kwh/ m ²)
Area weighted		45.81

Block D

The baseline CO₂ emissions for Block D residential development are modelled as follows:-

Type	Apartments	TER-CO ₂ Emission Rate (kg CO ₂ / m ²)
Area weighted		18.75

The annual CO₂ emission resulting from the baseline demand equates to the following:

	CO ₂ Emission (tonnes CO ₂ /year)
Without unregulated uses	257.48
With unregulated uses	515.68

Baseline fabric energy efficiency for the Block D apartment types is as follows:

Type	Apartments	TFEE – Fabric Energy Efficiency (kwh/ m ²)
Area weighted		44.76



4.03 Energy Efficiency Measures

4.03.01 General

The energy strategy prioritises the reduction in energy consumption and hence CO₂ emissions through the building envelope design together with the use of efficient mechanical and electrical services.

The passive and low energy design principles that have been adopted in the current design include:

- High performance glazing
- Enhanced thermal performance to the existing walls and roof by the introduction of thermal insulations. High degree of thermal insulations within the new walls and roof associated with the building (Fabric Efficiencies are listed within Appendix 1)
- Low building air leakage rate (3 m³/hr/m² at 50 Pa which represents a 40 % improvement over the minimum 2013 Building Regulations requirements)
- Whole house mechanical supply and extract ventilation with integral heat recovery
- Community heating system serving all flats
- Low energy lighting (LED lamp sources)
- High efficiency gas fired boilers
- Variable speed pumps
- Building management system to provide sophisticated energy efficiency controls

4.03.02 Block A

The Building Regulations thermal model analysis identifies the following CO₂ emissions for Block A only:

Type	Part L1A:2013	
	Baseline Scheme (kg CO ₂ /m ² /year)	Lean Scheme (kg CO ₂ /m ² /year)
Part L1A :2013 Total	19.06	14.77
Unregulated Power	20.19	20.19
Total	39.25	34.96

The comparison of the energy efficient scheme (Lean) against the baseline scheme identifies that for the residential apartments there is a predicted 22.51 % (Part L1A 2013) improvement in terms of dwelling emission rate (DER) over the baseline scheme (TER) and then a predicted improvement of 10.93 % (Part L1A:2013) when allowance is made for the unregulated uses.

The annual CO₂ emissions resulting from the passive/low energy scheme equates to the following:

	CO ₂ Emission (tonnes CO ₂ /year)
	Part L1A:2013
Without unregulated uses	162.68
With unregulated uses	385.01



The Dwelling Fabric Energy Efficiency (DFEE) for the apartment types is as follows:

		Part L1A:2013	
Type		Baseline Scheme (kWh/m²/year)	Lean Scheme (kWh/m²/year)
Area weighted		44.77	40.93

Residential Block A shows a 8.58 % improvement over the targeted fabric energy efficiency (TFEE) when compared to the dwelling fabric energy efficiency (DFEE).

4.03.03 Block B

The Building Regulations thermal model analysis identifies the following CO₂ emissions for the Block B only:

		Part L1A:2013	
Type		Baseline Scheme (kg CO₂/m²/year)	Lean Scheme (kg CO₂/m²/year)
Part L1A :2013 Total		19.06	14.68
Unregulated Power		19.25	19.25
Total		38.31	33.93

The comparison of the energy efficient scheme (Lean) against the baseline scheme identifies that for the residential apartments there is a predicted 22.98 % (Part L1A 2013) improvement in terms of dwelling emission rate (DER) over the baseline scheme (TER) and then a predicted improvement of 11.43 % (Part L1A:2013) when allowance is made for the unregulated uses.

The annual CO₂ emissions resulting from the passive/low energy scheme equates to the following:

		CO₂ Emission (tonnes CO₂/year)
		Part L1A:2013
Without unregulated uses		194.31
With unregulated uses		449.16

The Dwelling Fabric Energy Efficiency (DFEE) for the apartment types is as follows:

		Part L1A:2013	
Type	Apartments	Baseline Scheme (kWh/m²/year)	Lean Scheme (kWh/m²/year)
Area weighted		45.34	41.20

Residential Block B shows a 9.13 % improvement over the targeted fabric energy efficiency (TFEE) when compared to the dwelling fabric energy efficiency (DFEE).

4.03.04 Block C

The Building Regulations thermal model analysis identifies the following CO₂ emissions for Block C:



		Part L1A:2013	
Type	Apartments	Baseline Scheme (kg CO ₂ /m ² /year)	Lean Scheme (kg CO ₂ /m ² /year)
Part L1A :2013 Total		18.79	14.95
Unregulated Power		19.50	19.50
Total		38.29	34.45

The comparison of the energy efficient scheme (Lean) against the baseline scheme identifies that for the proposed Block C residential development there is a predicted 20.44 % (Part L1A 2013) improvement in terms of dwelling emission rate (DER) over the baseline scheme (TER) and then a predicted improvement of 10.03 % (Part L1A:2013) when allowance is made for the unregulated uses.

The annual CO₂ emissions resulting from the passive/low energy scheme equates to the following:

	CO ₂ Emission (tonnes CO ₂ /year)
	Part L1A:2013
Without unregulated uses	225.04
With unregulated uses	518.59

The Dwelling Fabric Energy Efficiency (DFEE) for the apartment types is as follows:

		Part L1A:2013	
Type		Baseline Scheme (kWh/m ² /year)	Lean Scheme (kWh/m ² /year)
Area weighted		45.81	44.26

Residential Block C shows a 3.38 % improvement over the targeted fabric energy efficiency (TFEE) when compared to the dwelling fabric energy efficiency (DFEE).

4.03.05 Block D

The Building Regulations thermal model analysis identifies the following CO₂ emissions for Block D:

		Part L1A:2013	
Type	Apartments	Baseline Scheme (kg CO ₂ /m ² /year)	Lean Scheme (kg CO ₂ /m ² /year)
Part L1A :2013 Total		18.75	14.40
Unregulated Power		18.80	18.80
Total		37.55	33.20

The comparison of the energy efficient scheme (Lean) against the baseline scheme identifies that for the proposed Block D residential development there is a predicted 23.20



% (Part L1A 2013) improvement in terms of dwelling emission rate (DER) over the baseline scheme (TER) and then a predicted improvement of 11.58 % (Part L1A:2013) when allowance is made for the unregulated uses.

The annual CO₂ emissions resulting from the passive/low energy scheme equates to the following:

	CO₂ Emission (tonnes CO₂/year)
	Part L1A:2013
Without unregulated uses	197.75
With unregulated uses	455.95

The Dwelling Fabric Energy Efficiency (DFEE) for the apartment types is as follows:

		Part L1A:2013	
Type		Baseline Scheme (kWh/m²/year)	Lean Scheme (kWh/m²/year)
Area weighted		44.76	40.71

Residential Block C shows a 9.06 % improvement over the targeted fabric energy efficiency (TFEE) when compared to the dwelling fabric energy efficiency (DFEE).



5.00 DECENTRALISED HEATING, COOLING AND POWER ASSESSMENT

5.01 General

The potential use of decentralised heating, cooling and power for the building has been assessed in relation to the following:

- Decentralised heating
- Decentralised cooling
- Combined heat and power (CHP)
- Combined cooling heat and power (CCHP/trigeneration)

5.02 Decentralised Heating and Cooling

Decentralised heating and cooling relate to a central system that provides the necessary heating and cooling water to more than one use or part of a building or to more than one building. For example, a decentralised heating system can comprise central boiler plant that provides heat to separate dwellings and similarly a decentralised cooling system can comprise central refrigeration plant that provides cooling to individual retail units in a shopping centre.

Two types of decentralised heating and cooling schemes have been considered for the development.

1. Connection to a district energy network (DEN)
2. The provision of a development decentralised energy centre

District Energy Network

Investigations into existing or proposed district energy networks to provide decentralised heating and / or cooling to the development has established that there are proposals by Reading Borough Council to develop networks in some prominent areas in Reading. Heat map has been created by Element Energy which highlight four clusters which will be suitable for heat network schemes. The heat map is demonstrated on Appendix 2 within this report.

The site proposed for the Reading Station Park development discussed within this report will be located in an area where the development could connect to the district heating network in the future.

Therefore, the DES is not a viable option for the development site, however connections will be provided for future connectivity.

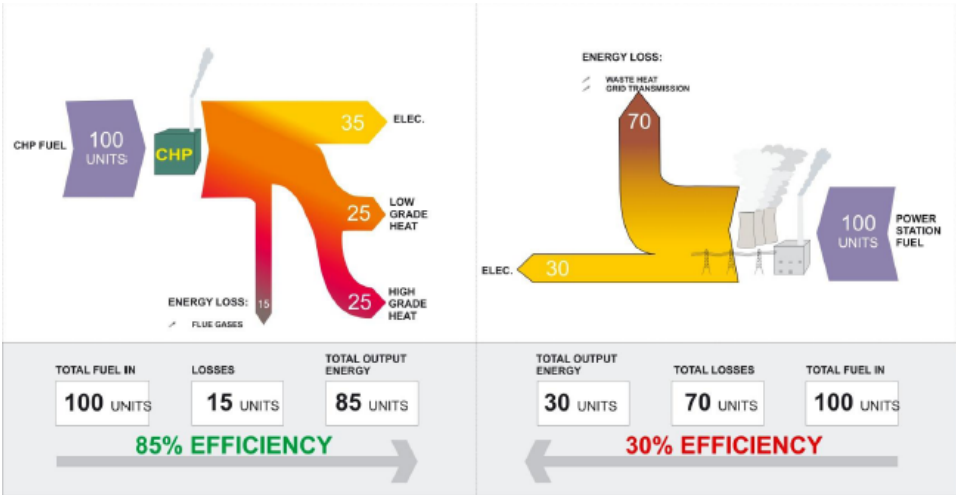
Decentralised Energy Centre

The development will be provided with central plant serving both the residential and retail uses. The condenser water system will incorporate heat exchangers that will be used by the retail tenants as their heat source when in heating mode and heat sink when in cooling mode from their fit-out systems. The tenants fit out guide will stipulate that the retail tenants will have to use the condenser water system for their primary heating and cooling.



5.03 Combined Heat and Power

Combined Heat and Power (CHP) generates electricity on site and recovers a proportion of the waste heat for use in heating and/or hot water generation for the building. This allows the overall efficiency to be significantly greater than the electricity generated via power stations feeding the National Grid. The CHP plant typically uses gas as the primary energy source and often incorporates a thermal store. Biomass fuelled CHP is possible however this is typically only for very large schemes due to operational difficulties with smaller capacity units.



CHP systems are typically considered only to be viable where they are able to run for at least 5000 hours per annum and have an appropriate year-round heating demand.

The domestic hot water service (HWS) requirement for a residential development is relatively high. As residents will require hot water throughout the day across the year the CHP will operate to its optimum efficiencies. The displaced electricity produced shall be utilised by the residence which offers a clean source of energy.

With the de-carbonisation of the grid using natural gas as a fuel source is no longer sustainable. CHP systems is also considered to contribute to air pollution and as such this system is not viable system for the development.



5.04 Combined Cooling, Heat and Power



Combined Cooling, Heat and Power (CCHP) that is often referred to as trigeneration uses the same principles as detailed above for a CHP system however the heat produced is also used to generate cooling via an absorption chiller. The CCHP plant can make use of heat generated by the CHP plant in buildings with a cooling demand.

Similar to CHP plant the CCHP system is typically considered only to be viable where they are able to run for at least 5,000 hours per year and have an appropriate year-round usage for the heat generated from the CCHP plant.

The absorption chiller incorporated within a CCHP scheme has a very low efficiency. Therefore, a CCHP plant is not considered suitable for the development.

5.05 Decentralised Heating, Cooling and Power Analysis

The SAP assessment has been repeated incorporating a CHP system to contribute to the domestic hot water load (Clean Scheme).

5.05.01 Block A

The Building Regulations thermal model analysis identifies the following CO₂ emissions for Block A only:

Type	Part L1A:2013		
	Baseline Scheme (kg CO ₂ /m ² /year)	Lean Scheme (kg CO ₂ /m ² /year)	Clean Scheme (kg CO ₂ /m ² /year)
Area Weighted Part L1A :2013 Total	19.06	14.77	14.75
Unregulated Power	20.19	20.19	20.19
Total	39.25	34.96	34.94

The comparison of the clean energy efficient scheme against the baseline scheme identifies that for the residential apartments there is a predicted 22.61 % (Part L1A 2013) improvement in terms of dwelling emission rate (DER) over the baseline scheme (TER) and



then a predicted improvement of 12.33 % (Part L1A:2013) when allowance is made for the unregulated uses.

The annual CO₂ emissions resulting from the decentralised energy scheme equates to the following:

	CO ₂ Emission (tonnes CO ₂ /year)
	Part L1A:2013
Without unregulated uses	162.44
With unregulated uses	384.77

5.05.02 Block B

The Building Regulations thermal model analysis identifies the following CO₂ emissions for the Block B only:

		Part L1A:2013		
Type	Apartments	Baseline Scheme (kg CO ₂ /m ² /year)	Lean Scheme (kg CO ₂ /m ² /year)	Clean Scheme (kg CO ₂ /m ² /year)
Area Weighted Part L1A :2013 Total		19.06	14.68	14.65
Unregulated Power		19.25	19.25	19.25
Total		38.31	33.93	33.90

The comparison of the clean energy efficient scheme against the baseline scheme identifies that for the residential apartments there is a predicted 23.14 % (Part L1A 2013) improvement in terms of dwelling emission rate (DER) over the baseline scheme (TER) and then a predicted improvement of 13.0% (Part L1A:2013) when allowance is made for the unregulated uses.

The annual CO₂ emissions resulting from the decentralised energy scheme equates to the following:

	CO ₂ Emission (tonnes CO ₂ /year)
	Part L1A:2013
Without unregulated uses	193.91
With unregulated uses	448.75

5.05.03 Block C

The Building Regulations thermal model analysis identifies the following CO₂ emissions for Block C:

		Part L1A:2013		
Type	Apartments	Baseline Scheme (kg CO ₂ /m ² /year)	Lean Scheme (kg CO ₂ /m ² /year)	Clean Scheme (kg CO ₂ /m ² /year)
Area Weighted Part L1A :2013 Total		18.79	14.95	14.66
Unregulated Power		19.50	19.50	19.50
Total		38.29	34.45	34.16



The comparison of the clean energy efficient scheme against the baseline scheme identifies that for the proposed Block C residential development there is a predicted 21.98 % (Part L1A 2013) improvement in terms of dwelling emission rate (DER) over the baseline scheme (TER) and then a predicted improvement of 11.99 % (Part L1A:2013) when allowance is made for the unregulated uses.

The annual CO₂ emissions resulting from the decentralised energy scheme equates to the following:

	CO₂ Emission (tonnes CO₂/year)
	Part L1A:2013
Without unregulated uses	220.59
With unregulated uses	514.13

5.05.04 Block D

The Building Regulations thermal model analysis identifies the following CO₂ emissions for Block C:

		Part L1A:2013		
Type	Apartments	Baseline Scheme (kg CO ₂ /m ² /year)	Lean Scheme (kg CO ₂ /m ² /year)	Clean Scheme (kg CO ₂ /m ² /year)
Area Weighted Part L1A :2013 Total		18.75	14.40	14.36
Unregulated Power		18.80	18.80	18.80
Total		37.55	33.20	33.16

The comparison of the clean energy efficient scheme against the baseline scheme identifies that for the proposed Block D residential development there is a predicted 23.41 % (Part L1A 2013) improvement in terms of dwelling emission rate (DER) over the baseline scheme (TER) and then a predicted improvement of 13.22 % (Part L1A:2013) when allowance is made for the unregulated uses.

The annual CO₂ emissions resulting from the decentralised energy scheme equates to the following:

	CO₂ Emission (tonnes CO₂/year)
	Part L1A:2013
Without unregulated uses	197.19
With unregulated uses	455.39



6.00 RENEWABLE ENERGY ASSESSMENT

6.01 General

The potential use of renewable energy technology has been undertaken for the following:

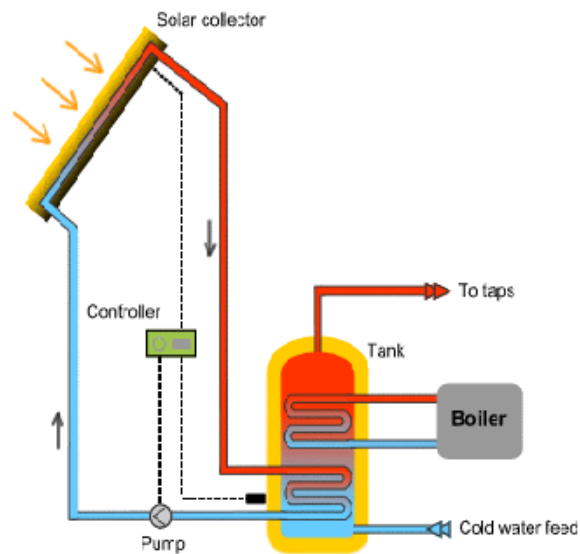
- Solar water heating
- Wind turbines
- Photovoltaic cells
- Biomass
- Ground source heating and cooling
- Air source heating and cooling
- Fuel cell

6.02 Solar Water Heating

Solar thermal panels utilise the sun's energy to generate hot water for use within the building. The panels are commonly provided in either flat plate or evacuated tube arrangements. The panels are ideally located facing south at an approximate 30° inclination angle in areas where they are not subjected to shade.



The development has the potential to use solar water heating to pre-heat the domestic hot water service, but as the development is provided with a heat pumps the benefit of having solar thermal panels is limited and as such not viable for the development.



6.03 Wind Turbines

Wind turbines generate electrical energy derived from kinetic energy provided by the local wind resource. The performance of wind turbines depends greatly on the wind speed and turbulence that in turn is influenced by the terrain and installation height.





In urban areas non-laminar wind flow occurs as a result of turbulence due primarily to adjacent buildings. There is growing evidence of urban wind turbines failing to perform in line with manufacturer's estimated outputs and as a result wind turbines are likely to produce only modest power outputs with corresponding low carbon dioxide emission reduction within urban sites.

For the reasons detailed above wind turbines are not considered viable for the development.

6.04 Photovoltaic Cells

Photovoltaic (PV) panels utilise the sun's energy to generate electricity. The optimum location for PV panels is south facing at an approximate 30° inclination angle in areas where they are not subjected to shade.





The development has unshaded roof areas that could be utilised for PV panels. Based on various site constraints only the roof of Block D has available space for a PV installation and an area of 30m² can be provided for the installation of PV panels. The contribution from the PV installation shall be put towards Block A, Block B, Block C and Block D.

6.05 Biomass

Biomass is considered to be a renewable fuel source as the CO₂ absorbed during the growth period is assessed as being approximately equal to the CO₂ emitted during combustion and hence deemed "carbon neutral". Biomass for boilers is typically wood either in chip or pellet form.

Biomass boilers require fuel storage together with associated transportation and delivery to the store location. Biomass boilers also increase the NO_x emissions when compared to gas fired boilers.



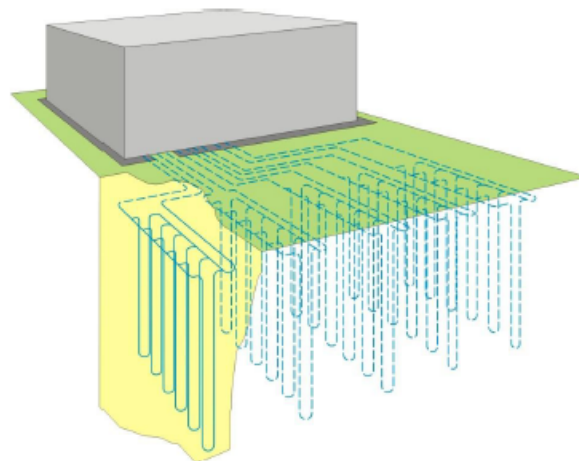


For this development there is no realistic space within the overall development for fuel storage together with the site constraints related to the associated delivery requirements. In addition, there are on-going concerns with regard to the potential impact on local air quality.

For the reasons defined above the use of biomass is not considered viable for the development.

6.06 Ground Source Heating and Cooling

Ground source heating and cooling systems utilise the principle during heating mode of upgrading heat from the ground to a usable temperature and during cooling mode of rejecting heat from the building into the ground. There are two primary methods utilising either open or closed loop systems.



The open loop system extracts water, typically from the chalk aquifer, and uses this water in either the heating or cooling process before rejecting this heat back to the aquifer in a separate borehole. The open loop system requires licence approval from the Environment Agency that typically has a 10 year duration.

The closed loop system dissipates heat to or extracts heat from the ground via pipework circuits that are typically inserted into vertical boreholes. These generally do not require Environment Agency licences as no extraction of water from the aquifer takes place.



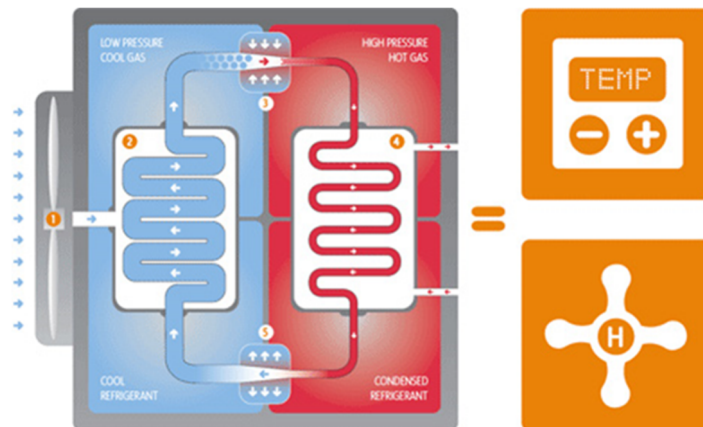
Generally, for both the open and closed loop options heat pumps are used in order to generate the heating and cooling water temperatures needed within a building.

A condensate water system is proposed for the development which will meet the demand of this development. A connection shall be provided to the district energy network when available.

For these reasons a ground source heating and cooling system is not considered viable for the development.

6.07 Air Source Heating and Cooling

Air sourced heat pump (ASHP) works on the same principles as a ground source heat pump (GSHP) however the medium in which heat is extracted is the external air rather than the ground. The ASHP can be reversed to provide cooling when required. ASHP will generally have a lower seasonal coefficient of performance when compared to GSHP.



A condensate water system is proposed for the development which will meet the heating, cooling and hot water demand of this development. The condensate water system will incorporate dry air coolers and heat pumps to meet the demands of the apartment Blocks A to D. As the cooling and heating demand is met by the condensate water system an ASHP installation is not considered viable for this development.

6.08 Fuel Cell

The fuel cell technology essentially converts chemical energy into both electrical and heat energy. The cell needs to be continually supplied with hydrogen (derived from either a piped or storage source) and oxygen (derived from air) which are combined, and the chemical reaction produces electrical energy, heat energy and water vapour.

The fuel cell requires a hydrogen fuel source that can either be from a piped source (not currently available) or from stored gas. However, the more usual approach currently in the UK is to use natural gas in order to generate the hydrogen required to operate the fuel cell.

Fuel cells have various commercial and technical limitations. There is a high initial capital cost together with there being few established suppliers and a very limited specialist design, installation and maintenance capabilities. Certain fuel cell elements require regular replacement imposing a significant on-going cost implication. The fuel cells themselves are generally large, heavy and require fresh air ventilation.



Due to the initial capital cost, space requirements and on-going maintenance costs fuel cells are not considered viable for this development.

6.09 Renewable Energy Analysis

6.09.01 Viable LZCs

The proposed renewable energy sources for the development, applicable to Block A, Block B, Block C and Block D residential areas only, are:

Photovoltaic panels - 30 m² of PV panels to provide a contribution to the electricity demand.

6.09.02 Block A

The thermal model has been repeated incorporating the renewable energy technologies and the results are:

Type	Apartments	Baseline Scheme (kg CO ₂ /m ² /year)	Lean Scheme (kg CO ₂ /m ² /year)	Clean Scheme (kg CO ₂ /m ² /year)	LZC Scheme (kg CO ₂ /m ² /year)
Part L1A : 2013 Total		19.06	14.77	14.75	9.43
Unregulated Power		20.19	20.19	20.19	20.19
Total		39.25	34.96	34.94	29.62

The annual CO₂ emissions for Block A incorporating renewable energy technologies are 9.43 kg CO₂/m².

The improvement with renewable energy technologies over the baseline (TER) scheme is 50.52 %.

The annual CO₂ emissions for Block A allowing for un-regulated energy uses with the renewable energy technologies are 29.62 kg CO₂/m².

The improvement with renewable energy technologies over the baseline (TER) scheme when un-regulated energy uses are incorporated is 27.56 %.

The annual CO₂ emissions resulting from the green scheme with renewable energy technologies equates to 103.85 tonnes without un-regulated uses and then 326.21 tonnes when un-regulated uses are taken into account.

6.09.03 Block B

The thermal model has been repeated incorporating the renewable energy technologies and the results are:

Type	Apartments	Baseline Scheme (kg CO ₂ /m ² /year)	Lean Scheme (kg CO ₂ /m ² /year)	Clean Scheme (kg CO ₂ /m ² /year)	LZC Scheme (kg CO ₂ /m ² /year)
Part L1A : 2013 Total		19.06	14.68	14.65	9.57
Unregulated Power		19.25	19.25	19.25	19.25
Total		38.31	33.93	33.90	28.82



The annual CO₂ emissions for Block B incorporating renewable energy technologies are 9.57 kg CO₂/m².

The improvement with renewable energy technologies over the baseline (TER) scheme is 49.79 %.

The annual CO₂ emissions for Block B allowing for un-regulated energy uses with the renewable energy technologies are 28.82 kg CO₂/m².

The improvement with renewable energy technologies over the baseline (TER) scheme when un-regulated energy uses are incorporated is 27.99 %.

The annual CO₂ emissions resulting from the green scheme with renewable energy technologies equates to 126.67 tonnes without un-regulated uses and then 381.46 tonnes when un-regulated uses are taken into account.

6.09.04 Block C

The thermal model has been repeated incorporating the renewable energy technologies and the results are:

Type	Apartments	Baseline Scheme (kg CO ₂ /m ² /year)	Lean Scheme (kg CO ₂ /m ² /year)	Clean Scheme (kg CO ₂ /m ² /year)	LZC Scheme (kg CO ₂ /m ² /year)
Part L1A : 2013 Total		18.79	14.95	14.66	9.43
Unregulated Power		19.50	19.50	19.50	19.50
Total		38.29	34.45	34.16	28.93

The annual CO₂ emissions for Block C incorporating renewable energy technologies are 9.43 kg CO₂/m².

The improvement with renewable energy technologies over the baseline (TER) scheme is 49.81 %.

The annual CO₂ emissions for Block C allowing for un-regulated energy uses with the renewable energy technologies are 28.93 kg CO₂/m².

The improvement with renewable energy technologies over the baseline (TER) scheme when un-regulated energy uses are incorporated is 27.40 %.

The annual CO₂ emissions resulting from the green scheme with renewable energy technologies equates to 141.92 tonnes without un-regulated uses and then 435.40 tonnes when un-regulated uses are taken into account.

6.09.05 Block D

The thermal model has been repeated incorporating the renewable energy technologies and the results are:

Type	Apartments	Baseline Scheme (kg CO ₂ /m ² /year)	Lean Scheme (kg CO ₂ /m ² /year)	Clean Scheme (kg CO ₂ /m ² /year)	LZC Scheme (kg CO ₂ /m ² /year)
Part L1A : 2013 Total		18.75	14.40	14.36	9.67



Type	Apartments	Baseline Scheme (kg CO ₂ /m ² /year)	Lean Scheme (kg CO ₂ /m ² /year)	Clean Scheme (kg CO ₂ /m ² /year)	LZC Scheme (kg CO ₂ /m ² /year)
Unregulated Power		18.80	18.80	18.80	18.80
Total		37.55	33.2	33.16	28.47

The annual CO₂ emissions for Block D incorporating renewable energy technologies are 9.67 kg CO₂/m².

The improvement with renewable energy technologies over the baseline (TER) scheme is 48.43 %.

The annual CO₂ emissions for Block D allowing for un-regulated energy uses with the renewable energy technologies are 28.47 kg CO₂/m².

The improvement with renewable energy technologies over the baseline (TER) scheme when un-regulated energy uses are incorporated is 27.38 %.

The annual CO₂ emissions resulting from the green scheme with renewable energy technologies equates to 132.79 tonnes without un-regulated uses and then 390.95 tonnes when un-regulated uses are taken into account.



7.00 OVERHEATING

The building design has adopted the following principles in order to reduce potential overheating:

- Balance between solid and glazed elements within the façade whilst taking into account the building design aesthetic requirements
- Energy efficient design measures such as low energy LED lighting with occupancy control and automatic daylight dimming, and variable speed fans to reduce motor heat gain
- High performance glazing to reduce heat losses and solar heat gain
- Mechanical fresh air ventilation system that can provide free cooling during certain times of the year



8.00 OVERALL BUILDING ANALYSIS

8.01 Carbon Reduction – Building Regulation 2013 Baseline

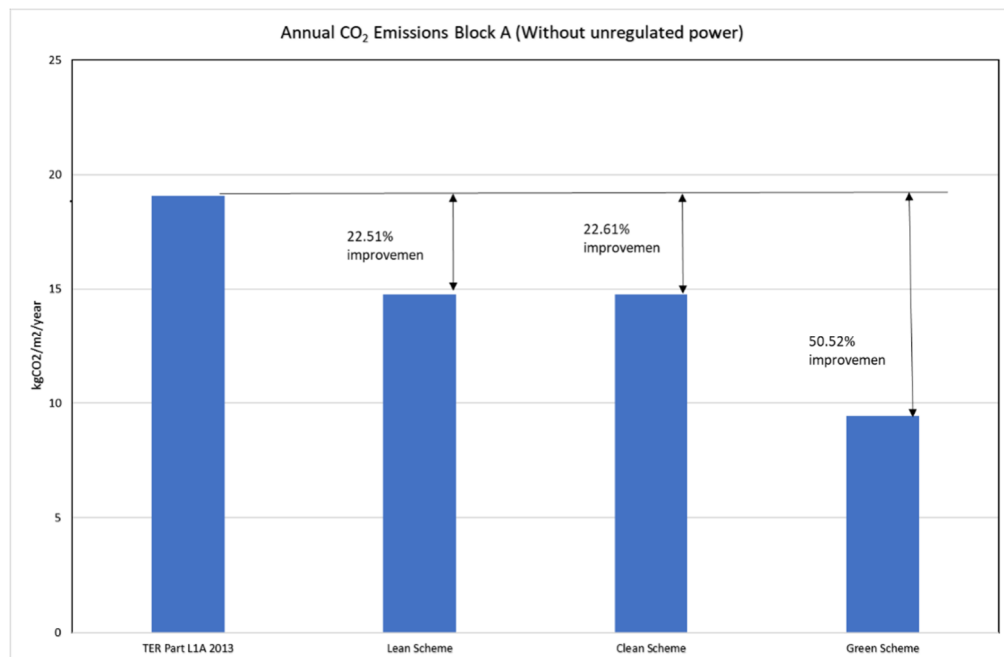
The overall building analysis can then be summarised as follows:

Block A

	Area Weighted kg CO ₂ /m ²			
	Baseline Scheme	Lean Scheme	Clean Scheme	LZC Scheme
Building Regulations Compliant	19.06	14.77	14.75	9.43
Allowing for Un-regulated Uses	39.25	34.96	34.94	29.62

These values are shown in diagrammatic form below that shows the following principles:

- The proposed scheme (LZC) assessment shows a predicted improvement of 50.52 % when compared to the baseline scheme
- The renewable energy technologies show a predicted improvement of 36.15 % over the lean scheme
- When un-regulated energy uses are taken into account the predicted overall improvement is 27.56 % compared to the baseline scheme with renewable energy technologies showing a predicted 15.27 % improvement over the lean scheme



Based on the regulated power results indicated above the proposed scheme incorporating a renewable energy technology provides a carbon emissions reduction of 50.52 % when compared to the baseline Building Regulations 2013 (TER) compliant scheme. This demonstrates that the proposed scheme for Block A archives beyond Reading Plan requirement of 35%.

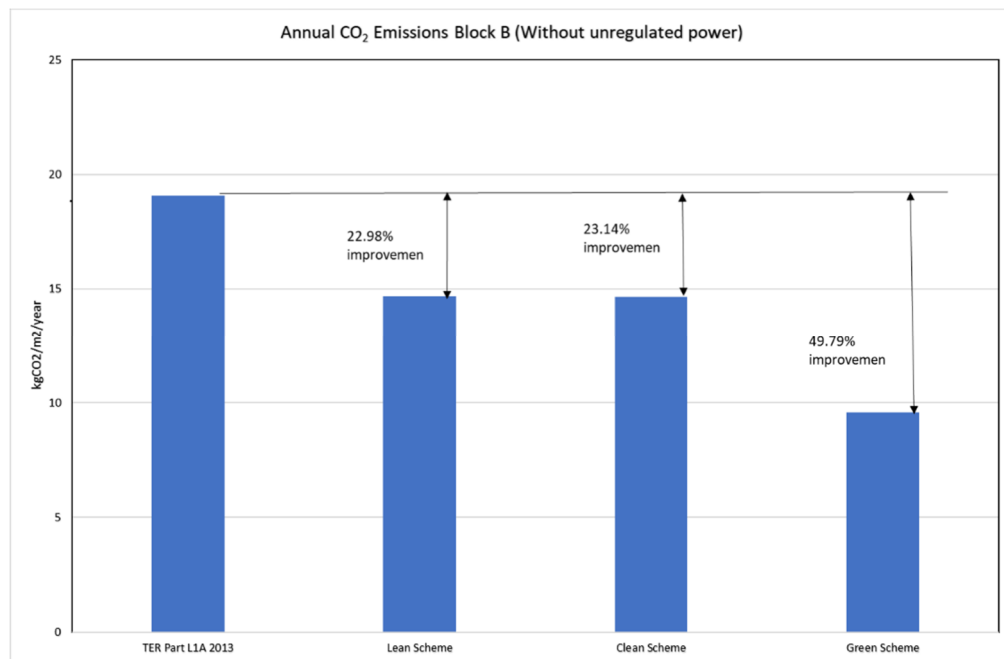


Block B

	Area Weighted kg CO ₂ /m ²			
	Baseline Scheme	Lean Scheme	Clean Scheme	LZC Scheme
Building Regulations Compliant	19.6	14.68	14.65	9.57
Allowing for Un-regulated Uses	38.31	33.93	33.90	28.82

These values are shown in diagrammatic form below that shows the following principles:

- The proposed scheme (LZC) assessment shows a predicted improvement of 49.79 % when compared to the baseline scheme
- The renewable energy technologies show a predicted improvement of 34.81 % over the lean scheme
- When un-regulated energy uses are taken into account the predicted overall improvement is 27.99 % compared to the baseline scheme with renewable energy technologies showing a predicted 15.06 % improvement over the lean scheme



Based on the regulated power results indicated above the proposed scheme incorporating a renewable energy technology provides a carbon emissions reduction of 49.81 % when compared to the baseline Building Regulations 2013 (TER) compliant scheme. This demonstrates that the proposed scheme for Block B archives beyond Reading Plan requirement of 35%.

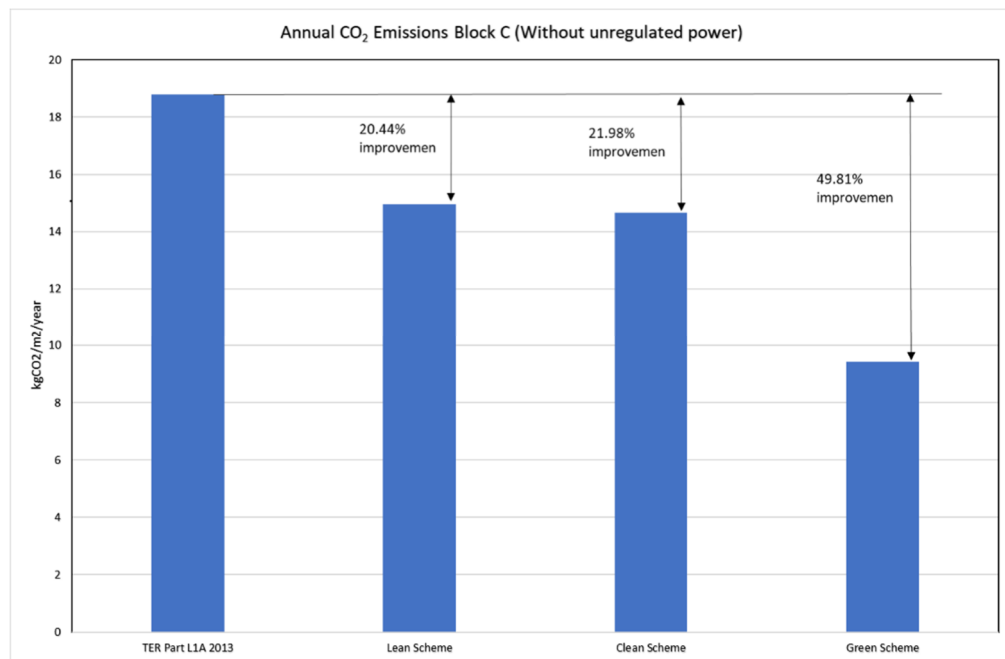


Block C

	Area Weighted kg CO ₂ /m ²			
	Baseline Scheme	Lean Scheme	Clean Scheme	LZC Scheme
Building Regulations Compliant	18.79	14.95	14.66	9.43
Allowing for Un-regulated Uses	38.29	34.45	34.16	28.93

These values are shown in diagrammatic form below that shows the following principles:

- The proposed scheme (LZC) assessment shows a predicted improvement of 49.81 % when compared to the baseline scheme
- The renewable energy technologies show a predicted improvement of 36.92 % over the lean scheme
- When un-regulated energy uses are taken into account the predicted overall improvement is 27.40 % compared to the baseline scheme with renewable energy technologies showing a predicted 16.02 % improvement over the lean scheme



Based on the regulated power results indicated above the proposed scheme incorporating a renewable energy technology provides a carbon emissions reduction of 49.81 % when compared to the baseline Building Regulations 2013 (TER) compliant scheme. This demonstrates that the proposed scheme for Block C archives beyond Reading Plan requirement of 35%.

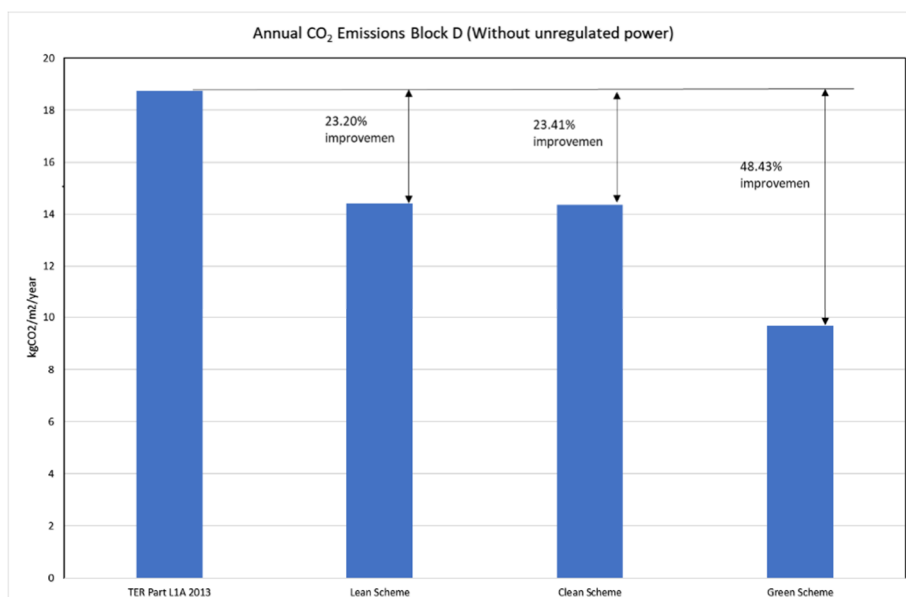


Block D

	Area Weighted kg CO ₂ /m ²			
	Baseline Scheme	Lean Scheme	Clean Scheme	LZC Scheme
Building Regulations Compliant	18.75	14.40	14.36	9.67
Allowing for Un-regulated Uses	37.55	33.2	33.16	28.47

These values are shown in diagrammatic form below that shows the following principles:

- The proposed scheme (LZC) assessment shows a predicted improvement of 48.43 % when compared to the baseline scheme
- The renewable energy technologies show a predicted improvement of 32.85 % over the lean scheme
- When un-regulated energy uses are taken into account the predicted overall improvement is 27.38 % compared to the baseline scheme with renewable energy technologies showing a predicted 14.25 % improvement over the lean scheme



Based on the regulated power results indicated above the proposed scheme incorporating a renewable energy technology provides a carbon emissions reduction of 48.43 % when compared to the baseline Building Regulations 2013 (TER) compliant scheme. This demonstrates that the proposed scheme for Block D archives beyond Reading Plan requirement of 35%.

The predicted annual CO₂ emissions data for the proposed scheme is as follows:

	Tonnes CO ₂ /year			Block D
	Block A	Block B	Block C	
Building Regulations Compliant	103.85	126.67	141.92	132.79
Allowing for Un-regulated Uses	326.21	381.46	435.40	390.95



9.00 CONCLUSIONS

In line with the relevant planning policies and guidelines the energy strategy has demonstrated that the proposed development could adopt the hierarchical approach of using passive and low energy design technologies to reduce the baseline energy demand and hence CO₂ emissions followed by the application of low and zero carbon technologies as appropriate.

The focus of the energy strategy is on CO₂ reduction from the building by adopting a highly efficient building envelope solution together with high efficiency mechanical and electrical services incorporating heat recovery. The renewable energy technologies assessment is based on using solutions that are technically proven with low maintenance implications taking into account the energy efficiency strategies being proposed in the current design.

The analysis has shown that by incorporating passive and low energy design measures there is a predicted reduction in Block A, Block B, Block C and Block D's annual CO₂ emissions, as indicated in the table below, from the baseline scheme.

Regulated CO ₂ Savings	
Tonnes CO ₂ /Year	%
223.53	22.28

This is achieved by the following elements:

- High performance glazing
- Improved building fabric thermal insulation
- Low building air leakage rate
- High efficiency heating and cooling plant
- Variable speed fans and pumps
- Low energy lighting (LED lighting)

The decentralised heating, cooling and power assessment has indicated that the application of a CHP system is viable for the development as there will be a constant demand for hot water from the residential apartments. This technology is now considered obsolete with the de-carbonisation of the electricity grid as described within section 5.00. A condensate heat pump system is proposed with capped off connection to join the district heating network when available. To follow Reading energy reporting hierarchy Lean, Clean and Green scheme are assessed.

The analysis shows that with the clean technology the predicted reduction in the development's annual CO₂ emissions, as indicated in the table below, from the baseline scheme.

Regulated CO ₂ Savings	
Tonnes CO ₂ /Year	%
228.56	22.79

The potential renewable energy technologies have been assessed taking into account the particular development constraints. The strategy is to utilise:



- Photovoltaic cells to provide a contribution to the electrical demand for all block

The analysis has shown that by incorporating this renewable energy technology in addition to the lean energy design measures there is a predicted reduction of annual CO₂ emissions from the baseline scheme as indicated in the table below:

Regulated CO ₂ Savings	
Tonnes CO ₂ /Year	%
497.96	49.64

The proposed scheme meets the requirements set by Building Regulation Part L1A for the new build residential development as well meeting the requirements set by Reading Plan of achieving an on-site carbon reduction of 35 %. To meet the zero-carbon requirement set by Reading, a off-set payment is proposed. The calculation of the payment based on the remaining carbon is demonstrated within executive summary at the beginning of this report.



Appendix 1
Fabric Efficiency



Building envelope thermal performance as detailed below:

Heat loss fabric element	U-Values (W/m ² .K)	Further details
Ground Floor	0.15	
Roof	0.15	
External wall	0.15	
Party walls	0	
Windows	1.4	G-Value:0.5

Air permeability (m³/hr.m² @50Pa for each apartments) to be accompanied by certificate in line with SAP requirements: 3 m³/hr.m² @50Pa



Appendix 2

Reading Heat Map Network

