

Joyce

17 Chorlton Street, Manchester M1 3HY

P01
ISSUE

Energy and Carbon Statement

CONSOLUX

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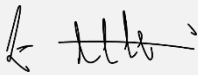
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This document requires the following approvals.
Signed approval forms are filed in the Management section of the project files.

Name	Signature	Title	Date of Issue
L Mckevitt		Operations Director	June 2025
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Distribution

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Executive summary

Energy and Carbon Proforma Non-residential

Major development (+1,000m²)

Version 1.0

GMCA GREATER
MANCHESTER
COMBINED
AUTHORITY

Project Name: Joyce

Application ref:

Date: 6/6/2025

		Ref. name	Joyce
		Area (m ² GIA)	11433
		Target values	Building 1
Minimise energy demand	Space heating demand (kWh/m ² GIA/yr)	≤ 15	4.24
	Space cooling demand (kWh/m ² GIA/yr)	≤ 15	8.37
	Calculation methodology used to calculate space heating demand and confirmation that this covers all homes/blocks	Predictive energy model	TM54
	Form factor per building	≤ 2	0.71
	Average external wall U-value (W/m ² K)	≤ 0.15	0.15-0.3
	Average window U-value (W/m ² K)	≤ 1 (triple)	1.2
	Air permeability rate (m ³ /h/m ² @ 50 Pa)	≤ 1	3
Maximise energy efficiency	BREEAM Ene 01 rating	Excellent	
	Energy use intensity (kWh/m ² GIA/yr)	-	81
	Calculation methodology used to calculate energy use intensity and confirmation that this covers all homes/blocks	Predictive energy model	TM54
Use renewable energy	PV footprint area (% of ground floor space)	-	5.20%
	Annual renewable energy generation (kWh/m ² building footprint/yr)	-	12.33
	Renewable energy balance (%)	-	2.43%
	Total energy used (kWh/yr)	-	954,155
	Total energy generated on-site (kWh/yr)	-	23,184

Use low carbon energy	Fossil fuel free (yes/no)	Yes	Yes
	Heat source	Electric	Electric
	Low Carbon Heat Appraisal completed	Yes	Yes
	Heat network suitability	-	No
	Exemption requested	-	Not needed
	Efficiency of heating system (SCOP)	≥ 3.5	3.93
	Carbon content of heat (gCO ₂ /kWh)	≤ 100	16.9
Reduce overheating risk	Has CIBSE TM52 been used to calculate overheating and does the building pass?	Yes	Yes
	What percentage of spaces are cooled? (% of GIA)	-	74%
	Has a CIBSE TM52 assessment been carried out using DSY2 and DSY3 weather files? Have any additional passive measures been included as a result?	Yes	Yes
Minimise embodied carbon	Upfront embodied carbon (kgCO ₂ e/m ² GIA)	-	588
	List top three materials with the highest upfront embodied carbon emissions (kgCO ₂ e/m ² GIA): Material 1	-	110.97
	Material 2	-	107.05
	Material 3		73.09
	Lifecycle embodied carbon (kgCO ₂ e/m ² GIA) - for large major developments only	-	1066
Offsets	Offset contribution (£)	-	

Table of Contents

1.0 Introduction	6
1.1 Overview	6
1.2 Objectives	6
1.3 Policy framework	6
2.0 Methodology	7
3.0 Building fabric and ventilation	8
3.1 Building form and heat loss envelope	8
3.2 Elevation design and window proportions	8
3.3 Heated and unheated spaces	9
3.4 Building fabric specifications and air tightness	9
3.5 Ventilation system	9
3.6 Space heating demand	10
4.0 Maximise energy efficiency	11
4.1 Energy Use Intensity	11
4.2 Efforts to reduce energy use of equipment	12
5.0 Renewable energy generation	13
5.1 Solar photovoltaic system	13
5.2 Renewable energy balance	13
6.0 Low carbon heating	14
6.1 Fossil fuel free	14
6.2 Proposed systems for heating and hot water	14
6.3 Proposed system for cooling	15
7.0 Overheating risk	16
7.1 Overheating risk assessment	16
8.0 Materials	17
8.1 Upfront embodied carbon	17
8.1.1 Summary of assessment	17
8.1.2 Design choices	17
8.2 Life cycle embodied carbon	18
9.0 Offsetting	19
10.0 BREEAM	20
10.1 Hotel	20
10.2 Commercial unit	20
11.0 Appendix	21

1.0 Introduction

1.1 Overview

This Energy and Carbon Statement has been prepared by Consolux M&E Consulting Ltd in support of the detailed planning application being submitted by The James (M1 Living) Limited ('the Applicant') to Manchester City Council (the 'Council') in support of a Full Planning Application for Joyce, 17 Chorlton Street, Manchester (Joyce by The James).

1.2 Objectives

- Outline how sustainability and the principles of net zero building in line with GMCA policies have been incorporated into the development proposal following the Net Zero guidance documents.
- Show compliance with the national and local policies around sustainability and energy efficiency.
- Set out the energy strategy for the proposed development.

1.3 Policy framework

National			Local
National Planning Policy Framework (2023) An economic objective A social objective An environmental objective			Guide to development in Manchester SPD (2007) Energy efficiency Renewable energy Environmental design Water management and weather resilience Waste management Construction management Biodiversity Waterways
Approved Document L 'Conservation of Fuel and Power in New Buildings'. Volume 2: Buildings other than dwellings (2021) with amendments (2023)			Manchester Core Strategy (2012) DM1 – Development management EN4 – Reducing CO ₂ emissions by enabling low and zero carbon development EN6 – Target framework for CO ₂ reductions from low or zero carbon energy supplies EN8 – Adaptation to climate change
Future Buildings Standards*			Places for Everyone – Joint Development Plan (2024) Policy JP – S2: Carbon and energy Policy JP – S3: Heat and energy networks Policy JP – S4: Flood risk and the water environment Policy JP – G8: A net enhancement of biodiversity and geodiversity
<i>*Not released at the time of this report</i>			

2.0 Methodology

The current Energy and Carbon Statement provides a comprehensive assessment of the Joyce scheme, where the selection of the appropriate energy strategies will ensure an efficient energy use and a significant reduction in energy consumption, carbon emissions, and cooling demand, demonstrating compliance with the national and local policies. Given the scale of the development, the methodology and structure of this document follows the requirements for 'Large major non-residential developments' (+5,000m²) as specified in the 'Submission Guidance of the Net Zero Design Guidance by the Greater Manchester Combined Authority. The assessment follows the Places of Everyone energy hierarchy (Figure 1) and the principles of a Net Zero Carbon building.

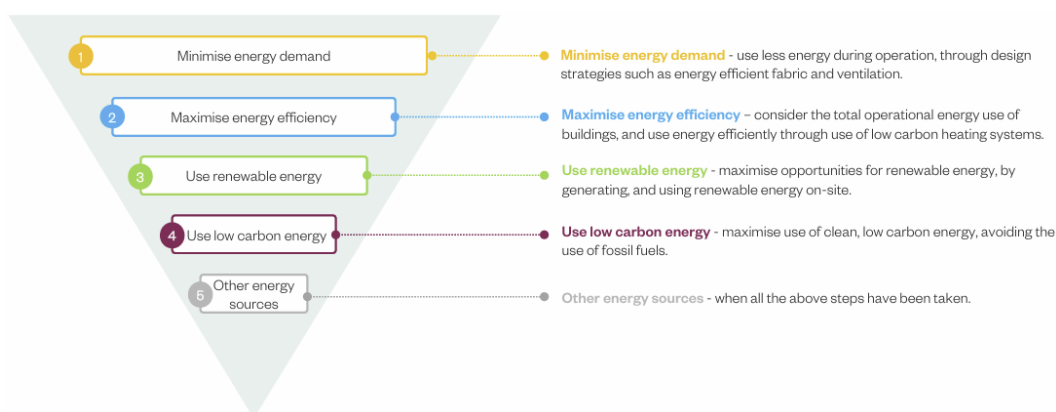


Figure 1 | Places for Everyone energy hierarchy

Table 1 below summarises the principles of a Net Zero Carbon building, the key performance indicators and metrics for large-major non-residential developments, and the modelling requirements to report them.

Principle	Key Performance Indicator	Targets	Modelling expectations
Minimise energy demand The building must achieve the space heating demand limits through energy efficient fabric and ventilation.	Space heating demand (kWh/m ² GIA/yr)	≤ 15 kWh/m ² .yr	
Maximise energy efficiency The building should meet the total energy use (regulated and unregulated), through low carbon and energy efficient heating systems. TANZ homes must meet an EUI limit.	Energy Use Intensity (kWh/m ² GIA/yr)	BREEAM Ene 01 Excellent	Predictive modelling expected (CIBSE TM54 methodology)
Use renewable energy The building should seek to maximise the generation of on-site renewable energy. There should be a balance between predicted annual energy use and annual renewable energy generation.	PV footprint area (%)	reporting	
Use low carbon energy The building must not connect to the gas network or, more generally, use fossil fuels through a heat network. Low carbon heating systems must be installed.	Fossil fuel free (yes/ no)	Yes	Enhanced low carbon heat appraisal expected
Reduce overheating risk The building must assess the risk of overheating and minimise it through window design and shading strategies. Mechanical cooling in residential developments should only be installed when justified.	Risk assessment/ full overheating assessment (pass/fail)	CIBSE TM52 'Pass'	Overheating modelling expected
Minimise embodied carbon Embodied carbon should be minimised through efficient design and low carbon material selection. The building should meet the upfront embodied carbon benchmarks and the highest carbon materials used should be reported.	Upfront embodied carbon (kgCO ₂ e/m ² GIA)	reporting	Upfront and life cycle embodied carbon modelling expected
Offsets The decision to include offsetting will be determined by each local authority in Greater Manchester, with options for offsetting currently under development.	Financial offset contribution	Options for offsetting currently under development and to be adopted by each local authority.	Operational offsets calculated

Table 1 | Summary of methodology for large major non-residential developments

3.0 Building fabric and ventilation

3.1 Building form and heat loss envelope

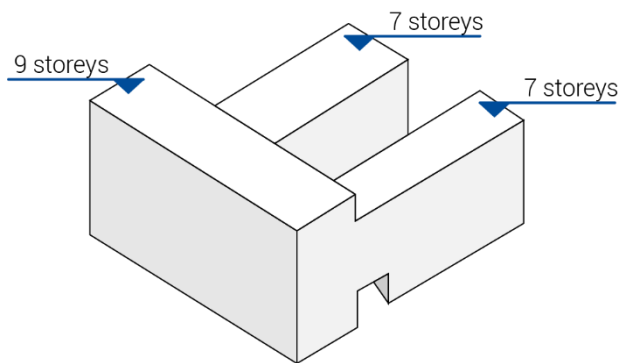


Figure 2 | Building volume

The building form is made up by three interconnected volumes. The central volume is 9-storey high while the two side volumes are 7-storey high. The central courtyard can be accessed by the public through a two-storey high tunnel. The facades are simple and the roofs are flat.

Unheated spaces:

- Plant room (00 Floor)
- Cycle store (00 Floor)
- Bin store (00 Floor)

Exposed external surface 10,261 m²

Gross internal floor area 11,433 m²

0.9
Form Factor

3.2 Elevation design and window proportions

North West				32.6% WWR
South West				31.8% WWR
South East				31.4% WWR
North East				26.7% WWR

Table 2 | WWR per elevation

3.3 Heated and unheated spaces

The scheme has three (3) unheated spaces, all located on the ground floor within the existing structure to be retrofitted:

- Bin store
- Plan room
- Cycle store

The drawings provided in Appendix A-1 shows the heated and unheated spaces following the conventions of the GMCA Net Zero Guidance. The following Architectural drawings were used as reference:

- 10531-SHA-ZZ-A-B5D9-G200-PL-00-001
- 10531-SHA-ZZ-A-B5D9-G200-SE-DD-001

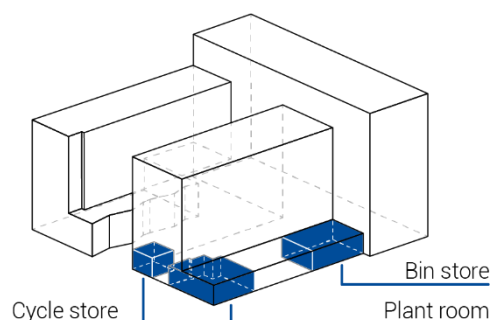


Figure 3 | Unheated spaces

3.4 Building fabric specifications and air tightness

Element	Proposed building fabric	Approved document L2 limiting values	
		Renovated/retained in existing buildings	New/replacement in new/existing building
External walls (New build)	0.15 W/m ² k	N/A	0.26 W/m ² k
External walls (Refurb)	0.3 W/m ² k	0.3 W/m ² k	N/A
Party walls (corridor)	0.0 W/m ² k	N/A	N/A
Ground floor	0.18 W/m ² k	0.25 W/m ² k	0.18 W/m ² k
Roof	0.18 W/m ² k	0.18 W/m ² k	0.18 W/m ² k
Glazing	1.2 W/m ² k G-value = 0.4	N/A	1.6 W/m ² k G-value = N/A
Air permeability	4.00 m ³ /(h.m ²) @50Pa	N/A	8.00m ³ /(h.m ²) @50Pa

Table 3 | Building fabric summary

3.5 Ventilation system

3.5.1.1 Suites

Ceiling-mounted Mechanical Ventilation with Heat Recovery (MVHR) units to provide efficient and effective ventilation for the suites, communal areas, and the commercial unit. These units are designed to fit into ceiling voids, making them ideal for spaces with height restrictions. Comfort cooling will be provided through a VRF system.

Ventilation Design: Each suite will be equipped with MVHR unit to ensure optimal indoor air quality and comfort. The unit will provide both supply and extract ventilation, recovering heat from the extract air to improve energy efficiency.

Pipe Materials and Fixing: The ductwork will be constructed using high-quality, low-profile ducting materials to fit within the ceiling voids. Secure fixing methods will be employed to ensure stability and performance.

Performance: The MVHR units are designed to deliver high airflow rates and heat recovery efficiency, maintaining comfortable temperatures and reducing energy consumption.

3.5.1.2 Landlord areas

The landlord areas within the ground floor as well as corridors are proposed to be primarily mechanically ventilated via MVHR system. MVHR units to be provided with fresh air and exhaust ductwork routed to louvres located within the façade. Comfort cooling will be provided to the spaces through a VRF system.

Ventilation Design: The communal areas will also utilise MVHR units to manage ventilation needs. These units will ensure that common areas have fresh air circulation and maintain a comfortable environment.

Pipe Materials and Fixing: Similar to the suites, the ductwork will be made from durable materials and securely fixed within the ceiling voids.

Performance: The units will operate efficiently, providing consistent ventilation and heat recovery to support the overall building performance.

3.5.1.3 Commercial unit

The Commercial units within the ground floor of the building are proposed to be primarily mechanically ventilated via MVHR system. MVHR units to be provided with fresh air and exhaust ductwork routed to louvres located within the façade. There is no provision for catering kitchen provision within the new build nor existing building. Comfort cooling will be provided through a VRF system.

Ventilation Design: The commercial unit will be equipped with MVHR units to handle the specific ventilation requirements of commercial spaces. These units will ensure that the commercial area has adequate air exchange and maintains a healthy indoor environment.

Pipe Materials and Fixing: The ducting for the commercial unit will be designed to accommodate higher airflow rates and will be securely fixed to ensure reliability.

Performance: The MVHR units will provide robust ventilation and heat recovery, supporting the commercial unit's operational needs and energy efficiency goals.

3.6 Space heating demand

The space heating demand of the scheme is estimated to be 4.24 kWh/m²/GIA/yr. This is 72% lower than the target value on the Energy and Carbon Proforma. The value has been calculated through predictive energy modelling following CIBSE TM54 methodology.

4.0 Maximise energy efficiency

The primary energy rate and primary carbon emissions rate of the scheme are lower than the targets set in the SBEM calculations for compliance with Building Regulations Part L 2021 (figures 4 and 5). Appendixes A-5a to A-5c contain the three BRUKL output documents run for the scheme. For a fair comparison of target vs. proposed primary energy rates and CO₂ emissions rate of the retrofitted section of the building, two BRUKL output documents are issued. This, because the main use of the building has changed. Appendix A-5a was run to calculate a 'notional' or 'baseline' scenario for the spaces in the existing structure, while Appendix A-5b was run to calculate the primary energy rate and CO₂ emissions rate for the proposed efficiency of the existing structure. As a result, the BER and BPER of the 'notional' or 'baseline BRUKL has been used as TER and TPER values. For the extension (new build) part of the building, a single BRUKL output document was used to compare TPER vs. BPER and TER vs. BER (Appendix A-5c).

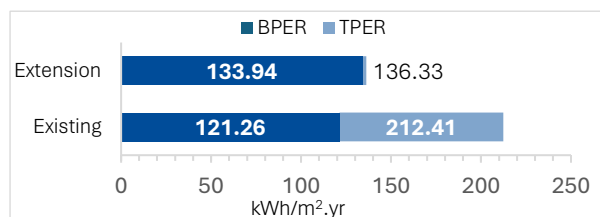


Figure 5 | Primary energy rate

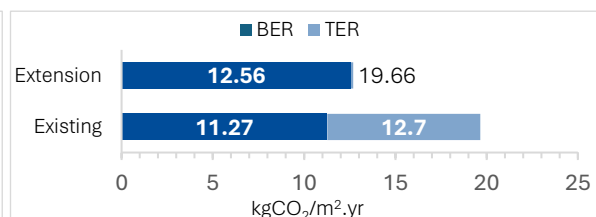


Figure 4 | CO₂ emissions rate

4.1 Energy Use Intensity

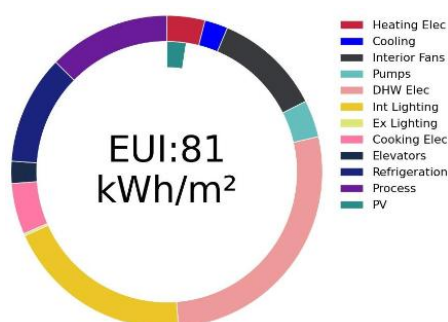


Figure 6 | Site Energy Use Intensity (EUI) after renewables

The Energy Use Intensity (EUI) of the scheme is estimated to be 84Wh/m²/GIA/yr excluding on-site energy generation from renewable energy technologies. After including on-site renewable energy generation from solar photovoltaic panels, the EUI decreases to 81Wh/m²/GIA/yr. The value has been calculated through predictive energy following CIBSE TM54 methodology. The calculations have been performed using IES Virtual Environment suite of tools. This software is a DCLG approved simulation environment that complies with the requirements of CIBSE Guide A and meets the classification of dynamic modelling under CIBSE AM11 'Building Energy and Environmental Modelling'. The full energy model output report can be found in Appendix A-4b.

Additional modelling was carried out to estimate the electricity costs in the future. Two additional scenarios were established using predicted future weather conditions as variable, using CIBSE 2050 and 2080 weather files. Figure 7 shows that future weather conditions will increase the cooling demand and reduce the need for heating. The predicted change in temperature does not seem to impact other categories.

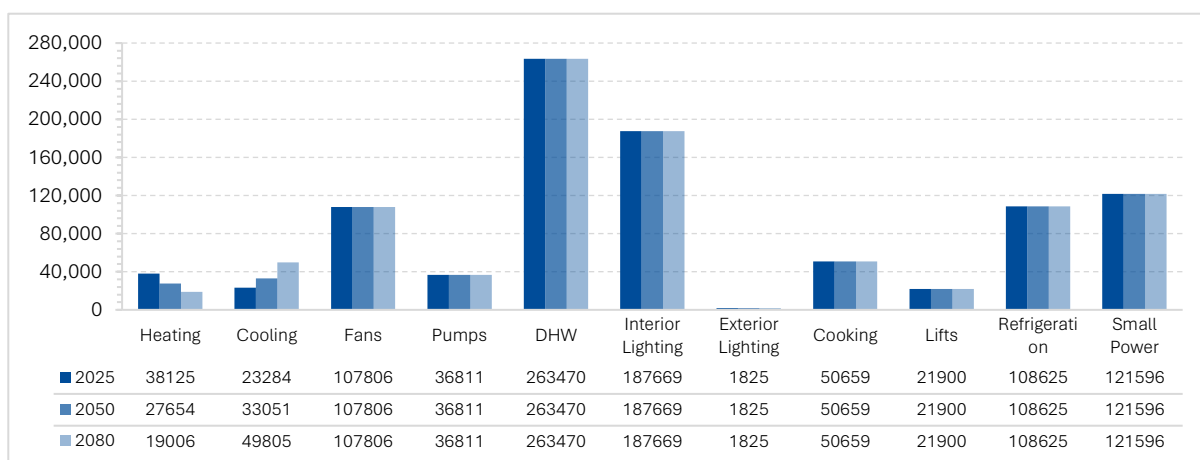


Figure 7 | Projected energy consumption

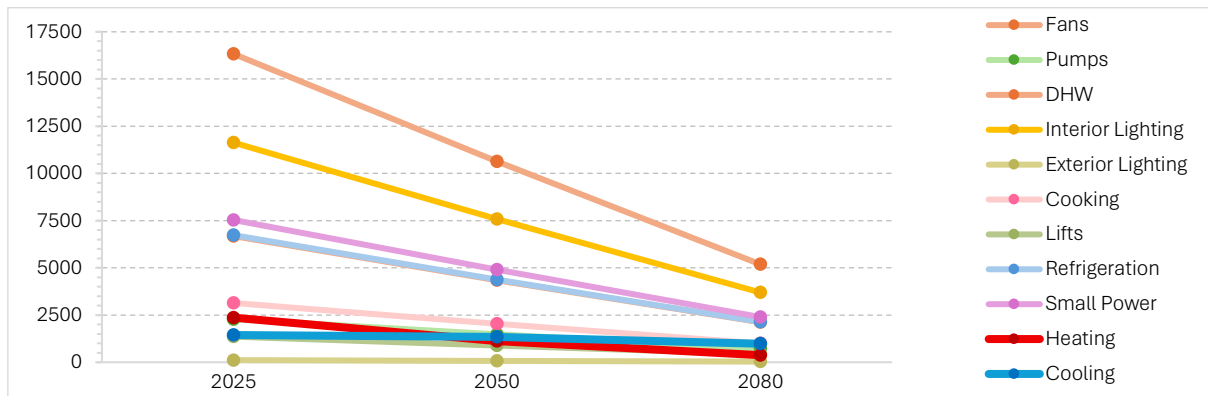


Figure 9 | Projected carbon emissions

Another key aspect to highlight is that the associated carbon emissions to the energy consumption will reduce significantly due to the grid decarbonisation. This, despite the increase in cooling demand due to predicted higher temperatures. The carbon factor used for 2025 is the average of the following 15 years (0.062). The carbon factor used for 2050 is the average of the values between 2026 and 2050 (0.04). The carbon factor used for 2080 is the average of the values between 2026 and 2080 (0.02). These values are sourced from HM Treasury Green Book (2023) as indicated in the GMCA Net Zero Design Guidance. In addition to this, it is also expected that the annual cost of meeting the predicted energy demand will reduce by 11% from 2025 to 2050 (Figure 9), and it is expected that the energy cost for the development will stay between £107,500 and £110,000 in the second half of the century. This is based on figures sourced from HM Treasury Green Book (2023).

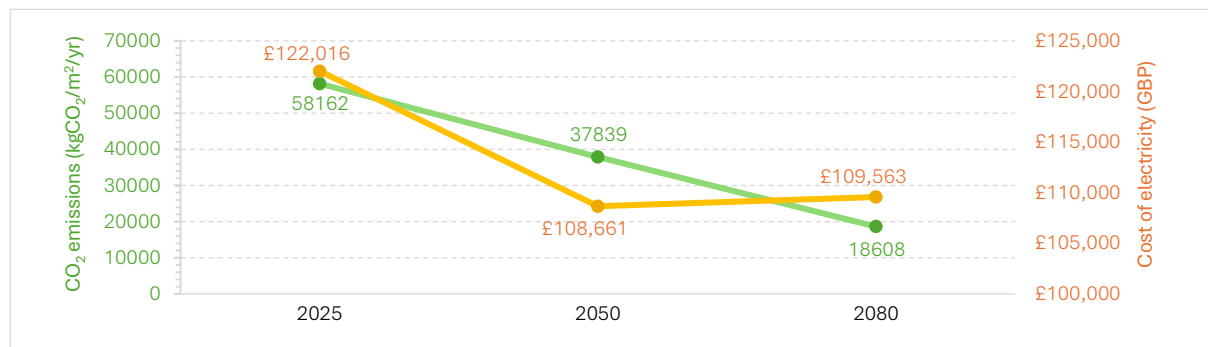


Figure 8 | Projected impact of future energy demand

4.2 Efforts to reduce energy use of equipment

Whilst building regulations address energy efficiency and the need to reduce CO₂ emissions from regulated energy usage, an often-overlooked aspect of energy efficiency is reducing energy consumption associated with unregulated energy usage, namely that from cooking and appliances as well as other small power equipment. Careful selection of high-quality energy efficient appliances within the apartments will reduce energy usage associated with appliances and cooking. The following unregulated energy loads have been applied to the energy modelling based on performance data for energy efficient white goods, cooking equipment and other small power loads:

White goods and cooking equipment to each suite

- Fridge Freezer – 111kWh per annum
- Dishwasher – 0.54kWh per cycle
- Oven – 0.69kWh per cycle
- Induction hob – 1.7kWh per cycle
- Microwave oven – 120kWh per annum
- Kettle – 200 kWh per annum

Small power to each suite

- Laptop/PC – 100kWh per annum
- Phone/tablet chargers – 30kWh per annum
- TV - 200kWh per annum
- Miscellaneous plug loads – 100 kWh per annum

Additional considerations

- Lift usage within the building has been estimated using NABERS as 21.9 MWh per annum
- Diversity factors and time-of-use profiles have been applied to the loads above:
 - Peak Cooking Loads – 6-8pm
 - Entertainment – 7-11pm

5.0 Renewable energy generation

5.1 Solar photovoltaic system

Description	System specification
Orientation	Southwest
Tilt	10° (horizontal)
Peak output (kWp)	22.88 kWp
Panel (maximum output, type of inverters)	440 W
Total number of PV panels	52
Number of inverters	1
PV area as percentage of ground floor area	5.2%
Expected annual renewable energy generation	23,184 kWh/yr
Annual renewable energy generation per m ² GIA	2.03 kWh/yr/m ² _{GIA}
Annual renewable energy generation per m ² building footprint	12.33 kWh/yr/m ² _{IP}
Balance between total energy use and renewable energy generation	2.43%
Shading constraints	N/A
Data source	Predictive modelling

Table 4 | Summary of proposed solar photovoltaic panel system



Figure 10 | PV layout

5.2 Renewable energy balance

The renewable energy balance is defined as the total annual generation of renewable energy on site as a proportion of the total annual energy used by the development. The renewable energy balance for the development based on the generation from the solar photovoltaic panels array is 2.43%.

$$2.43\% = \frac{23,184 \text{ kWh/yr (Annual generation)}}{954,155 \text{ kWh/yr (Total energy used)}}$$

Figure 11 | Renewable energy balance

6.0 Low carbon heating

6.1 Fossil fuel free

The scheme has been designed to not use fossil fuels to provide heating and/or hot water. All appliances are proposed as electric. There is no provision for a gas for connection point.

6.2 Proposed systems for heating and hot water

The current development is considered as a 'Major development' as the total area is larger than 1000m². As such, the location of the scheme (17 Chorlton Street, Manchester) is classified as 'Case 3' as it does not fall within the potential low carbon heat network area but within one of the Heat and Energy Network Opportunity Areas.

- **Case 1:** the site is within 500m of an existing low carbon heat network
- **Case 2:** the site is within 500m of a planned low carbon heat network
- **Case 3:** the site is within a low carbon heat network opportunity area
- **Case 4:** any other location in Greater Manchester

The District Heat Network Strategic Vision (2025) sets out a plan to advance heat networks in Greater Manchester, with zoning efforts underway since 2021. A pilot identified ten potential heat network zones and two energy centres, mapping out opportunities for sustainable heat infrastructure. The scheme in question is near the Manchester Civic Quarter Heat Network (MCQHN), which supplies heat and power to key city buildings, including Manchester Town Hall and cultural venues. The network is fuelled by a gas-fired CHP engine and gas boilers, generating 18.7 GWh of heat annually.

As of January 2025, a government update confirmed that MCQHN still relies on fossil fuels, meaning it is considered high carbon. Other heat networks in Media City and Wigan exist but are not viable connection points due to distance. While low-carbon heat networks are under development, their actual carbon impact will only be clear a year post-completion. Due to high carbon emissions from existing networks like MCQHN, major schemes are advised against connecting. Instead, a notional low-carbon heat network with 100gCO₂/kWh is proposed, based on projected future decarbonization efforts for said heat network.

The Low Carbon Heat Appraisal compared three options: a notional low carbon heat network assuming the decarbonisation of the current Manchester Civic Quarter Heat Network, a local VRF system, and a local biomass boiler. The appraisal assessed different key performance indicators in terms of environmental performance, impact on residents and building users, viability and infrastructure development, as indicated in the Net Zero Design Guidance published by GMCA.

The appraisal concluded that the VRF system is the most suitable technology to supply low carbon heating and domestic hot water to the development. Not only the capital costs are 30% lower than the notional low carbon heat network, but also the running costs -including the energy costs of heating and DHW, maintenance and



Figure 12 | Site location and 500m radius (in blue) in Greater Manchester heat network areas map (as of December 2024)

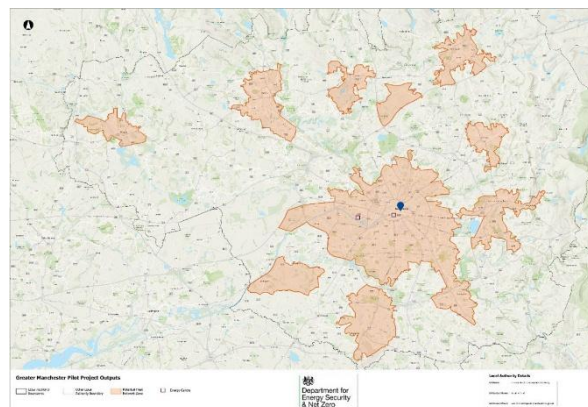


Figure 13 | Scheme location within Greater Manchester Heat Network zoning map



Figure 14 | Distance from scheme plant room to closest MCQHN connection point

replacement- which are estimated to be 58% lower than the notional case. On the other hand, the biomass boiler would also be a suitable option given the lower carbon content of heat delivered. However, the capital and running costs are not as low as the VRF and the implications on the local air quality pose a significant disadvantage compared to the VRF system, as the local air quality is already compromised due to the nearby coach station and car park building. The VRF system is to be located on the roof of the central block.

System considered	Carbon emissions (kg CO ₂ /kWh _{heat delivered})	Cost of heat (£/year)	Capital cost (£/unit)
Notional low carbon heat network	100 gCO ₂ /kWh	£232,050/yr	£ 1,463,467
VRF system	16.9 gCO ₂ /kWh	£77,760/yr	£1,026,195
Biomass boiler	14.4 gCO ₂ /kWh	£116,340/yr	£1,260,427

Table 5 | Low carbon heat appraisal summary

6.3 Proposed system for cooling

The VRF system specified in section 6.3 is expected to also provide cooling for the scheme. The plant is to be located on the roof of the central block (Figure 15).

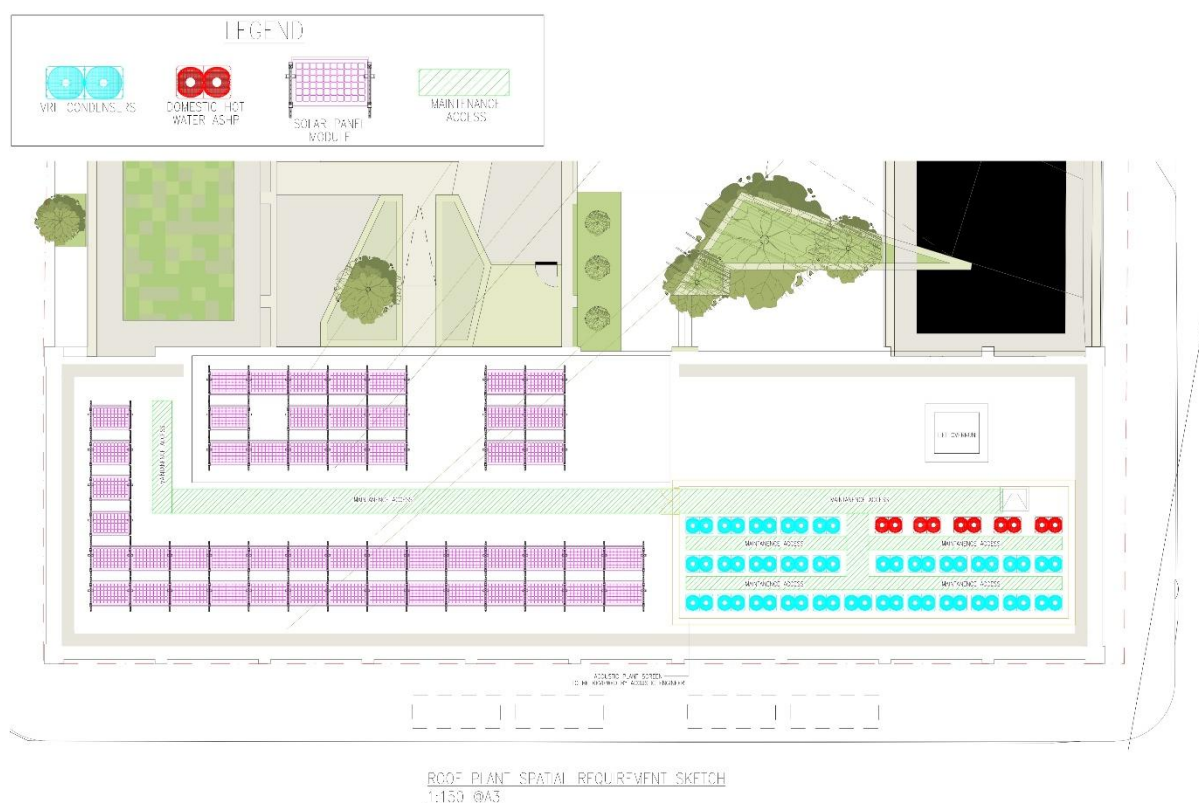


Figure 15 | Roof plant spatial requirement sketch

7.0 Overheating risk

7.1 Overheating risk assessment

The postcode of the site is M1 3HY. According to Appendix C in Approved Document O, schemes located in postcodes M1, M2, M3, M5, M15, M16 and M50 *‘may also have elevated night time temperatures.’* Hence, the scheme is in a high-risk area.

For this study, 366 occupied spaces within the scheme were assessed through dynamic simulation modelling. Internal heat gains of the suites follow CIBSE TM59 guidelines, and internal heat gains from all amenities and landlord areas follow NCM templates.

The design of the scheme does not include shading devices such as overhangs, brise soleil, or awnings. However, the wall reveals provide a degree of shading to the spaces.

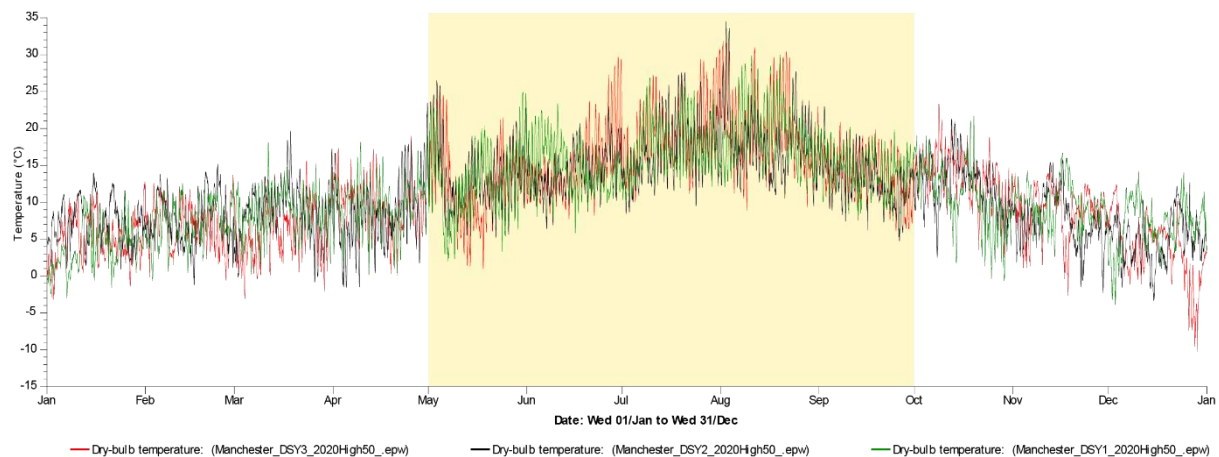


Figure 16 | Combined annual dry bulb temperature (DSY1, DSY2, and DSY3)

The study assessed the scheme under 9 different scenarios. Scenarios 7 to 9 show that the scheme effectively mitigates the risk of overheating through the combined ventilation strategy of MVHR + VRF (active cooling) in all occupied spaces given the restrictions that the current noise level on the site pose when considering a passive-only ventilation strategy, especially under DSY2 and DSY3 weather conditions as required by the GMCA.

The overheating assessment report can be found in appendix A-7, and the result of the simulations can be found in appendixes A-8a to A-8i.

8.0 Materials

8.1 Upfront embodied carbon

Upfront embodied carbon refers to the greenhouse gas emissions associated with material and construction stages: raw material supply, manufacture, transport and construction of all building elements. The full report can be found in appendix A-3.

8.1.1 Summary of assessment

The proposed development has been assessed for its upfront embodied carbon in accordance with guidance and performance benchmarks set out in the Greater Manchester Combined Authority (GMCA) Net Zero Design Guidance. The assessment was completed using the RICS Whole Life Carbon Assessment for the Built Environment (2023) methodology and has been undertaken using the eTool platform. The latest calculations confirm that the scheme, based on current design proposals, is on track to achieve an upfront embodied carbon of 588.88 kgCO₂e/m². Whilst the specific building type is not listed within LETI embodied carbon target alignment, the upfront embodied carbon could achieve a better rating at a later stage when all materials and elements have been defined during RIBA Stages 3 to 4. It is important to highlight that the associated carbon emissions to superstructure and substructure would be substantially higher. Section 5.2 of the Embodied carbon assessment expands on this. The full report can be found in appendix A-3.

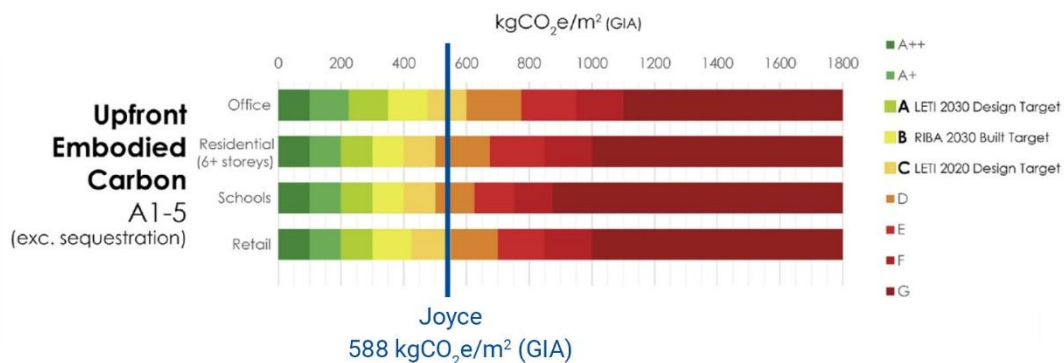


Figure 17 | Scheme upfront embodied carbon against LETI targets

8.1.2 Design choices

8.1.2.1 Structural lean design

The structural proposal has been designed to meet the architectural and servicing requirements.

8.1.2.2 Architectural lean design

The architectural design comprises the transformation of the existing 1973 office building including an element of new build on the existing car park. As most of the floor area comprises the retrofit of an existing building, the carbon associated to the entire scheme is expected to be lower compared to a full new-built proposal with the same floor area.

a. Façade design of the existing building

- The windows in the existing building are largely set within existing openings.

b. Façade design of the extension

- The elevations to Bloom Street and to the courtyard are treated differently for reasons of orientation/ventilation and privacy.
- On the street-facing elevation the principles of design are derived from adjacent Victorian warehouse building
- The upper floors are more open, reflecting the enhanced security and privacy requirements on the ground floor.
- The courtyard facing elevation does not have the same issues of privacy, solar shading or ventilation and so has a greater window to wall ratio.

c. Optimised metal façade elements

The perforated decorative metal panels within windows serve multiple purposes:

- Conceal the ventilation terminals for the ventilations systems for the suites

- Provide further shading to habitable rooms
- Reduce the glazed opening sizes.
- Act as guarding to prevent people or objects falling when panels are opened for passive ventilation.

8.1.2.3 Building services lean design

The M&E services have been designed to provide ventilation, extraction and comfort cooling through lean design. MVHR units provide ventilation and extraction, whilst heating and comfort cooling, and domestic hot water are provided through a VRF system, reducing the plant space, and simplifying maintenance. The lifespan of the systems range from 15 to 20 years. The selected refrigerant is R32 which has a lower Global Warming Potential and thus reducing the embodied carbon of the system -in addition of the possibility of targeting a higher BREEAM rating for the scheme.

8.2 Life cycle embodied carbon

The proposed development has been assessed for its upfront embodied carbon in accordance with guidance and performance benchmarks set out in the Greater Manchester Combined Authority (GMCA) Net Zero Design Guidance. The assessment was completed using the RICS Whole Life Carbon Assessment for the Built Environment (2023) methodology and has been undertaken using the eTool platform. The following modules provide a comprehensive overview of the carbon impacts associated with the development, from initial material extraction to end-of-life processes and potential future benefits beyond the building's life cycle.

	Modules A0 to A5	Modules B1 to B5	Modules C1 to C4
	Cover the upfront embodied carbon, including the raw material supply, transport, manufacturing, and construction processes.	Account for the in-use stage emissions, such as operational energy and water use, as well as maintenance and repair.	Examine the end-of-life carbon emissions, including deconstruction, transport, waste processing, and disposal.
Embodied carbon per GIA (kg CO ₂ e/m ²)	588 kg CO ₂ e/m ²	306 kg CO ₂ e/m ²	172 kg CO ₂ e/m ²
	1,066 kg CO₂e/m²		

Table 6 | Summary of life cycle embodied carbon assessment figures

The latest calculations confirm that the scheme, based on current design proposals, is on track to achieve a life cycle embodied carbon of 1,066 kgCO₂/m². Whilst the specific building type is not listed within LETI embodied carbon target alignment, the upfront embodied carbon could achieve a better rating at a later stage when all materials and elements have been defined during RIBA Stages 3-4. It is important to highlight that the associated carbon emissions to superstructure and substructure would be substantially higher. Section 5.2 of the Embodied carbon assessment expands on this. The full report can be found in appendix A-3.

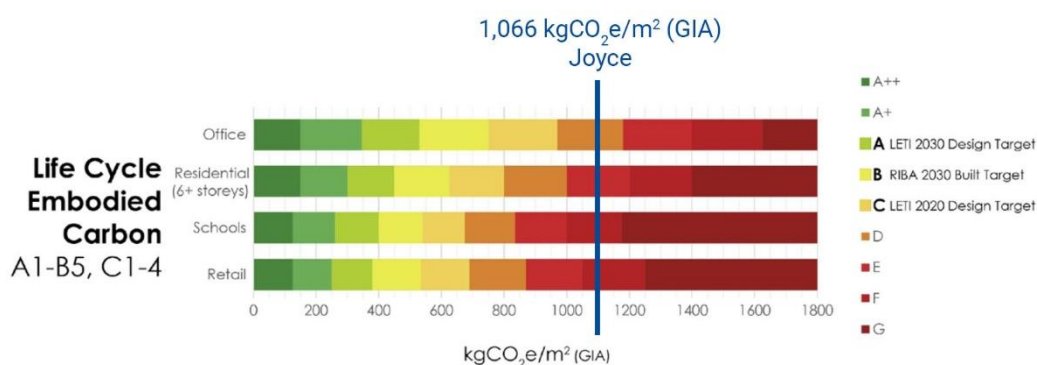


Figure 18 | Scheme Life Cycle embodied carbon against LETI targets

9.0 Offsetting

Whilst the development is expected to provide on-site renewable energy and low carbon heat through highly-efficient equipment, there is still a significant amount of energy consumption that would not be able to be met by on-site solar photovoltaic panels. As the Local Authority has the final decision to include offsetting -and currently options for offsetting are under development- this assessment does not calculate the cost of offsetting the remaining annual energy use.

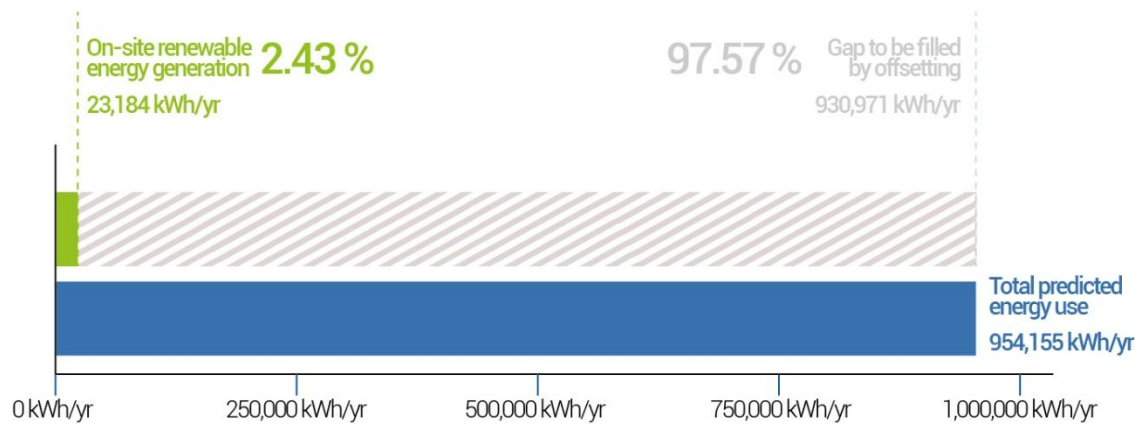


Figure 19 | Energy balance including offsetting

10.0 BREEAM

As part of the requirements for the Planning Application, BREEAM Pre-Assessment have been carried out for the scheme. Given the nature and complexity of it, 3 No. BREEAM Pre-Assessments are needed. The sub-sections below detail the conditions of the assessments. The Online reports of the Pre-Assessments can be found in appendixes A-6a to A-6c.

10.1 Hotel

The spaces within the existing structure are assessed under BREEAM UK Refurbishment & Fit-Out 2014. The building type has been defined as 'Other: Residential institution – Hotel'. The scope includes all four parts. The target score is 62.25% which is expected to achieve a 'Very Good' BREEAM rating.

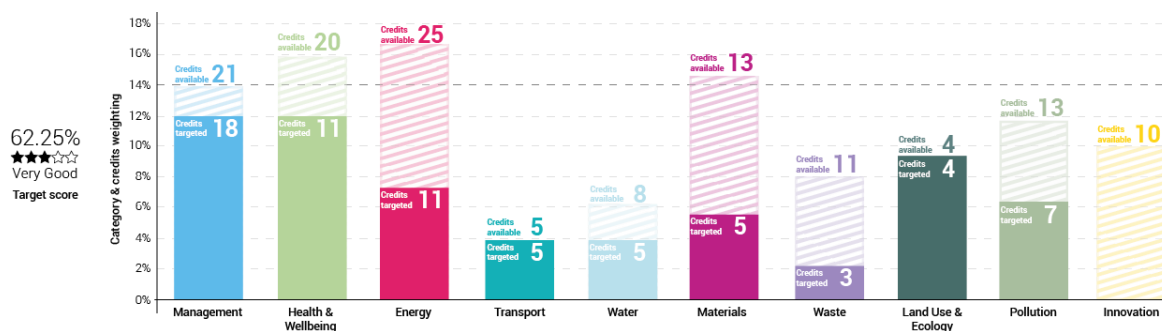


Figure 20 | BREEAM UK RFO 2014 Hotel (summary)

The spaces within the extension are assessed under BREEAM UK New Construction Version 6.1. The building type has been defined as 'Residential institution – short term stay (Hotel, hostel, boarding and guest house)'. The scope is 'Fully fitted'. The target score is 61.31% which is expected to achieve a 'Very Good' BREEAM rating.

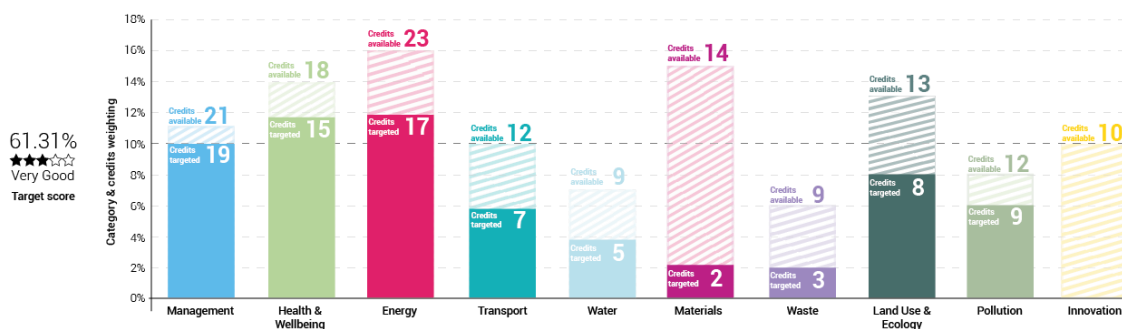


Figure 21 | BREEAM UK NC 2018 Hotel (summary)

10.2 Commercial unit

The commercial unit within the existing structure is assessed under BREEAM UK Refurbishment & Fit-Out 2014. The building type has been defined as 'Retail – Shop'. The scope includes only Part 1. The target score is 58.33% which is expected to achieve a 'Very Good' BREEAM rating.

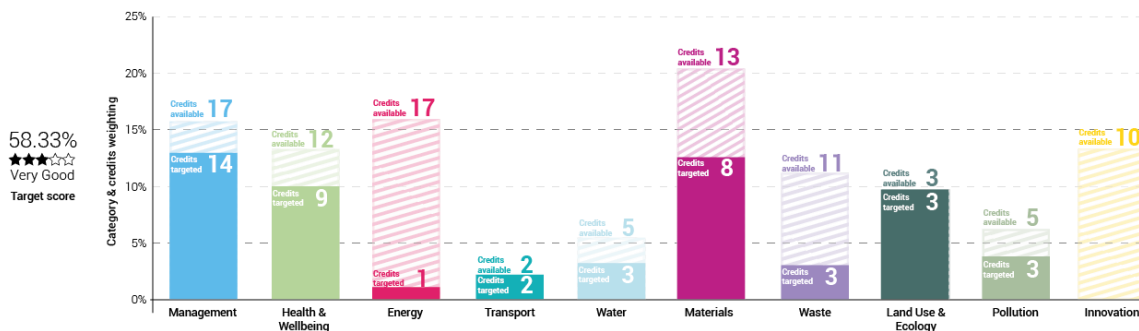


Figure 22 | BREEAM UK RFO 2014 Retail (summary)

11.0 Appendix

Appendix	Description	Page
A-1	Thermal line strategy	22
A-2	Low carbon heat appraisal	24
A-3	Embodied carbon assessment	37
A-4a	Energy Output Report: Notional low carbon heat network	49
A-4b	Energy Output Report: VRF system	51
A-4c	Energy Output Report: Biomass boiler	53
A-5a	BRUKL Output Document: Boulton House - Notional	55
A-5b	BRUKL Output Document: Boulton House – Existing (Refurbished)	77
A-5c	BRUKL Output Document: Boulton House - Extension	99
A-6a	BREEAM Pre-Assessment: BREEAM UK RFO 2014 - Hotel	110
A-6b	BREEAM Pre-Assessment: BREEAM UK NC v6.1 - Hotel	147
A-6c	BREEAM Pre-Assessment: BREEAM UK RFO 2014 - Retail	181
A-7	Thermal comfort assessment: CIBSE TM52	215
A-8a	CIBSE TM52 calculation results: Scenario 1	236
A-8b	CIBSE TM52 calculation results: Scenario 2	238
A-8c	CIBSE TM52 calculation results: Scenario 3	244
A-8d	CIBSE TM52 calculation results: Scenario 4	250
A-8e	CIBSE TM52 calculation results: Scenario 5	256
A-8f	CIBSE TM52 calculation results: Scenario 6	262
A-8g	CIBSE TM52 calculation results: Scenario 7	268
A-8h	CIBSE TM52 calculation results: Scenario 8	274
A-8i	CIBSE TM52 calculation results: Scenario 9	280

Appendix A-1

Thermal line strategy



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1.1 Thermal line strategy – Ground floor



1.2 Thermal line strategy – Section



Appendix A-2

Low carbon heat appraisal



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P01
ISSUE

Low carbon heat appraisal

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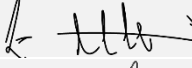
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Name	Signature	Title	Date of Issue
L Mckevitt		Operations Director	June 2025
R Greenough		Director	June 2025

Distribution

Name	Title	Date of Issue
Grant Sulkin	Director	June 2025

Note: Unless otherwise noted herein, the conclusions and recommendations contained in this report are based on the information supplied by the Client and visual inspection and testing (if any) described within. Consolux M&E Consulting Ltd. can accept no liability in respect of differences between the actual structure and the information supplied except:

- (i) Where these are clear by visual inspection or
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Table of Contents

1.0 Introduction	4
1.1 Overview	4
1.2 Objectives	4
2.0 Policy Framework	5
2.1 Local	5
2.1.1 Places for Everyone Joint Development Plan 2022-2039 (2024)	5
2.1.2 GMCA Net Zero Guidance: Part 2 (2025)	5
3.0 Project information	6
4.0 Case identification	7
5.0 Low carbon heating options	9
5.1 Notional low carbon heat network	9
5.2 Variable Refrigerant Flow (VRF) system	9
5.3 Biomass boiler	10
6.0 Conclusion	11
7.0 References	12

1.0 Introduction

1.1 Overview

Consolux M&E Consulting Ltd have been appointed to undertake Low Carbon Heat Appraisal of the Joyce by The James scheme to identify the most suitable technology to provide low carbon heating and hot water for the development. A low carbon heat appraisal has been elaborated following the Net Zero Guidance published in March 2025 by the Greater Manchester Combined Authority.

This report compares identifies the possibility of connecting to an existing or notional district heating network and additional low carbon heat options comparing various key performance indicators.

1.2 Objectives

The following objectives frame the scope of the current assessment:

- Explore Low-Carbon technologies
- Analyse upfront costs
- Estimate the running costs of managing the heat demand
- Assess the potential impact on surroundings in terms of air quality

2.0 Policy Framework

2.1 Local

2.1.1 Places for Everyone Joint Development Plan 2022-2039 (2024)

2.1.1.1 Policy JP-S3: Heat and energy networks policy

The provision of decentralised energy infrastructure is critical to the delivery of our objectives for low carbon growth, carbon reductions and an increase in local energy generation. The following measures will help to achieve this:

1. Delivery of renewable and low carbon energy schemes will be supported with particular emphasis on the use of decentralised energy networks in areas identified as 'Heat and Energy Network Opportunity Areas'. These have been identified where:
 - a. Existing heat/energy networks are operational or have been commissioned.
 - b. Proposals for new heat networks/energy networks are being progressed, or future opportunities have been in city-region master planning.
 - c. Sufficient density of existing heat demand occurs; and
 - d. Significant future development is proposed at the strategic development locations.
2. Within the identified 'Heat and Energy Network Opportunity Areas', unless it can be demonstrated that there are more effective alternatives for minimising carbon emissions or such connection is not practicable or financially viable, it is expected that:
 - a. New residential developments that are '10 dwellings or more' or other developments over 1,000m² floorspace shall:
 - i. Connect to an existing or planned heat/energy network or be designed to enable future connection (where within 500m of such network); and/or
 - ii. Install a site-wide or communal heat/energy network solution.
 - b. An expectation that new industrial development will demonstrate that opportunities for using waste heat locally have been fully examined and included in proposals.
 - c. An expectation that where publicly-owned buildings and assets adjoin new major development sites, opportunities for these buildings and assets to connect to site-wide proposals will be considered; and
 - d. An expectation that any site-wide networks will be designed so as to enable future expansion to adjoining buildings or assets as appropriate.

2.1.2 GMCA Net Zero Guidance: Part 2 (2025)

Major applications will be expected to submit a summary Low Carbon Heat Appraisal (e.g. 1-2 pages), reporting predicted performance of the proposed system against the KPIs. See page 20 for more information.

All major applications for which cases 1, 2 or 3 below apply will be required to include a comparison of the proposed system against selected alternatives, including a low carbon heat network and an on-site communal heating system.

- **Case 1:** the site is within 500m of an existing low carbon* heat network
- **Case 2:** the site is within 500m of a planned low carbon* heat network
- **Case 3:** the site is within a low carbon* heat network opportunity area
- **Case 4:** any other location

Although each application will be judged in its own merits, major applications in cases 1 or 2 above, and particularly those of a large scale (i.e. more than 150 homes and/or more than 5,000 m² GIA) will be expected to install a communal heating system and connect or commit to connect to the low carbon heat network 'unless it can be demonstrated that there are more effective alternatives for minimising carbon emissions or such connection is not practicable or financially viable' in line with Policy JP-S3.

*A heat network is deemed to be 'low carbon' when the carbon content of heat it delivers to each unit is less than 100 gCO₂/kWh.

3.0 Project information

The scheme to be assessed is 'Joyce by The James' located in 17 Chorlton Street, Manchester, consisting of the transformation of the existing 1973 office building (known as Boulton House) including an element of new build on the existing car park, into serviced apartment accommodation which will offer short-term accommodation as an alternative to hotels for visitors to the city, including a central courtyard on the ground floor.

The site has an area of 0.25 ha and is located to the north-east of Chorlton Street, between Major Street and Bloom Street, on the edge of Manchester's Gay Village and the Portland Street area. The Site is within a highly accessible location in Manchester City Centre and is well-served by public transport, located directly opposite Manchester Central Coach Station and within a short walk from Manchester Piccadilly and Oxford Road train stations. The Site is located outside of, but adjacent to, the Portland Street SRF area to the west of Chorlton Street. The SRF area comprises land bounded by Portland Street, Bloom Street, Abingdon Street and Chorlton Street.

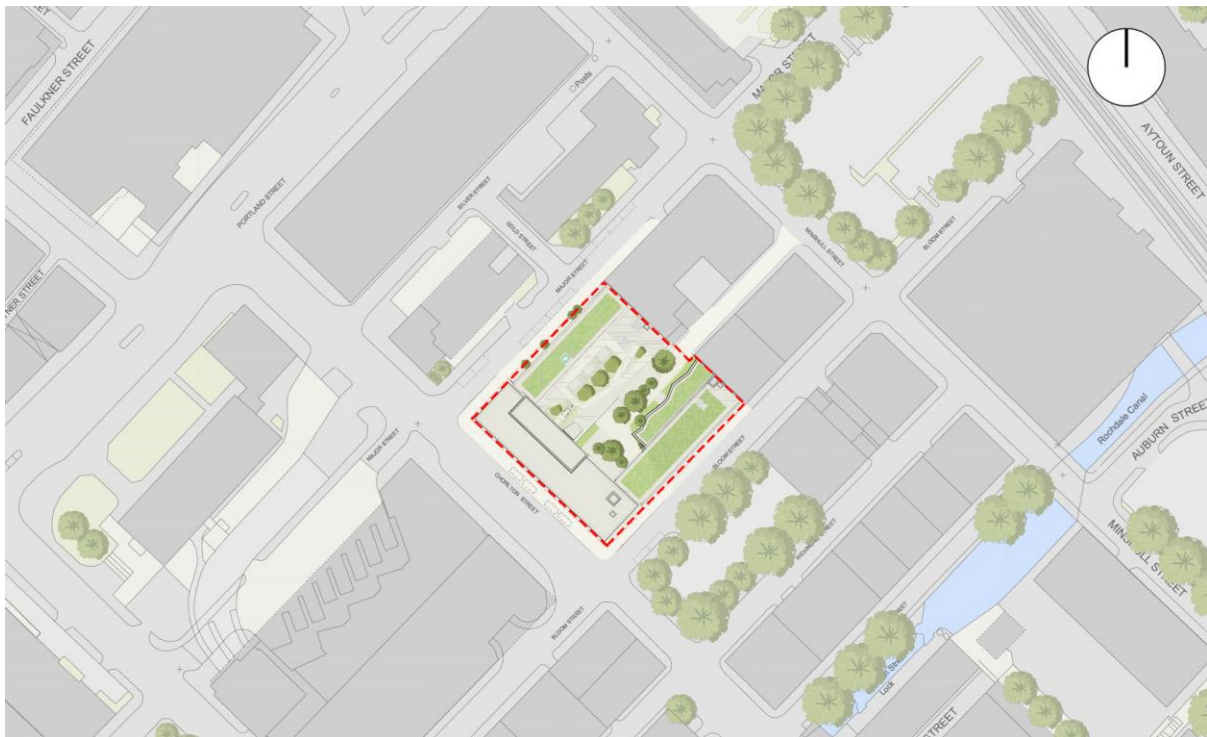


Figure 1 | Site location

4.0 Case identification

Developments that are larger than 10 homes and/or 1000m² of non-residential space are considered 'Major developments'. These are likely to be located in four different types of locations, which will affect how they should apply Policy JP-S3:

- **Case 1:** the site is within 500m of an existing low carbon* heat network
- **Case 2:** the site is within 500m of a planned low carbon* heat network
- **Case 3:** the site is within a low carbon* heat network opportunity area
- **Case 4:** any other location

The proposed scheme is located in 17 Chorlton Street, Manchester. Figure 2 on the right shows the location of the scheme (in blue) on the Map of Greater Manchester showing the three different types of heat network areas (as of December 2024). The site of the scheme does not fall within the potential low carbon heat network area but within one of the Heat and Energy Network Opportunity Areas, hence location of the scheme is classified as 'Case 3'.



Figure 2 | Site location and 500m radius (in blue) in Greater Manchester heat network areas map (as of December 2024)

District Heat Network Strategic Vision (2025) outlined a draft strategic vision for progressing Heat Networks in Greater Manchester. GMCA has been working on heat network zoning since 2021, and the initial heat network zoning pilot identified ten potential heat network zones and two energy centres. Figure 3 below shows in blue the location of the scheme within the Greater Manchester Heat network zoning map (elaborated by the Department for Energy Security & Net Zero)

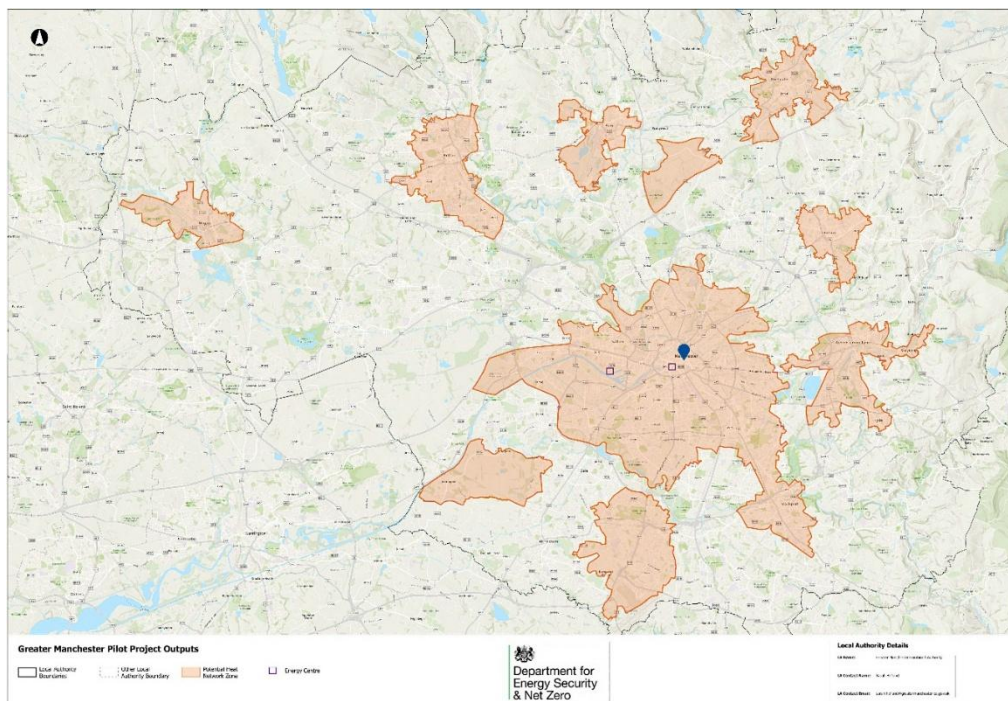


Figure 3 | Scheme location within Greater Manchester Heat network zoning map

The scheme is located close to the Manchester Civic Quarter Heat Network (MCQHN). This heat network is located in the heart of the city and provides heat and power to Manchester Town Hall and Town Hall

Extension, Central Library, Manchester Central Convention Centre, The Bridgewater Hall, Heron House and the Manchester Art Gallery. The heat network is fuelled by a 3.3MWe CHP engine and two 12MW gas boilers and was expected to export 18.7 GWh of heat per annum.



Figure 4 | Location of Manchester Civic Quarter Heat & Power Network and Energy Centre. Source: TP-Heat Networks

In January 2025, the Department for Energy Security and Net Zero published the Q4 2024 update of the Heat Network Planning Database. The document confirms that by the time of publication the heat from the MCQHN is gas. The generation from the primary plant is from a gas-fired CHP and the generation from the secondary plant is a gas boiler. The other two operational heat network are located in Media City and Wigan, hence connection is not viable. Whilst the document shows that there are currently low carbon heat networks under construction and waiting for planning permission, the carbon factors of these will not be known until they are fully operable for at least one year after completion of works.

The distance between the scheme and the closest connection point to the MCQHN (Manchester Art Gallery) is ~450m (Figure 5). The Part 2 of the Net Zero Guidance published by GMCA mentions that given that most of the existing heat networks use fossil fuels and are high carbon -which is the case of the MCQHN- major schemes are not recommended to connect to them. As such, the appraisal will include a notional low carbon heat network with a carbon content of heat delivered of 100 gCO₂/kWh assuming the maximum carbon content of delivered heat after the future decarbonisation of the current Manchester Civic Quarter Heat Network.

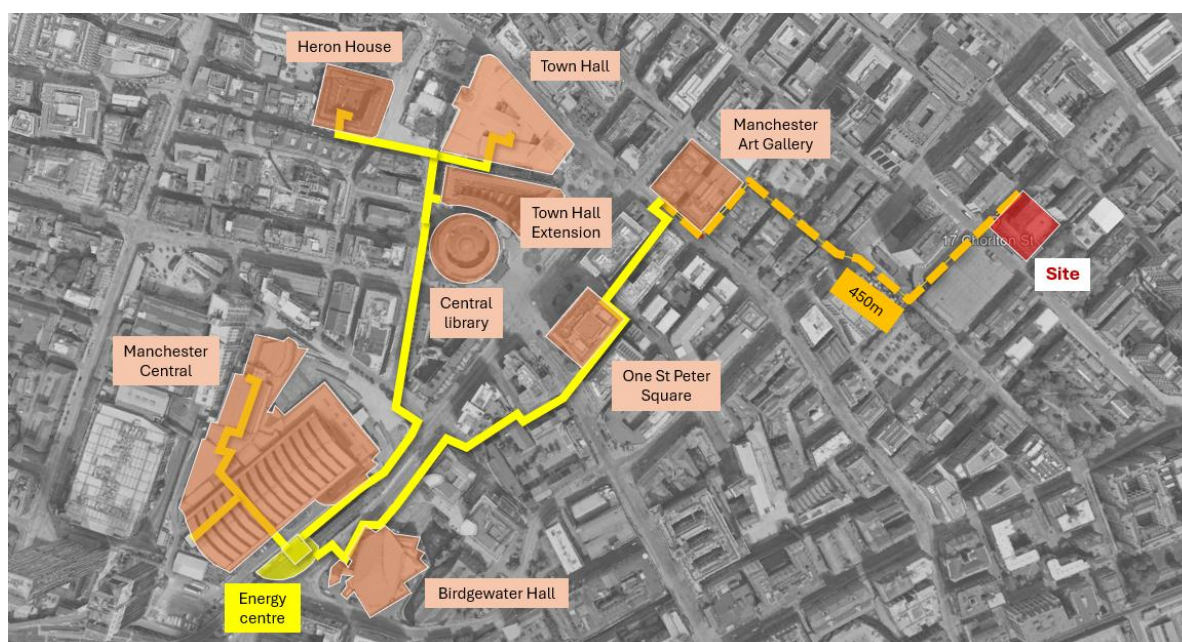


Figure 5 | Distance from site to closest DHN connection point

5.0 Low carbon heating options

5.1 Notional low carbon heat network

Performance area	Key performance indicator	Unit
Environmental performance	Fossil fuel use	No
	Carbon content of heat delivered (As per Net Zero Guidance)	100 gCO ₂ /kWh <i>Carbon emission factor = 0.0689</i>
	Local pollution	N/A
Impact on residents/building users	Estimated energy costs for heating and hot water	£232,050/yr DHW = 1,226 MWh Heating = 321 MWh
	Estimated maintenance costs	£2,490/yr
	Estimated replacement costs	£18,986/yr
Impact on viability	Estimated capital cost of heating system	£498,579 Internal pipework
		£720,725 External pipework
		£252 'Works on the highway' permission application
		£243,911 Main contractor allowance
Infrastructure development	Connection to low carbon heat network	Yes
	Scale of application	11,433 m ² GIA

5.2 Variable Refrigerant Flow (VRF) system

Performance area	Key performance indicator	Unit
Environmental performance	Fossil fuel use	No
	Carbon content of heat delivered (HM Treasury Green Book 15yr average)	16.9 gCO ₂ /kWh <i>Carbon emission factor = 0.062</i>
	Local pollution	N/A
Impact on residents/building users	Estimated energy costs for heating and hot water	£77,760/yr DHW = 263 MWh Heating = 25 MWh
	Estimated maintenance costs	£2,611 /yr
	Estimated replacement costs	£26,108/yr = 15-20 years lifespan
	Additional operating costs compared with benchmark low carbon heating system	-58%
Impact on viability	Estimated capital cost of heating system	£522,156 System
		£373,500 Installation
		£130,539 Main contractor allowance
Infrastructure development	Additional cost compared with benchmark low carbon heating system	-30 %
	Connection to low carbon heat network	No
	Scale of application	11,433 m ² GIA

5.3 Biomass boiler

Performance area	Key performance indicator	Unit
Environmental performance	Fossil fuel use	No
	Carbon content of heat delivered (Greenhouse gas reporting: conversion factors 2024)	14.4 gCO ₂ /kWh Carbon emission factor = 0.01132
	Local pollution	Combustion may result in the emission of volatile compounds.
Impact on residents/building users	Estimated energy costs for heating and hot water	£116,340/yr DHW = 1,090 MWh Heating = 266 MWh
	Estimated maintenance costs	£15,000/yr
	Estimated replacement costs	£54,029/yr = 12 years lifespan
	Additional operating costs compared with benchmark low carbon heating system	-27%
Impact on viability	Estimated capital cost of heating system	£648,342 System
		£225,000 Installation
		£387,085 Main contractor allowance
Infrastructure development	Additional cost compared with benchmark low carbon heating system	-14 %
	Connection to low carbon heat network	No
	Scale of application	11,433 m ² GIA

6.0 Conclusion

Consolux M&E Consulting Ltd have been appointed to undertake Low Carbon Heat Appraisal of the Joyce by The James scheme to identify the most suitable technology to provide low carbon heating and hot water for the development. A low carbon heat appraisal has been elaborated following the Net Zero Guidance published in March 2025 by the Greater Manchester Combined Authority.

The current development is considered as a 'Major development' as the total area is larger than 1000m². As such, the location of the scheme (17 Chorlton Street, Manchester) is classified as 'Case 3' as it does not fall within the potential low carbon heat network area but within one of the Heat and Energy Network Opportunity Areas.

This assessment has compared three options: a notional low carbon heat network assuming the decarbonisation of the current Manchester Civic Quarter Heat Network, a local VRF system, and a local biomass boiler. After comparing different key performance indicators in terms of environmental performance, impact on residents and building users, viability and infrastructure development, this appraisal demonstrates that the VRF system is the most suitable technology to supply low carbon heating and domestic hot water to the development. Not only the capital costs are 30% lower than the notional low carbon heat network, but also the running costs -including the energy costs of heating and DHW, maintenance and replacement- which are estimated to be 58% lower than the notional case. On the other hand, the biomass boiler would also be a suitable option given the lower carbon content of heat delivered. However, the capital and running costs are not as low as the VRF and the implications on the local air quality pose a significant disadvantage compared to the VRF system, as the local air quality is already compromised due to the nearby coach station and car park building.

System considered	Carbon emissions (kg CO ₂ /kWh _{heat delivered})	Cost of heat (£/year)	Capital cost (£/unit)
Notional low carbon heat network	100 gCO ₂ /kWh	£232,050/yr	£1,463,467
VRF system	16.9 gCO ₂ /kWh	£77,760/yr	£1,026,195
Biomass boiler	14.4 gCO ₂ /kWh	£116,340/yr	£1,260,427

Table 1 | Low carbon heat appraisal summary

7.0 References

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Appendix A-3

Embodied carbon statement



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P01
ISSUE

Embodied carbon assessment

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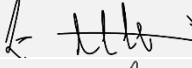
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Author	Purpose	Revision	Date of Issue
Alessandra Meza	Preliminary Issue	1	June 2025

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Signed approval forms are filed in the Management section of the project files.

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L Mckevitt		Operations Director	June 2025
R Greenough		Director	June 2025

Distribution

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Grant Sulkin	Director	June 2025

Note: Unless otherwise noted herein, the conclusions and recommendations contained in this report are based on the information supplied by the Client and visual inspection and testing (if any) described within. Consolux M&E Consulting Ltd. can accept no liability in respect of differences between the actual structure and the information supplied except:

- (i) Where these are clear by visual inspection or
- (ii) Where physical investigation has been undertaken by, or under the control of Consolux M&E Consulting Ltd., and then only to the extent of such physical investigation.

Any information provided by Consolux M&E Consulting Ltd., that are deemed to contradict or differ from this statement should be brought to the attention of Consolux M&E Consulting Ltd., immediately for confirmation and rectification. If this information is not provided prior to submission of documents for planning applications, Consolux M&E Consulting Ltd. is absolved of responsibility.

Table of Contents

1.0 Introduction	4
1.1 Overview	4
1.2 Policy Framework	4
1.2.1 Local	4
2.0 Project information	5
3.0 Methodology	6
3.1 Life cycle embodied carbon stages	6
4.0 Results	7
4.1 Carbon emissions by life cycle embodied carbon modules	7
4.2 Carbon savings from retained elements	7
4.3 Upfront embodied carbon	8
4.3.1 Top three carbon-intensive materials	8
4.4 Actions	9
5.0 Conclusion	10

1.0 Introduction

1.1 Overview

This Embodied carbon assessment has been prepared by Consolux M&E Consulting Ltd in support of the detailed planning application being submitted by The James (M1 Living) Limited ('the Applicant') to Manchester City Council (the 'Council') in support of a Full Planning Application for Joyce, 17 Chorlton Street, Manchester (Joyce by The James).

1.2 Policy Framework

1.2.1 Local

1.2.1.1 Places for Everyone Joint Development Plan 2022-2039 (2024)

a. Policy JP-S3: Heat and energy networks policy

The provision of decentralised energy infrastructure is critical to the delivery of our objectives for low carbon growth, carbon reductions and an increase in local energy generation. The following measures will help to achieve this:

1. Delivery of renewable and low carbon energy schemes will be supported with particular emphasis on the use of decentralised energy networks in areas identified as 'Heat and Energy Network Opportunity Areas'. These have been identified where:
 - a. Existing heat/energy networks are operational or have been commissioned.
 - b. Proposals for new heat networks/energy networks are being progressed, or future opportunities have been in city-region master planning.
 - c. Sufficient density of existing heat demand occurs; and
 - d. Significant future development is proposed at the strategic development locations.
2. Within the identified 'Heat and Energy Network Opportunity Areas', unless it can be demonstrated that there are more effective alternatives for minimising carbon emissions or such connection is not practicable or financially viable, it is expected that:
 - a. New residential developments that are '10 dwellings or more' or other developments over 1,000m² floorspace shall:
 - i. Connect to an existing or planned heat/energy network or be designed to enable future connection (where within 500m of such network); and/or
 - ii. Install a site-wide or communal heat/energy network solution.
 - b. An expectation that new industrial development will demonstrate that opportunities for using waste heat locally have been fully examined and included in proposals.
 - c. An expectation that where publicly-owned buildings and assets adjoin new major development sites, opportunities for these buildings and assets to connect to site-wide proposals will be considered; and
 - d. An expectation that any site-wide networks will be designed so as to enable future expansion to adjoining buildings or assets as appropriate.

1.2.1.2 GMCA Net Zero Design Guidance: Part 3 (2025)

Part 3 'Submission Guidance of the Greater Manchester Combined Authority Net Zero Design Guidance requires the reporting of upfront embodied carbon and life cycle embodied carbon for large major non-residential development projects. The same guidance requires to follow the methodology defined RICS Whole Life Carbon Assessment for the Built Environment version 2 (2023).

2.0 Project information

The scheme to be assessed is 'Joyce by The James' located in 17 Chorlton Street, Manchester, consisting of the transformation of the existing 1973 office building (known as Boulton House) including an element of new build on the existing car park, into serviced apartment accommodation which will offer short-term accommodation as an alternative to hotels for visitors to the city, including a central courtyard on the ground floor.

The site has an area of 0.25 ha and is located to the north-east of Chorlton Street, between Major Street and Bloom Street, on the edge of Manchester's Gay Village and the Portland Street area. The Site is within a highly accessible location in Manchester City Centre and is well-served by public transport, located directly opposite Manchester Central Coach Station and within a short walk from Manchester Piccadilly and Oxford Road train stations. The Site is located outside of, but adjacent to, the Portland Street SRF area to the west of Chorlton Street. The SRF area comprises land bounded by Portland Street, Bloom Street, Abingdon Street and Chorlton Street.

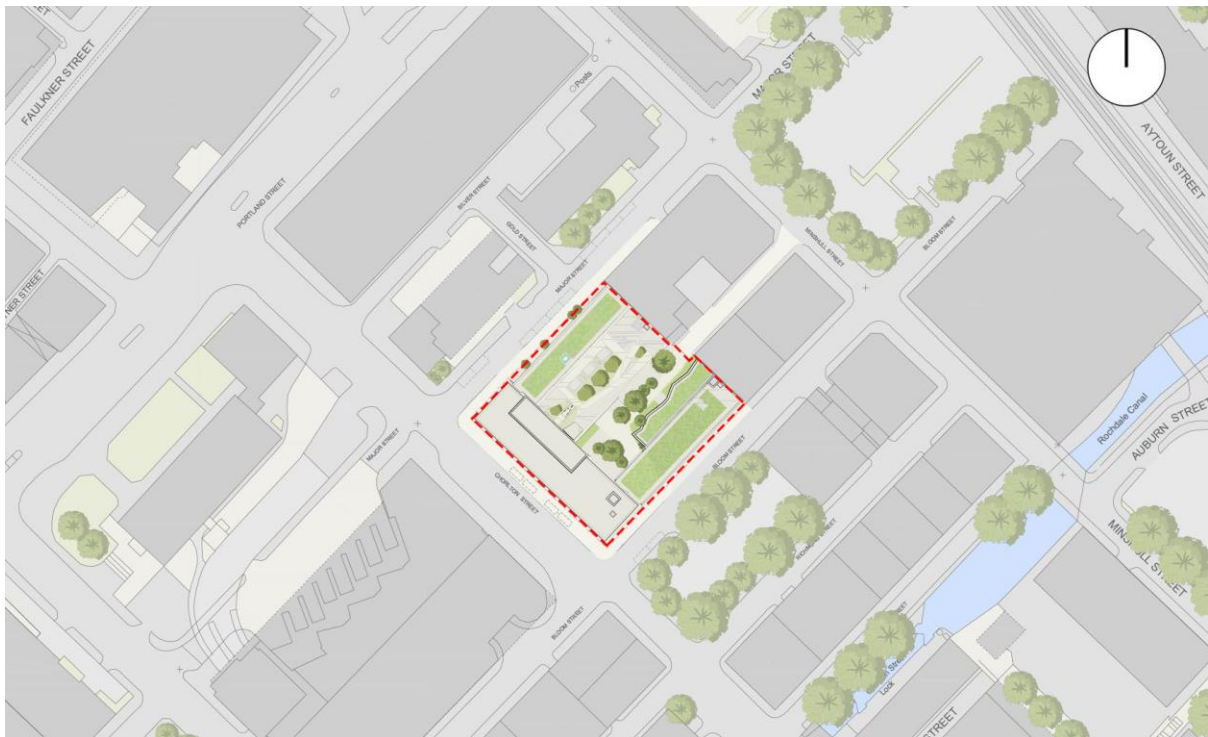


Figure 1 | Site location

3.0 Methodology

Embodied carbon assessments are a new requirement under the Greater Manchester Five-Year Environment Plan (2025–2030). Policy SP- S2 has been developed to ensure new developments consider the WLC of the scheme, which includes operation (both regulated and unregulated) and embodied carbon emissions, as well as any future ‘benefits’, post ‘end life’, including carbon reductions achieved from reuse and recycling of building structure and material. The assessment follows the guidance for WLC assessments outlined in EN 15978:2011. Calculations were undertaken using “Etool LCA”. The purpose of this is to assess the WLC emissions of the proposed development and to inform future design decisions to reduce carbon emissions throughout the building’s lifespan. The object of the assessment is the building and surrounding areas within the site boundary. The building elements covered by the assessment are outlined below and were selected following the guidance detailed in the RICS WLC Assessment for the Built Environment (2023).

- **Substructure:** Lowest floor construction, Basement excavation, Basement retaining walls
- **Superstructure:** Upper Floors, Roof Coverings, External Walls, Windows and external doors, Internal Wall and Partitions
- **Finishes and FF&E:** finishes to internal walls, floors and ceilings
- **Building Services:** Space Heating and Air Conditioning, Ventilation, Renewables
- **External Works:** Hard Landscaping, Soft Landscaping

3.1 Life cycle embodied carbon stages

The life-cycle of a building is divided into distinct Project Stages to represent the timeline of a project. Each stage is sub-divided into smaller Activity Categories. The Net Zero Design Guidance by GMCA shows an adaptation of these stages (Figure xx) combining BS EN 15978, RICS 2023 and LETI. For a given Life Cycle Assessment, it is important to understand not only the Building Elements included within the analysis such as external walls or upper floors, but also the Project Stage and Activity categories. For a Life Cycle Assessment, there are stages in the life of a typical project, with each stage having a number of modules associated with it:

- [A0] Pre-construction
- [A1 – A3] Product Stage
- [A4 – A5] Construction Process Stage
- [B1 – B5] Use Stage
- [C1 – C4] End of Life Stage (EoL)

Upfront carbon is a relatively new term which considers the Product and Construction Stages together. This provides a total figure for carbon up to practical completion and has been borne out of the industry targets set by LETI and the GLA.

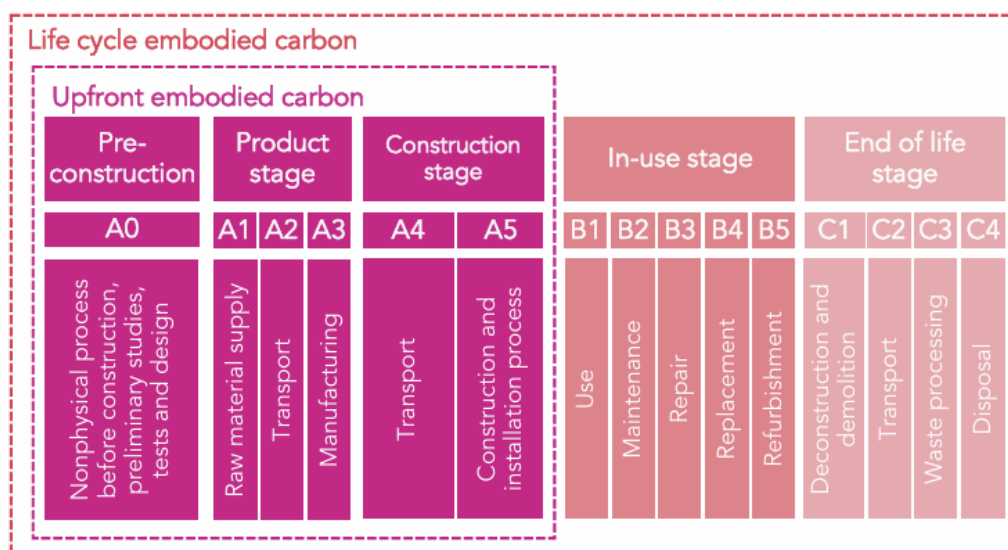


Figure 2 | RICS PS of Project and Activity stages

4.0 Results

4.1 Carbon emissions by life cycle embodied carbon modules

This section presents the results of the Life Cycle Embodied Carbon Assessment in accordance with the RICS Whole Life Carbon Assessment for the Built Environment guidance v2 (2023). The assessment encompasses all life cycle stages required by the GMCA Net Zero Design Guidance. These modules provide a comprehensive overview of the carbon impacts associated with the development, from initial material extraction to end-of-life processes and potential future benefits beyond the building's life cycle. Each module's carbon impact has been calculated in terms of kgCO₂e, allowing for a detailed understanding of where emissions are concentrated and identifying opportunities for carbon reduction across the building's full life cycle. The results are structured as follows:

- **Modules A0–A5** cover the upfront embodied carbon, including the raw material supply, transport, manufacturing, and construction processes.
- **Modules B1–B5** account for the in-use stage emissions, such as operational energy and water use, as well as maintenance and repair.
- **Modules C1–C4** examine the end-of-life carbon emissions, including deconstruction, transport, waste processing, and disposal.

Module	Global warming (kg CO ₂ e)	Global warming per GIA (kg CO ₂ e/m ²)
Module A0-A5	6,027,001.83	588
Module B1-B5	3,151,543.58	306
Module C1-C4	1,776,794.44	172
Total	10,995,339.80	1,066

Table 1 | Summary of emissions by module

The latest calculations confirm that the scheme, based on current design proposals, is on track to achieve a life cycle embodied carbon of 1,066 kgCO₂/m². Whilst the specific building type is not listed within LETI embodied carbon target alignment, the upfront embodied carbon could achieve a better rating at a later stage when all materials and elements have been defined during RIBA Stages 3 to 4.

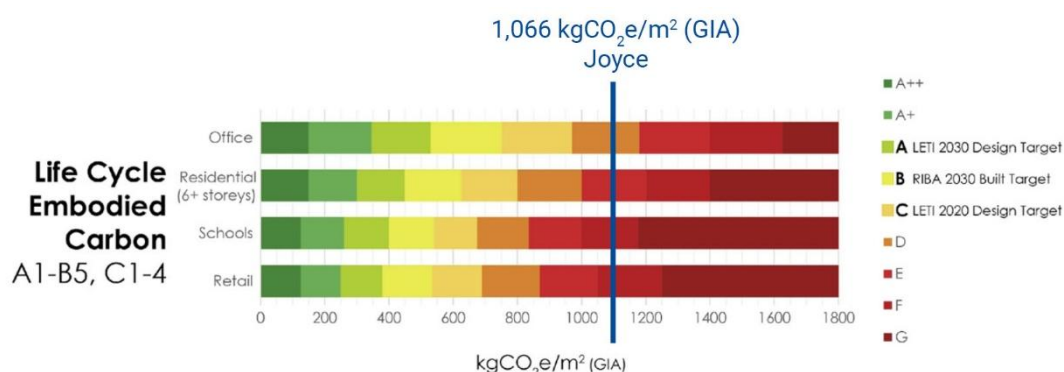


Figure 3 | Scheme Life Cycle embodied carbon against LETI targets

4.2 Carbon savings from retained elements

An initial carbon savings assessment has been carried out for the project, focusing on the reuse of existing elements within the original building. This analysis highlights the environmental benefits of retaining key structural and architectural components, resulting in a significantly lower embodied carbon footprint compared to that of a full new-build scenario where no original elements are preserved.

Module	Existing elements retained Global warming (kg CO ₂ e)	Estimated carbon savings Global warming (kg CO ₂ e)
Module A0-A5	6,027,001.83	4,702,656.03
Module B1-B5 and C1-C4	4,928,338.02	4,182,829.97
Total	10,995,339.80	8,885,486

Table 2 | Summary of carbon savings

The reuse of existing concrete structures and brick walls in the redevelopment significantly reduces the project's carbon footprint and overall global warming potential. By retaining these key building elements, the need for new materials—which are typically carbon-intensive to produce and transport—is greatly reduced. This approach avoids the embodied carbon associated with demolition, disposal, and the manufacturing of replacement materials. In particular, concrete and brick have high embodied carbon, so preserving them helps minimise upfront emissions (Modules A0–A5) and contributes to a more sustainable and resource-efficient construction strategy. Additionally, material reuse supports circular economy principles and aligns with long-term carbon reduction goals.

4.3 Upfront embodied carbon

The upfront embodied carbon assessment was completed using the RICS Whole Life Carbon Assessment for the Built Environment (2023) methodology and has been undertaken using the eTool platform. The latest calculations confirm that the scheme, based on current design proposals, is on track to achieve an upfront embodied carbon of 588.88 kgCO₂e/m². Whilst the specific building type is not listed within LETI embodied carbon target alignment, the upfront embodied carbon could achieve a better rating at a later stage when all materials and elements have been defined during RIBA Stages 3 to 4.

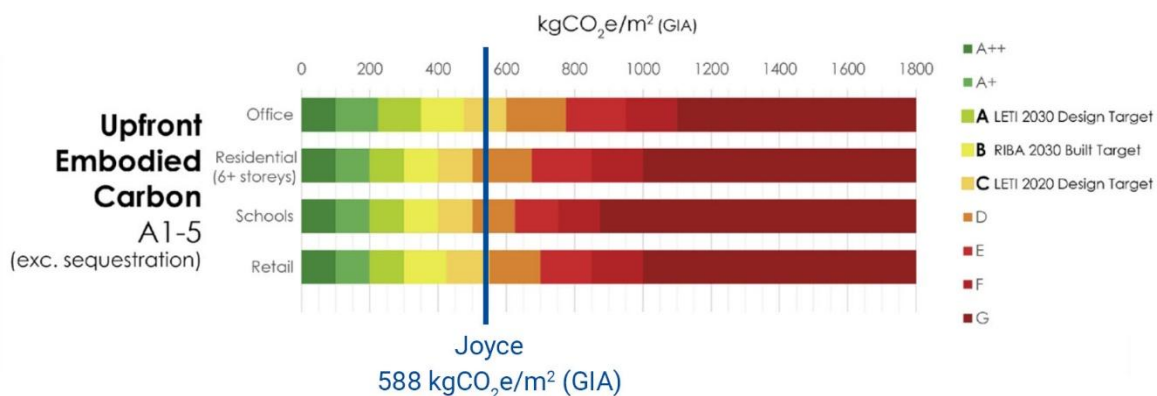


Figure 4 | Scheme upfront embodied carbon against LETI targets

4.3.1 Top three carbon-intensive materials

In alignment with GMCA Net Zero Design Guidance, this section identifies and reports the three materials contributing the highest levels of upfront embodied carbon emissions in the redevelopment of Boulton House. Upfront embodied carbon, primarily associated with product stage emissions (Modules A1–A3), plays a critical role in early design decision-making and long-term carbon performance. The findings presented here are based on a whole life carbon assessment in accordance with the RICS 2023 methodology.

4.3.1.1 Upper floor concrete

The concrete used in the upper floors of the new build elements of Boulton House is confirmed to be one of the top three materials with the highest up-front embodied carbon. Due to the high cement content typically required for structural concrete, especially in multi-storey buildings, its production involves significant carbon emissions associated with both the energy-intensive manufacturing process. Given the volume of concrete used in the upper floors, it represents a major contributor to the overall embodied carbon footprint of the building.

Opportunities to reduce embodied carbon: Using fly ash or ground granulated blast furnace slag (GGBS) as partial replacements for cement in concrete can significantly reduce its embodied carbon. These industrial by-products require less energy to produce than Portland cement, thereby lowering the overall carbon emissions associated with the concrete mix.

4.3.1.2 Steel frame

The steel used within the frame of Boulton House is confirmed to be one of the top three materials with the highest up-front embodied carbon. Structural steel production is highly energy-intensive and involves significant greenhouse gas emissions from processes.

Opportunities to reduce embodied carbon: Using steel produced via electric arc furnace (EAF) with a high proportion of recycled scrap significantly lowers embodied carbon compared to primary (blast furnace) steel.

4.3.1.3 Aluminium (windows)

The aluminium window frames specified for Boulton House are confirmed to be one of the top three materials with the highest up-front embodied carbon. Aluminium production is highly energy-intensive, particularly in the smelting process, which contributes to its exceptionally high carbon footprint per tonne. Although used in smaller quantities than concrete or steel, the high carbon intensity of aluminium means that window frames and curtain walling systems can represent a significant portion of the building's overall embodied carbon.

Opportunities to reduce embodied carbon: Recycled aluminium uses up to 95% less energy than primary aluminium. Specifying high-recycled-content aluminium significantly reduces embodied carbon.

Some suppliers offer low-carbon aluminium produced using renewable energy (e.g. hydroelectric power) or through verified low-emissions processes. This can be seen in the product EPD where available.

4.4 Actions

Recycled binders within the concrete	Concrete is one of the major material contributors to the building's life-cycle emissions. During this assessment, a typical concrete mix has been used. Products are available that can have a recycled cement replacement content of up to 55%, which can have a significant impact on the carbon emissions of the product.
Recycled Aggregate	Depending on the application and type of concrete, there are opportunities to use recycled aggregates and demolition waste in new on-site concrete. This prevents waste and minimises the requirement for new resources. Using recycled aggregates directly from the demolition of the site minimise emissions associated with the transport of materials.
Reduce volume of concrete	Highly efficient designs will minimise the volume of concrete in the building. This could include reducing overdesign of slabs and columns and optimising amount of reinforcement vs concrete thickness. Floor plates have already been rationalised as much as possible, which reduces material usage. This has the added benefit of reducing the project cost, as well as life cycle carbon emissions. It will be reviewed at the technical design stage.
Façade design and material selection	The proposed development has included a double glazed windows. This is a standardised material that requires little to no maintenance over its life and can often be reclaimed at the end of the building's life, if properly designed to enable dismantling. The development also uses standardised window and door design, allowing more efficient design and production, reducing waste and material use.
Select low carbon materials	When selecting and specifying products across the development, products should be identified that have a low embodied carbon. This information can often be found in the product Environmental Product Declaration (EPD), if available.
Use	The energy strategy proposes the use of air-source heat pump for the development. Quantities cannot be confirmed at this early design stage. However, in order to minimise in-use emissions from refrigerant leak, all best practice procedures will be followed when installing refrigerant pipework. All relevant F-gas rules will be followed with regard to testing for leakage, based on the installed system size.
Transportation to site	All construction materials should be sourced from suppliers as close as possible to the site. This minimises transportation distances and emissions associated with the transport of these materials.
Energy Use	The development has been designed to comply with the Places for everyone energy requirements, and as such demonstrates a significant improvement over the building regulation baseline. An energy strategy has been developed following the energy hierarchy 'Be Lean, Be Clean, Be Green'. The development employs an efficient building fabric, including well-insulated walls and highly-efficient glazing, efficient heating systems.
Water use	Low-flow fixtures and fitting should be used within the development to ensure water usage is kept to a minimum. Water meters should be installed to encourage residents to reduce their water usage.
Deconstruction	The demolition and deconstruction of the development should be considered at the design stage. Materials that can be separated from each other to allow for more effective recycling at the end of life should be considered.

5.0 Conclusion

Consolux M&E Consulting Ltd have been appointed to undertake an Embodied carbon assessment for the Joyce by The James scheme. The assessment has been carried out in accordance with both local and national planning policy requirements relating to sustainability and carbon reduction. The assessment has been completed using the RICS Whole Life Carbon Assessment for the Built Environment v.2 (2023) methodology and has been undertaken using the eTool platform.

The analysis identifies that the most significant contribution to the building's whole-life Global Warming Potential (GWP) arises from the embodied carbon associated with product and construction stages (Modules A0–A5). This highlights the importance of early-stage design decisions in minimising the project's carbon footprint. The largest materials are confirmed to be the concrete and steel within the building design.

The latest calculations confirm that the scheme, based on current design proposals, is on track to achieve a life cycle embodied carbon of 1,066 kgCO₂/m² and achieve an upfront embodied carbon of 588.88 kgCO₂/m². Whilst the specific building type is not listed within LETI embodied carbon target alignment, the upfront embodied carbon could achieve a better rating at a later stage when all materials and elements have been defined during RIBA Stages 3 to 4. It is important to highlight that the associated carbon emissions to superstructure and substructure would be substantially higher.

Module	Global warming (kg CO ₂ e)	Global warming per GIA (kg CO ₂ e/m ²)
Module A0-A5	6,027,001.83	588
Module B1-B5	3,151,543.58	306
Module C1-C4	1,776,794.44	172
Total	10,995,339.80	1,066

Table 3 | Summary of emissions by module

This assessment has been undertaken in the absence of a detailed Bill of Materials (BoM). As a result, the calculations are based on assumed quantities and standard data sources, which may not fully capture the specific material selections and quantities proposed for the project. It is recommended that this assessment be revisited and updated once the full BoM becomes available. This will allow for a more accurate evaluation whole life carbon impacts and support more robust sustainability decision-making as the design progresses.

Appendix A-4a

Energy Output Report Notional low carbon heat network



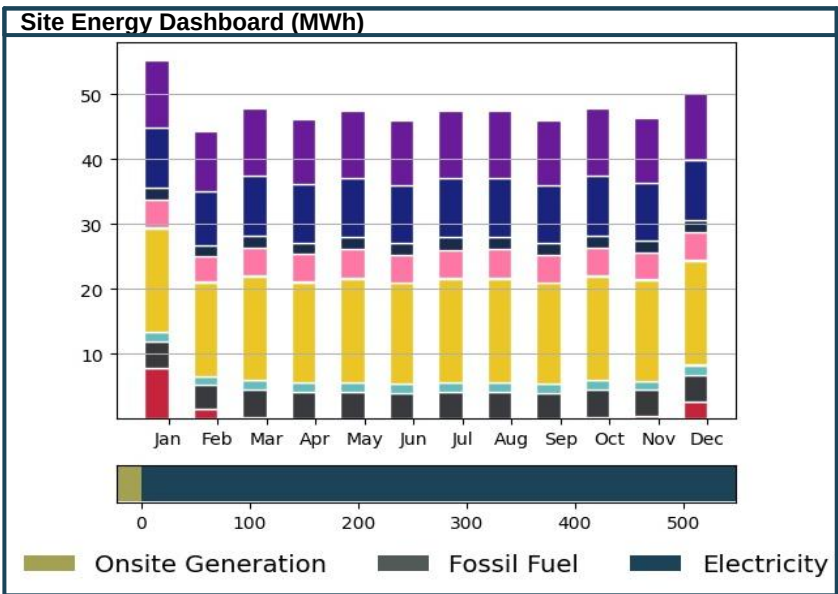
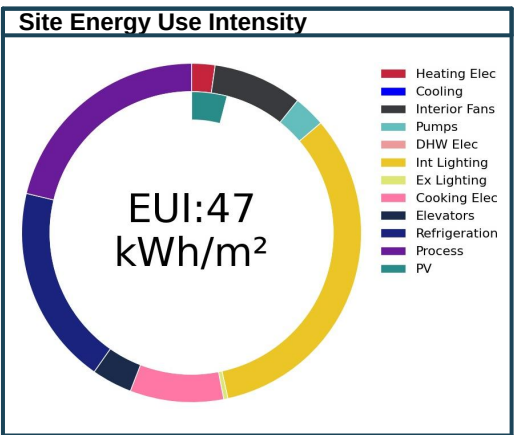
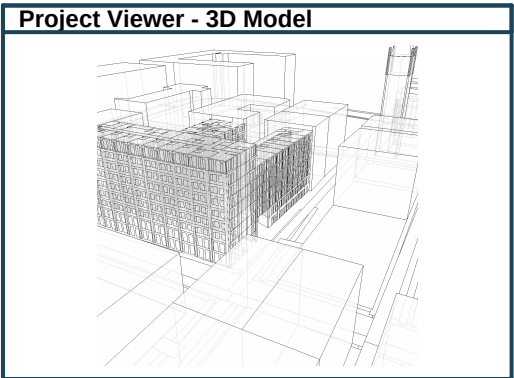
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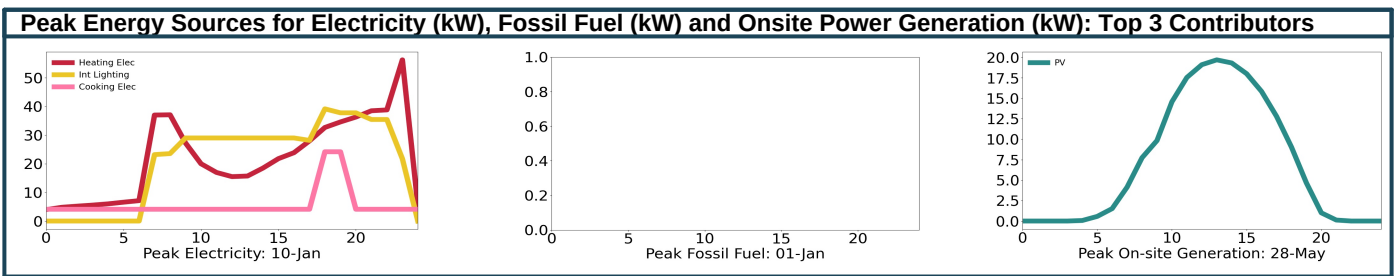
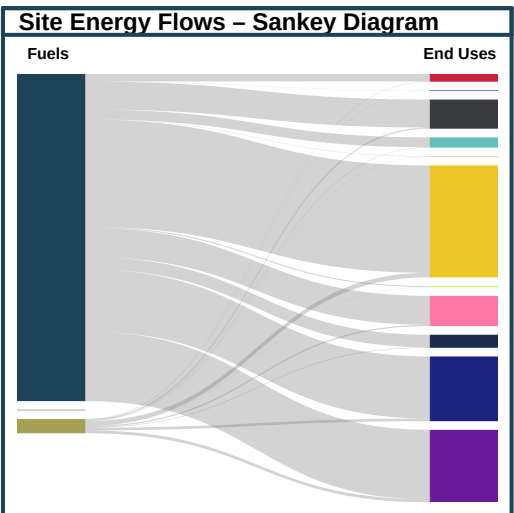
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Address:	Boulton House
Climate File:	Manchester_DSY1_2020High50_.epw
Simulation:	852_TM54_NHN.aps

Design Team:	Consolux
Energy Analyst:	Jeff Kettlewell...
Owner:	The James
Conditioned Area (m²):	11559.4899

Annual Energy Consumption (kWh/m²/year) & CO2 kgCO2/m²/yr			
Energy End Use	Site Energy	Source Energy	CO2 Emissions
Heating Fossil Fuel	0.0	0.0	0.0
Heating Electricity	1.1	1.8	0.2
Space Cooling	0.0	0.0	0.0
Fans Interior	4.2	6.4	0.6
Heat Rejection	0.0	0.0	0.0
Pumps	1.5	2.2	0.2
DHW Fossil Fuel	0.0	0.0	0.0
DHW Electricity	0.0	0.1	0.0
Interior Lighting	16.2	24.6	2.3
Exterior Lighting	0.2	0.2	0.0
Receptacle	0.0	0.0	0.0
Data Center	0.0	0.0	0.0
Cooking Fossil Fuel	0.0	0.0	0.0
Cooking Electricity	4.4	6.6	0.6
Elevators & Escalators	1.9	2.9	0.3
Refrigeration	9.4	14.2	1.3
Process	10.5	15.9	1.5
TOTAL (ex renewables)	49	74	6



Annual Fuel Costs and Peak Demands				
Fuels	Cost (£)	Peak Day	Peak Time	Peak Demand
Electricity	47,356.00	10-Jan	19:00	139.4 kW
Fossil Fuel	0.00	01-Jan	0:00	0.0 kW
Total	47,356.00	01-Jan	0:00	



Appendix A-4b

Energy Output Report VRF system



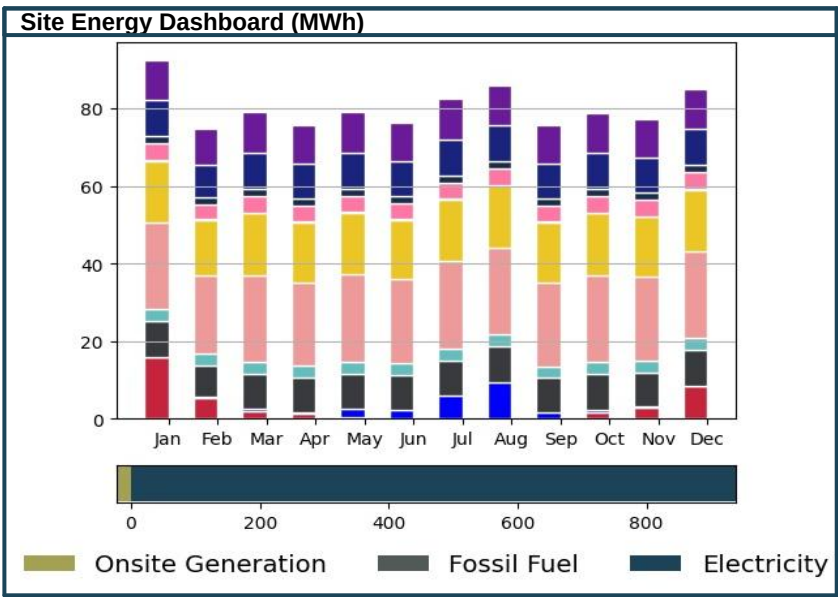
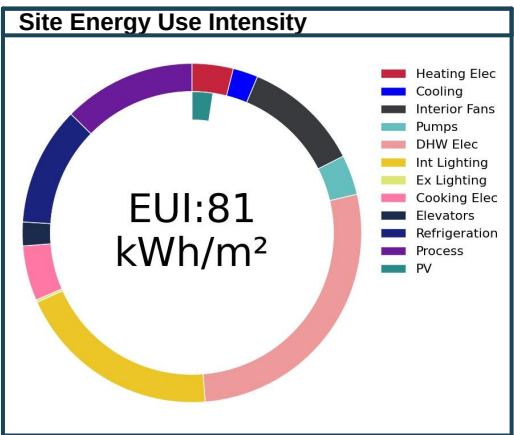
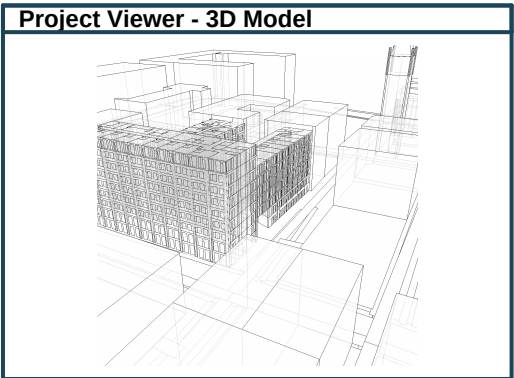
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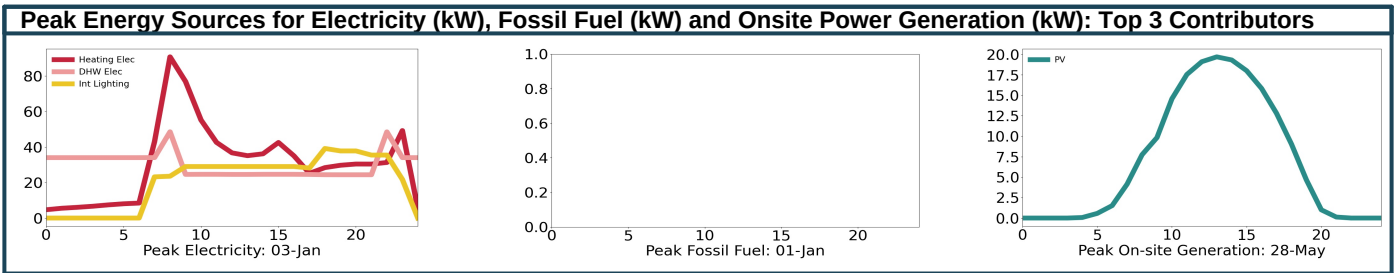
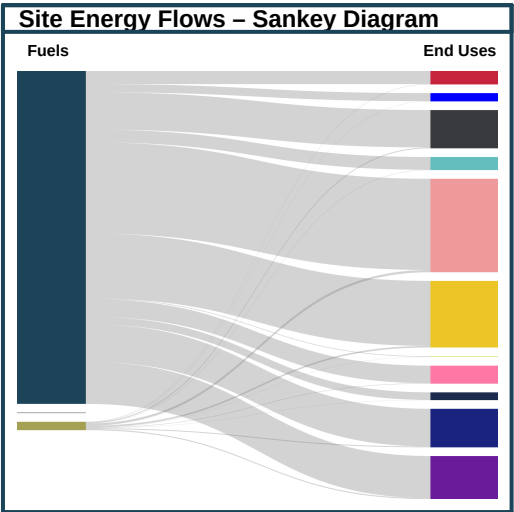
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Address:	Boulton House
Climate File:	Manchester_DSY1_2020High50_epw
Simulation:	852_TM54_52_panels.aps

Design Team:	Consolux
Energy Analyst:	Jeff Kettlewell...
Owner:	The James
Conditioned Area (m²):	11433

Annual Energy Consumption (kWh/m²/year) & CO2 kgCO2/m²/yr			
Energy End Use	Site Energy	Source Energy	CO2 Emissions
Heating Fossil Fuel	0.0	0.0	0.0
Heating Electricity	3.3	5.3	0.5
Space Cooling	2.0	2.9	0.2
Fans Interior	9.4	14.3	1.3
Heat Rejection	0.0	0.0	0.0
Pumps	3.2	4.9	0.4
DHW Fossil Fuel	0.0	0.0	0.0
DHW Electricity	23.0	34.9	3.2
Interior Lighting	16.4	24.8	2.3
Exterior Lighting	0.2	0.2	0.0
Receptacle	0.0	0.0	0.0
Data Center	0.0	0.0	0.0
Cooking Fossil Fuel	0.0	0.0	0.0
Cooking Electricity	4.4	6.7	0.6
Elevators & Escalators	1.9	2.9	0.3
Refrigeration	9.5	14.4	1.3
Process	10.6	16.1	1.5
TOTAL (ex renewables)	84	127	11



Annual Fuel Costs and Peak Demands				
Fuels	Cost (£)	Peak Day	Peak Time	Peak Demand
Electricity	78,116.00	03-Jan	8:00	214.7 kW
Fossil Fuel	0.00	01-Jan	0:00	0.0 kW
Total	78,116.00	01-Jan	0:00	



Appendix A-4c

Energy Output Report Biomass boiler



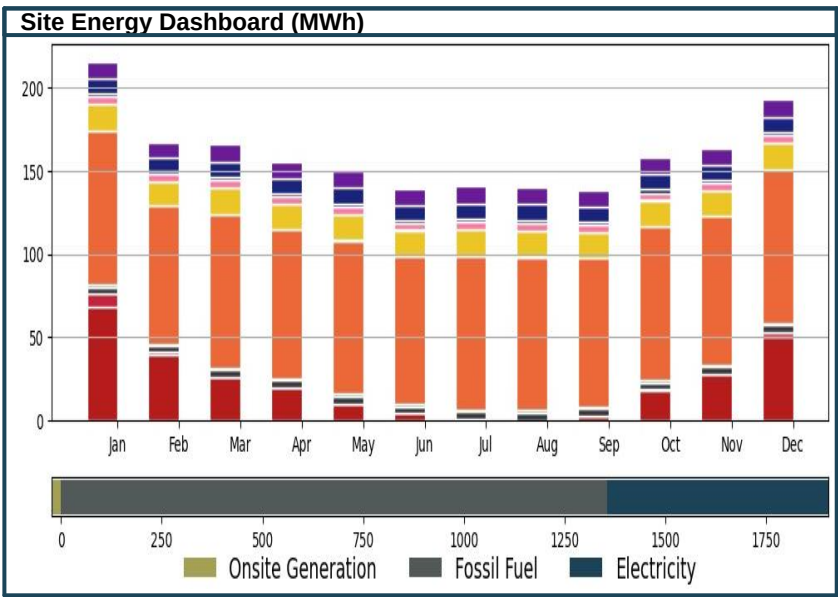
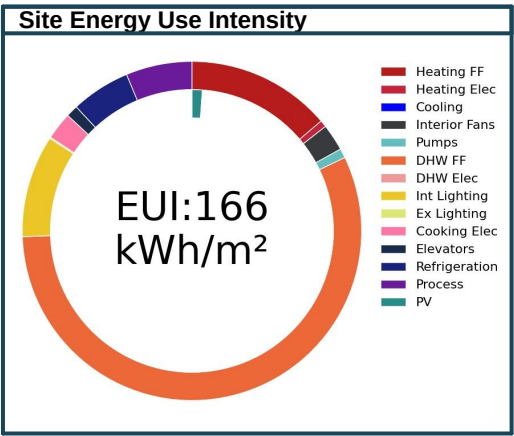
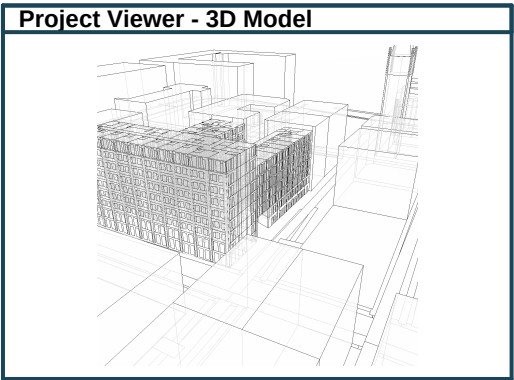
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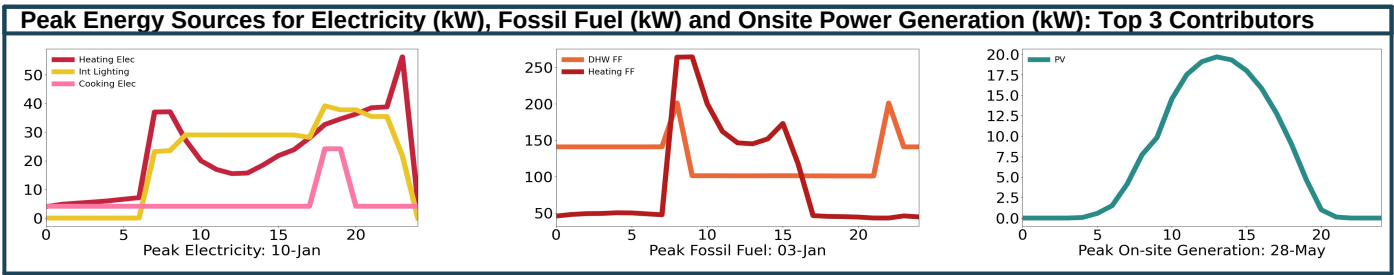
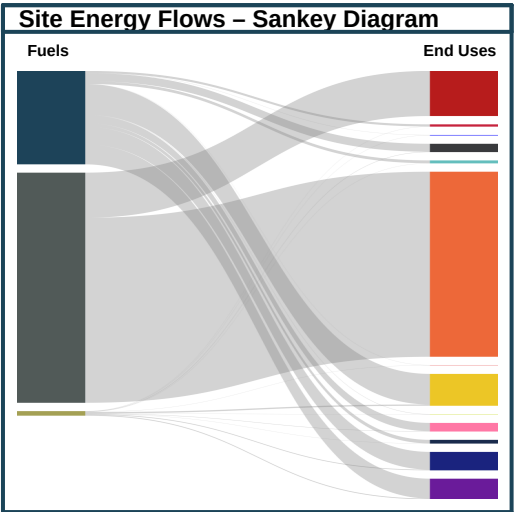
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Address:	Boulton House
Climate File:	Manchester_DSY1_2020High50_.epw
Simulation:	852_TM54_Biomass.aps

Design Team:	Consolux
Energy Analyst:	Jeff Kettlewell...
Owner:	The James
Conditioned Area (m²):	11433

Annual Energy Consumption (kWh/m²/year) & CO2 kgCO2/m²/yr			
Energy End Use	Site Energy	Source Energy	CO2 Emissions
Heating Fossil Fuel	23.2	24.1	0.7
Heating Electricity	1.1	1.8	0.2
Space Cooling	0.0	0.0	0.0
Fans Interior	4.3	6.5	0.6
Heat Rejection	0.0	0.0	0.0
Pumps	1.5	2.3	0.2
DHW Fossil Fuel	95.3	98.9	2.8
DHW Electricity	0.0	0.1	0.0
Interior Lighting	16.4	24.8	2.3
Exterior Lighting	0.2	0.2	0.0
Receptacle	0.0	0.0	0.0
Data Center	0.0	0.0	0.0
Cooking Fossil Fuel	0.0	0.0	0.0
Cooking Electricity	4.4	6.7	0.6
Elevators & Escalators	1.9	2.9	0.3
Refrigeration	9.5	14.4	1.3
Process	10.6	16.1	1.5
TOTAL (ex renewables)	168	198	10



Annual Fuel Costs and Peak Demands				
Fuels	Cost (£)	Peak Day	Peak Time	Peak Demand
Electricity	47,356.00	10-Jan	19:00	139.4 kW
Fossil Fuel	0.00	01-Jan	0:00	465.2 kW
Total	47,356.00	10-Jan	19:00	



Appendix A-5a

BRUKL Output Document:
Boulton House - Notional



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Project name

Boulton House Notional**As designed****Date:** Thu Jun 05 14:58:45 2025

Administrative information

Building Details

Address: Boulton House, Manchester, M1 3HY

Certifier details

Name: Consolux M&E Consulting Ltd**Telephone number:** 0151 708 9469**Address:** 7th Floor, Cotton House, Cotton Exchange Building, Old Hall Street, Liverpool, L3 9LQ

Certification tool

Calculation engine: Apache**Calculation engine version:** 7.0.28**Interface to calculation engine:** IES Virtual Environment**Interface to calculation engine version:** 7.0.28**BRUKL compliance module version:** v6.1.e.1**Foundation area [m²]:** 837.7The CO₂ emission and primary energy rates of the building must not exceed the targets**The building does not comply with England Building Regulations Part L 2021**

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	13.23
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	19.66
Target primary energy rate (TPER), kWh _{PE} /m ² annum	143.08
Building primary energy rate (BPER), kWh _{PE} /m ² annum	212.41
Do the building's emission and primary energy rates exceed the targets?	BER > TER BPER > TPER

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

Fabric element	U _{a-Limit}	U _{a-Calc}	U _{i-Calc}	First surface with maximum value
Walls*	0.26	0.3	0.3	JN000080:Surf[0]
Floors	0.18	0.1	0.1	LV000043:Surf[0]
Pitched roofs	0.16	-	-	No pitched roofs in building
Flat roofs	0.18	0.18	0.18	JN0000DA:Surf[0]
Windows** and roof windows	1.6	1.6	1.6	JN00017C:Surf[0]
Rooflights***	2.2	1.3	1.3	LV000056:Surf[1]
Personnel doors^	1.6	1.29	2.2	LV00002A:Surf[2]
Vehicle access & similar large doors	1.3	-	-	No vehicle access doors in building
High usage entrance doors	3	-	-	No high usage entrance doors in building
U _{a-Limit} = Limiting area-weighted average U-values [W/(m ² K)] U _{a-Calc} = Calculated area-weighted average U-values [W/(m ² K)] U _{i-Calc} = Calculated maximum individual element U-values [W/(m ² K)] * Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows. ** Display windows and similar glazing are excluded from the U-value check. *** Values for rooflights refer to the horizontal position. ^ For fire doors, limiting U-value is 1.8 W/m ² K NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.				

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

Building services

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

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

1- VRF

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.5	5	0	2	0.7
Standard value	2.5*	N/A	N/A	1.5^	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.					
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

2- Panel

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0	-	-
Standard value	N/A	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES

1- DHW

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	2	0.005
Standard value	1	N/A

2- DHW (PoU)

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

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

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
1 Bed Suite 1_Bathroom		95	-	-
1 Bed Suite 1_Bathroom		95	-	-
1 Bed Suite 1_Bathroom		95	-	-
1 Bed Suite 1_Bathroom		95	-	-
1 Bed Suite 1_Bathroom		95	-	-
1 Bed Suite 1_Bathroom		95	-	-
1 Bed Suite 1_Bathroom		95	-	-
1 Bed Suite 1_Bathroom		95	-	-
1 Bed Suite 1_Bedroom		95	-	-
1 Bed Suite 1_Bedroom		95	-	-
1 Bed Suite 1_Bedroom		95	-	-
1 Bed Suite 1_Bedroom		95	-	-
1 Bed Suite 1_Bedroom		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
1 Bed Suite 1_Bedroom		95	-	-
1 Bed Suite 1_Bedroom		95	-	-
1 Bed Suite 1_Bedroom		95	-	-
1 Bed Suite 1_Living/Kitchen		95	-	-
1 Bed Suite 1_Living/Kitchen		95	-	-
1 Bed Suite 1_Living/Kitchen		95	-	-
1 Bed Suite 1_Living/Kitchen		95	-	-
1 Bed Suite 1_Living/Kitchen		95	-	-
1 Bed Suite 1_Living/Kitchen		95	-	-
1 Bed Suite 1_Living/Kitchen		95	-	-
1 Bed Suite 1_Living/Kitchen		95	-	-
1 Bed Suite 23_Bathroom		95	-	-
1 Bed Suite 23_Bedroom		95	-	-
1 Bed Suite 23_Living/Kitchen		95	-	-
1 Bed Suite 23_Living/Kitchen		95	-	-
1 Bed Suite 23_Living/Kitchen		95	-	-
1 Bed Suite 31_Bathroom		95	-	-
1 Bed Suite 31_Bathroom		95	-	-
1 Bed Suite 31_Bedroom		95	-	-
1 Bed Suite 31_Bedroom		95	-	-
Acc Suite 14		95	-	-
Acc Suite 14		95	-	-
Acc Suite 14_Bathroom		95	-	-
Acc Suite 14_Bathroom		95	-	-
Acc Suite 15		95	-	-
Acc Suite 15		95	-	-
Acc Suite 15_Bathroom		95	-	-
Acc Suite 23		95	-	-
Acc Suite 23_Bathroom		95	-	-
Acc Suite 24		95	-	-
Acc Suite 24		95	-	-
Acc Suite 24		95	-	-
Acc Suite 24_Bathroom		95	-	-
Acc Suite 24_Bathroom		95	-	-
Acc Suite 24_Bathroom		95	-	-
Acc Suite 25		95	-	-
Acc Suite 25		95	-	-
Acc Suite 25_Bathroom		95	-	-
Acc Suite 25_Bathroom		95	-	-
ACC WC		95	-	-
ACC WC		95	-	-
Bin Store		95	-	-
Business Lounge		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
Junior Suite 3_Bathroom		95	-	-
Junior Suite 3_Bathroom		95	-	-
Junior Suite 3_Bathroom		95	-	-
Junior Suite 3_Bathroom		95	-	-
Junior Suite 3_Bathroom		95	-	-
Junior Suite 3_Bathroom		95	-	-
Junior Suite 3_Bathroom		95	-	-
Junior Suite 4		95	-	-
Junior Suite 4		95	-	-
Junior Suite 4		95	-	-
Junior Suite 4		95	-	-
Junior Suite 4		95	-	-
Junior Suite 4		95	-	-
Junior Suite 4		95	-	-
Junior Suite 4		95	-	-
Junior Suite 4_Bathroom		95	-	-
Junior Suite 4_Bathroom		95	-	-
Junior Suite 4_Bathroom		95	-	-
Junior Suite 4_Bathroom		95	-	-
Junior Suite 4_Bathroom		95	-	-
Junior Suite 4_Bathroom		95	-	-
Junior Suite 4_Bathroom		95	-	-
Junior Suite 4_Bathroom		95	-	-
Junior Suite 5		95	-	-
Junior Suite 5		95	-	-
Junior Suite 5		95	-	-
Junior Suite 5		95	-	-
Junior Suite 5		95	-	-
Junior Suite 5		95	-	-
Junior Suite 5_Bathroom		95	-	-
Junior Suite 5_Bathroom		95	-	-
Junior Suite 5_Bathroom		95	-	-
Junior Suite 5_Bathroom		95	-	-
Junior Suite 5_Bathroom		95	-	-
Junior Suite 5_Bathroom		95	-	-
Junior Suite 6		95	-	-
Junior Suite 6		95	-	-
Junior Suite 6		95	-	-
Junior Suite 6		95	-	-
Junior Suite 6		95	-	-
Junior Suite 6		95	-	-
Junior Suite 6		95	-	-
Junior Suite 6		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
Junior Suite 6_Bathroom		95	-	-
Junior Suite 6_Bathroom		95	-	-
Junior Suite 6_Bathroom		95	-	-
Junior Suite 6_Bathroom		95	-	-
Junior Suite 6_Bathroom		95	-	-
Junior Suite 6_Bathroom		95	-	-
Junior Suite 6_Bathroom		95	-	-
Junior Suite 6_Bathroom		95	-	-
Junior Suite 7		95	-	-
Junior Suite 7		95	-	-
Junior Suite 7		95	-	-
Junior Suite 7		95	-	-
Junior Suite 7		95	-	-
Junior Suite 7		95	-	-
Junior Suite 7		95	-	-
Junior Suite 7		95	-	-
Junior Suite 7		95	-	-
Junior Suite 7_Bathroom		95	-	-
Junior Suite 7_Bathroom		95	-	-
Junior Suite 7_Bathroom		95	-	-
Junior Suite 7_Bathroom		95	-	-
Junior Suite 7_Bathroom		95	-	-
Junior Suite 7_Bathroom		95	-	-
Junior Suite 7_Bathroom		95	-	-
Junior Suite 7_Bathroom		95	-	-
Junior Suite 8		95	-	-
Junior Suite 8		95	-	-
Junior Suite 8		95	-	-
Junior Suite 8		95	-	-
Junior Suite 8		95	-	-
Junior Suite 8		95	-	-
Junior Suite 8		95	-	-
Junior Suite 8_Bathroom		95	-	-
Junior Suite 8_Bathroom		95	-	-
Junior Suite 8_Bathroom		95	-	-
Junior Suite 8_Bathroom		95	-	-
Junior Suite 8_Bathroom		95	-	-
Junior Suite 8_Bathroom		95	-	-
Junior Suite 8_Bathroom		95	-	-
Junior Suite 9		95	-	-
Junior Suite 9		95	-	-
Junior Suite 9		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
Junior Suite 9		95	-	-
Junior Suite 9		95	-	-
Junior Suite 9		95	-	-
Junior Suite 9_Bathroom		95	-	-
Junior Suite 9_Bathroom		95	-	-
Junior Suite 9_Bathroom		95	-	-
Junior Suite 9_Bathroom		95	-	-
Junior Suite 9_Bathroom		95	-	-
Junior Suite 9_Bathroom		95	-	-
Junior Suite 10		95	-	-
Junior Suite 10		95	-	-
Junior Suite 10		95	-	-
Junior Suite 10		95	-	-
Junior Suite 10		95	-	-
Junior Suite 10		95	-	-
Junior Suite 10		95	-	-
Junior Suite 10		95	-	-
Junior Suite 10_Bathroom		95	-	-
Junior Suite 10_Bathroom		95	-	-
Junior Suite 10_Bathroom		95	-	-
Junior Suite 10_Bathroom		95	-	-
Junior Suite 10_Bathroom		95	-	-
Junior Suite 10_Bathroom		95	-	-
Junior Suite 10_Bathroom		95	-	-
Junior Suite 10_Bathroom		95	-	-
Junior Suite 11		95	-	-
Junior Suite 11		95	-	-
Junior Suite 11		95	-	-
Junior Suite 11		95	-	-
Junior Suite 11		95	-	-
Junior Suite 11		95	-	-
Junior Suite 11		95	-	-
Junior Suite 11		95	-	-
Junior Suite 11_Bathroom		95	-	-
Junior Suite 11_Bathroom		95	-	-
Junior Suite 11_Bathroom		95	-	-
Junior Suite 11_Bathroom		95	-	-
Junior Suite 11_Bathroom		95	-	-
Junior Suite 11_Bathroom		95	-	-
Junior Suite 11_Bathroom		95	-	-
Junior Suite 12		95	-	-
Junior Suite 12		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
Junior Suite 12		95	-	-
Junior Suite 12		95	-	-
Junior Suite 12		95	-	-
Junior Suite 12		95	-	-
Junior Suite 12		95	-	-
Junior Suite 12		95	-	-
Junior Suite 12		95	-	-
Junior Suite 12		95	-	-
Junior Suite 12_Bathroom		95	-	-
Junior Suite 12_Bathroom		95	-	-
Junior Suite 12_Bathroom		95	-	-
Junior Suite 12_Bathroom		95	-	-
Junior Suite 12_Bathroom		95	-	-
Junior Suite 13		95	-	-
Junior Suite 13		95	-	-
Junior Suite 13		95	-	-
Junior Suite 13		95	-	-
Junior Suite 13		95	-	-
Junior Suite 13_Bathroom		95	-	-
Junior Suite 13_Bathroom		95	-	-
Junior Suite 13_Bathroom		95	-	-
Junior Suite 14		95	-	-
Junior Suite 14_Bathroom		95	-	-
Junior Suite 15		95	-	-
Junior Suite 15_Bathroom		95	-	-
Junior Suite 16		95	-	-
Junior Suite 16_Bathroom		95	-	-
Junior Suite 16_Bathroom		95	-	-
Junior Suite 17		95	-	-
Junior Suite 17_Bathroom		95	-	-
Junior Suite 18		95	-	-
Junior Suite 18_Bathroom		95	-	-
Junior Suite 19		95	-	-
Junior Suite 19_Bathroom		95	-	-
Junior Suite 20		95	-	-
Junior Suite 20_Bathroom		95	-	-
Junior Suite 21		95	-	-
Junior Suite 21		95	-	-
Junior Suite 21_Bathroom		95	-	-
Junior Suite 21_Bathroom		95	-	-
Junior Suite 22		95	-	-
Junior Suite 22		95	-	-
Junior Suite 22		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
Junior Suite 22		95	-	-
Junior Suite 22		95	-	-
Junior Suite 22		95	-	-
Junior Suite 22		95	-	-
Junior Suite 22		95	-	-
Junior Suite 22		95	-	-
Junior Suite 22		95	-	-
Junior Suite 22_Bathroom		95	-	-
Junior Suite 22_Bathroom		95	-	-
Junior Suite 22_Bathroom		95	-	-
Junior Suite 22_Bathroom		95	-	-
Junior Suite 23		95	-	-
Junior Suite 23		95	-	-
Junior Suite 23		95	-	-
Junior Suite 23		95	-	-
Junior Suite 23_Bathroom		95	-	-
Junior Suite 23_Bathroom		95	-	-
Junior Suite 23_Bathroom		95	-	-
Junior Suite 23_Bathroom		95	-	-
Junior Suite 24		95	-	-
Junior Suite 24		95	-	-
Junior Suite 24		95	-	-
Junior Suite 24_Bathroom		95	-	-
Junior Suite 24_Bathroom		95	-	-
Junior Suite 24_Bathroom		95	-	-
Junior Suite 24_Bathroom		95	-	-
Junior Suite 25		95	-	-
Junior Suite 25		95	-	-
Junior Suite 25		95	-	-
Junior Suite 25		95	-	-
Junior Suite 25_Bathroom		95	-	-
Junior Suite 25_Bathroom		95	-	-
Junior Suite 25_Bathroom		95	-	-
Junior Suite 25_Bathroom		95	-	-
Junior Suite 26		95	-	-
Junior Suite 26		95	-	-
Junior Suite 26		95	-	-
Junior Suite 26		95	-	-
Junior Suite 26		95	-	-
Junior Suite 26		95	-	-
Junior Suite 26		95	-	-
Junior Suite 26		95	-	-
Junior Suite 26		95	-	-
Junior Suite 26		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
Junior Suite 26_Bathroom		95	-	-
Junior Suite 26_Bathroom		95	-	-
Junior Suite 26_Bathroom		95	-	-
Junior Suite 26_Bathroom		95	-	-
Junior Suite 27		95	-	-
Junior Suite 27		95	-	-
Junior Suite 27		95	-	-
Junior Suite 27		95	-	-
Junior Suite 27		95	-	-
Junior Suite 27		95	-	-
Junior Suite 27		95	-	-
Junior Suite 27		95	-	-
Junior Suite 27		95	-	-
Junior Suite 27		95	-	-
Junior Suite 27_Bathroom		95	-	-
Junior Suite 27_Bathroom		95	-	-
Junior Suite 27_Bathroom		95	-	-
Junior Suite 27_Bathroom		95	-	-
Junior Suite 27_Bathroom		95	-	-
Junior Suite 27_Bathroom		95	-	-
Junior Suite 27_Bathroom		95	-	-
Junior Suite 27_Bathroom		95	-	-
Junior Suite 27_Bathroom		95	-	-
Junior Suite 27_Bathroom		95	-	-
Junior Suite 27_Bathroom		95	-	-
Junior Suite 27_Bathroom		95	-	-
Junior Suite 28		95	-	-
Junior Suite 28		95	-	-
Junior Suite 28		95	-	-
Junior Suite 28		95	-	-
Junior Suite 28_Bathroom		95	-	-
Junior Suite 28_Bathroom		95	-	-
Junior Suite 28_Bathroom		95	-	-
Junior Suite 28_Bathroom		95	-	-
Junior Suite 29		95	-	-
Junior Suite 29		95	-	-
Junior Suite 29		95	-	-
Junior Suite 29_Bathroom		95	-	-
Junior Suite 29_Bathroom		95	-	-
Junior Suite 29_Bathroom		95	-	-
Junior Suite 29_Bathroom		95	-	-
Junior Suite 30		95	-	-
Junior Suite 30		95	-	-
Junior Suite 30		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
Junior Suite 30		95	-	-
Junior Suite 30		95	-	-
Junior Suite 30		95	-	-
Junior Suite 30_Bathroom		95	-	-
Junior Suite 30_Bathroom		95	-	-
Junior Suite 30_Bathroom		95	-	-
Junior Suite 30_Bathroom		95	-	-
Junior Suite 30_Bathroom		95	-	-
Junior Suite 30_Bathroom		95	-	-
Junior Suite 30_Bathroom		95	-	-
Junior Suite 31		95	-	-
Junior Suite 31		95	-	-
Junior Suite 31		95	-	-
Junior Suite 31_Bathroom		95	-	-
Junior Suite 31_Bathroom		95	-	-
Junior Suite 31_Bathroom		95	-	-
Junior Suite 32		95	-	-
Junior Suite 32		95	-	-
Junior Suite 32		95	-	-
Junior Suite 32		95	-	-
Junior Suite 32		95	-	-
Junior Suite 32		95	-	-
Junior Suite 32		95	-	-
Junior Suite 32		95	-	-
Junior Suite 32		95	-	-
Junior Suite 32_Bathroom		95	-	-
Junior Suite 32_Bathroom		95	-	-
Junior Suite 32_Bathroom		95	-	-
Junior Suite 33		95	-	-
Junior Suite 33		95	-	-
Junior Suite 33		95	-	-
Junior Suite 33		95	-	-
Junior Suite 33		95	-	-
Junior Suite 33_Bathroom		95	-	-
Junior Suite 33_Bathroom		95	-	-
Junior Suite 33_Bathroom		95	-	-
Junior Suite 33_Bathroom		95	-	-
Junior Suite 33_Bathroom		95	-	-
Junior Suite 34		95	-	-
Junior Suite 34		95	-	-
Junior Suite 34		95	-	-
Junior Suite 34		95	-	-
Junior Suite 34		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
Junior Suite 34_Bathroom		95	-	-
Junior Suite 34_Bathroom		95	-	-
Junior Suite 34_Bathroom		95	-	-
Junior Suite 34_Bathroom		95	-	-
Junior Suite 34_Bathroom		95	-	-
Junior Suite 35		95	-	-
Junior Suite 35		95	-	-
Junior Suite 35		95	-	-
Junior Suite 35		95	-	-
Junior Suite 35		95	-	-
Junior Suite 35_Bathroom		95	-	-
Junior Suite 35_Bathroom		95	-	-
Junior Suite 35_Bathroom		95	-	-
Junior Suite 35_Bathroom		95	-	-
Junior Suite 35_Bathroom		95	-	-
Junior Suite 36		95	-	-
Junior Suite 36		95	-	-
Junior Suite 36		95	-	-
Junior Suite 36		95	-	-
Junior Suite 36		95	-	-
Junior Suite 36_Bathroom		95	-	-
Junior Suite 36_Bathroom		95	-	-
Junior Suite 36_Bathroom		95	-	-
Junior Suite 36_Bathroom		95	-	-
Junior Suite 36_Bathroom		95	-	-
Junior Suite 37		95	-	-
Junior Suite 37		95	-	-
Junior Suite 37		95	-	-
Junior Suite 37		95	-	-
Junior Suite 37		95	-	-
Junior Suite 37_Bathroom		95	-	-
Junior Suite 37_Bathroom		95	-	-
Junior Suite 37_Bathroom		95	-	-
Junior Suite 37_Bathroom		95	-	-
Junior Suite 37_Bathroom		95	-	-
Junior Suite 38		95	-	-
Junior Suite 38		95	-	-
Junior Suite 38		95	-	-
Junior Suite 38		95	-	-
Junior Suite 38_Bathroom		95	-	-
Junior Suite 38_Bathroom		95	-	-
Junior Suite 38_Bathroom		95	-	-
Junior Suite 38_Bathroom		95	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
Junior Suite 39		95	-	-
Junior Suite 39		95	-	-
Junior Suite 39_Bathroom		95	-	-
Junior Suite 39_Bathroom		95	-	-
Laundry/ cleaners closet		95	-	-
Laundry/ cleaners closet		95	-	-
Laundry/ cleaners closet		95	-	-
Lift Lobby		95	-	-
Lift Lobby		95	-	-
Lift Lobby		95	-	-
Lift Lobby		95	-	-
Lift Lobby		95	-	-
Lift Lobby		95	-	-
Lift Lobby		95	-	-
Lift Lobby		95	-	-
Lift Lobby		95	-	-
Lift Lobby		95	-	-
Lift Lobby		95	-	-
Management		95	-	-
Meeting Room		95	-	-
Plant		95	-	-
Podcast Room		95	-	-
Reception		95	75	1.8
Social Lounge		95	75	1.8
Stairs		95	-	-
Stairs		95	-	-
Store		95	-	-
Store		95	-	-
Store		95	-	-
Store		95	-	-
Store		95	-	-
Store		95	-	-
Wellfare		95	-	-
Wellfare		95	-	-

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

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
1 Bed Suite 1_Bedroom	NO (-59.4%)	NO
1 Bed Suite 1_Bedroom	NO (-75.8%)	NO
1 Bed Suite 1_Bedroom	NO (-56.5%)	NO
1 Bed Suite 1_Bedroom	NO (-64.8%)	NO
1 Bed Suite 1_Bedroom	NO (-74.1%)	NO
1 Bed Suite 1_Bedroom	NO (-29.9%)	NO
1 Bed Suite 1_Bedroom	NO (-76.5%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
1 Bed Suite 1_Bedroom	NO (-70.8%)	NO
1 Bed Suite 1_Living/Kitchen	NO (-62.2%)	NO
1 Bed Suite 1_Living/Kitchen	NO (-71.8%)	NO
1 Bed Suite 1_Living/Kitchen	NO (-49.9%)	NO
1 Bed Suite 1_Living/Kitchen	NO (-38%)	NO
1 Bed Suite 1_Living/Kitchen	NO (-74.1%)	NO
1 Bed Suite 1_Living/Kitchen	NO (-46.9%)	NO
1 Bed Suite 1_Living/Kitchen	NO (-70.7%)	NO
1 Bed Suite 1_Living/Kitchen	NO (-76.1%)	NO
1 Bed Suite 23_Bedroom	NO (-79.6%)	NO
1 Bed Suite 23_Living/Kitchen	NO (-61.5%)	NO
1 Bed Suite 23_Living/Kitchen	NO (-54.2%)	NO
1 Bed Suite 23_Living/Kitchen	NO (-60.5%)	NO
1 Bed Suite 31_Bedroom	NO (-79.5%)	NO
1 Bed Suite 31_Bedroom	NO (-75.8%)	NO
Acc Suite 14	NO (-13.7%)	NO
Acc Suite 14	NO (-48%)	NO
Acc Suite 15	NO (-75%)	NO
Acc Suite 15	NO (-16.5%)	NO
Acc Suite 23	NO (-48.8%)	NO
Acc Suite 24	NO (-54.4%)	NO
Acc Suite 24	NO (-67.2%)	NO
Acc Suite 24	NO (-60.2%)	NO
Acc Suite 25	NO (-61%)	NO
Acc Suite 25	NO (-66.9%)	NO
ACC WC	N/A	N/A
ACC WC	N/A	N/A
Business Lounge	NO (-66%)	NO
Business Lounge (individual space)	N/A	N/A
Business Lounge (individual space)	N/A	N/A
Commercial	NO (-42.4%)	NO
Gym /Yoga Studio	NO (-53.7%)	NO
Junior Suite 5	NO (-47%)	NO
Junior Suite 5	NO (-49.3%)	NO
Junior Suite 9	NO (-45.4%)	NO
Junior Suite 9	NO (-42.5%)	NO
Junior Suite 2	NO (-58.9%)	NO
Junior Suite 2	NO (-17.6%)	NO
Junior Suite 2	NO (-56.6%)	NO
Junior Suite 2	NO (-55.9%)	NO
Junior Suite 2	NO (-51.9%)	NO
Junior Suite 2	NO (-63.4%)	NO
Junior Suite 2	NO (-61.8%)	NO
Junior Suite 2	NO (-57.5%)	NO
Junior Suite 3	NO (-52.6%)	NO
Junior Suite 3	NO (-41.9%)	NO
Junior Suite 3	NO (-44.7%)	NO
Junior Suite 3	NO (-43.8%)	NO
Junior Suite 3	NO (-42.9%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Junior Suite 3	NO (-24.1%)	NO
Junior Suite 3	NO (-50%)	NO
Junior Suite 3	NO (-5.3%)	NO
Junior Suite 4	NO (-48.6%)	NO
Junior Suite 4	NO (-6%)	NO
Junior Suite 4	NO (-51.4%)	NO
Junior Suite 4	NO (-42.6%)	NO
Junior Suite 4	NO (-22.4%)	NO
Junior Suite 4	NO (-42.8%)	NO
Junior Suite 4	NO (-43.1%)	NO
Junior Suite 4	NO (-42.8%)	NO
Junior Suite 5	NO (-41.6%)	NO
Junior Suite 5	NO (-41.9%)	NO
Junior Suite 5	NO (-4.3%)	NO
Junior Suite 5	NO (-18.6%)	NO
Junior Suite 5	NO (-41.4%)	NO
Junior Suite 5	NO (-41.7%)	NO
Junior Suite 6	NO (-19.1%)	NO
Junior Suite 6	NO (-41%)	NO
Junior Suite 6	NO (-40.8%)	NO
Junior Suite 6	NO (-49.2%)	NO
Junior Suite 6	NO (-41%)	NO
Junior Suite 6	NO (-41.3%)	NO
Junior Suite 6	NO (-3.7%)	NO
Junior Suite 6	NO (-46%)	NO
Junior Suite 7	NO (-2.6%)	NO
Junior Suite 7	NO (-45%)	NO
Junior Suite 7	NO (-40.1%)	NO
Junior Suite 7	NO (-40.7%)	NO
Junior Suite 7	NO (-40.2%)	NO
Junior Suite 7	NO (-48.1%)	NO
Junior Suite 7	NO (-19.9%)	NO
Junior Suite 7	NO (-40.2%)	NO
Junior Suite 8	NO (-0.5%)	NO
Junior Suite 8	NO (-39.6%)	NO
Junior Suite 8	NO (-45.2%)	NO
Junior Suite 8	NO (-40.4%)	NO
Junior Suite 8	NO (-19.9%)	NO
Junior Suite 8	NO (-48.1%)	NO
Junior Suite 8	NO (-39.6%)	NO
Junior Suite 8	NO (-39.5%)	NO
Junior Suite 9	NO (-36.4%)	NO
Junior Suite 9	NO (-16.7%)	NO
Junior Suite 9	NO (-35.5%)	NO
Junior Suite 9	YES (+5.8%)	NO
Junior Suite 9	NO (-36.4%)	NO
Junior Suite 9	NO (-37.6%)	NO
Junior Suite 10	NO (-30.2%)	NO
Junior Suite 10	NO (-46.1%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Junior Suite 10	NO (-48.1%)	NO
Junior Suite 10	NO (-54.4%)	NO
Junior Suite 10	NO (-52%)	NO
Junior Suite 10	NO (-45.8%)	NO
Junior Suite 10	NO (-11.9%)	NO
Junior Suite 10	NO (-46.7%)	NO
Junior Suite 11	NO (-29.9%)	NO
Junior Suite 11	NO (-30.2%)	NO
Junior Suite 11	NO (-36.8%)	NO
Junior Suite 11	NO (-29.8%)	NO
Junior Suite 11	NO (-29.2%)	NO
Junior Suite 11	YES (+25.6%)	NO
Junior Suite 11	NO (-40.3%)	NO
Junior Suite 11	NO (-33.6%)	NO
Junior Suite 12	NO (-33.2%)	NO
Junior Suite 12	NO (-9.5%)	NO
Junior Suite 12	N/A	N/A
Junior Suite 12	NO (-4.3%)	NO
Junior Suite 12	NO (-2.3%)	NO
Junior Suite 12	NO (-5.5%)	NO
Junior Suite 12	N/A	N/A
Junior Suite 12	NO (-9.6%)	NO
Junior Suite 12	NO (-13.3%)	NO
Junior Suite 12	NO (-58.4%)	NO
Junior Suite 13	NO (-22%)	NO
Junior Suite 13	NO (-70.8%)	NO
Junior Suite 13	N/A	N/A
Junior Suite 13	NO (-52.9%)	NO
Junior Suite 13	N/A	N/A
Junior Suite 14	NO (-64.6%)	NO
Junior Suite 15	NO (-64.1%)	NO
Junior Suite 16	NO (-68.9%)	NO
Junior Suite 17	NO (-68.4%)	NO
Junior Suite 18	NO (-63.7%)	NO
Junior Suite 19	NO (-60.3%)	NO
Junior Suite 20	NO (-58.1%)	NO
Junior Suite 21	NO (-58.6%)	NO
Junior Suite 21	NO (-57.5%)	NO
Junior Suite 22	N/A	N/A
Junior Suite 22	NO (-69.7%)	NO
Junior Suite 22	N/A	N/A
Junior Suite 22	NO (-55.1%)	NO
Junior Suite 22	N/A	N/A
Junior Suite 22	NO (-77.2%)	NO
Junior Suite 22	NO (-75.5%)	NO
Junior Suite 22	NO (-56.4%)	NO
Junior Suite 22	NO (-74%)	NO
Junior Suite 22	N/A	N/A
Junior Suite 23	NO (-66.2%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Junior Suite 23	NO (-76%)	NO
Junior Suite 23	NO (-78.2%)	NO
Junior Suite 23	NO (-74.9%)	NO
Junior Suite 24	NO (-75.6%)	NO
Junior Suite 24	NO (-81.4%)	NO
Junior Suite 24	NO (-78.1%)	NO
Junior Suite 25	NO (-81%)	NO
Junior Suite 25	NO (-78%)	NO
Junior Suite 25	NO (-76.1%)	NO
Junior Suite 25	NO (-41.4%)	NO
Junior Suite 26	N/A	N/A
Junior Suite 26	NO (-75.8%)	NO
Junior Suite 26	NO (-57.7%)	NO
Junior Suite 26	N/A	N/A
Junior Suite 26	N/A	N/A
Junior Suite 26	NO (-49.1%)	NO
Junior Suite 26	N/A	N/A
Junior Suite 26	NO (-38.6%)	NO
Junior Suite 26	NO (-71.2%)	NO
Junior Suite 26	NO (-77.2%)	NO
Junior Suite 27	NO (-53.9%)	NO
Junior Suite 27	NO (-75.9%)	NO
Junior Suite 27	NO (-37.5%)	NO
Junior Suite 27	NO (-45.8%)	NO
Junior Suite 27	NO (-68.9%)	NO
Junior Suite 27	NO (-70.8%)	NO
Junior Suite 27	NO (-73.7%)	NO
Junior Suite 27	NO (-60%)	NO
Junior Suite 27	NO (-65.8%)	NO
Junior Suite 27	NO (-61.9%)	NO
Junior Suite 28	NO (-37%)	NO
Junior Suite 28	NO (-52.3%)	NO
Junior Suite 28	NO (-76.5%)	NO
Junior Suite 28	NO (-44.5%)	NO
Junior Suite 29	NO (-77.9%)	NO
Junior Suite 29	NO (-36.6%)	NO
Junior Suite 29	NO (-52.7%)	NO
Junior Suite 29	NO (-44.2%)	NO
Junior Suite 30	NO (-80.4%)	NO
Junior Suite 30	NO (-44.6%)	NO
Junior Suite 30	NO (-53.5%)	NO
Junior Suite 30	NO (-68.2%)	NO
Junior Suite 30	NO (-65.6%)	NO
Junior Suite 30	NO (-60.5%)	NO
Junior Suite 31	NO (-60.8%)	NO
Junior Suite 31	NO (-71.8%)	NO
Junior Suite 31	NO (-68%)	NO
Junior Suite 32	NO (-66.4%)	NO
Junior Suite 32	NO (-74.2%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Junior Suite 32	NO (-83.9%)	NO
Junior Suite 32	NO (-61.7%)	NO
Junior Suite 32	N/A	N/A
Junior Suite 32	NO (-86%)	NO
Junior Suite 32	N/A	N/A
Junior Suite 32	NO (-71.9%)	NO
Junior Suite 32	NO (-71.8%)	NO
Junior Suite 33	NO (-63.6%)	NO
Junior Suite 33	NO (-79.9%)	NO
Junior Suite 33	NO (-62.2%)	NO
Junior Suite 33	NO (-66.2%)	NO
Junior Suite 33	NO (-81%)	NO
Junior Suite 34	NO (-63.6%)	NO
Junior Suite 34	NO (-66.5%)	NO
Junior Suite 34	NO (-64.2%)	NO
Junior Suite 34	NO (-72.1%)	NO
Junior Suite 34	NO (-74.1%)	NO
Junior Suite 35	NO (-72.2%)	NO
Junior Suite 35	NO (-67.2%)	NO
Junior Suite 35	NO (-62.6%)	NO
Junior Suite 35	NO (-74%)	NO
Junior Suite 35	NO (-65.5%)	NO
Junior Suite 36	NO (-72.5%)	NO
Junior Suite 36	NO (-68.3%)	NO
Junior Suite 36	NO (-67.1%)	NO
Junior Suite 36	NO (-66.1%)	NO
Junior Suite 36	NO (-74%)	NO
Junior Suite 37	NO (-74.7%)	NO
Junior Suite 37	NO (-71.2%)	NO
Junior Suite 37	NO (-74.6%)	NO
Junior Suite 37	NO (-73%)	NO
Junior Suite 37	NO (-70%)	NO
Junior Suite 38	NO (-76.6%)	NO
Junior Suite 38	NO (-75.5%)	NO
Junior Suite 38	NO (-76.3%)	NO
Junior Suite 38	NO (-74.8%)	NO
Junior Suite 39	NO (-78.5%)	NO
Junior Suite 39	NO (-79.4%)	NO
Management	N/A	N/A
Meeting Room	NO (-38.8%)	NO
Podcast Room	NO (-73.2%)	NO
Reception	NO (-62.3%)	NO
Social Lounge	NO (-33.4%)	NO
Wellfare	N/A	N/A
Wellfare	NO (-90%)	NO

Regulation 25A: Consideration of high efficiency 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
Floor area [m ²]	8510.6	8510.6
External area [m ²]	7594.1	7594.1
Weather	MAN	MAN
Infiltration [m ³ /hm ² @ 50Pa]	3	3
Average conductance [W/K]	3881.9	0
Average U-value [W/m ² K]	0.51	0
Alpha value* [%]	25.33	10

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

Building Use

% Area Building Type

3 Retail/Financial and Professional Services

Restaurants and Cafes/Drinking Establishments/Takeaways
Offices and Workshop Businesses
General Industrial and Special Industrial Groups
Storage or Distribution

97 Hotels

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

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	18.83	10.54
Cooling	0.61	0.39
Auxiliary	6.73	8.65
Lighting	8.84	7.83
Hot water	108.3	69.96
Equipment*	21.81	21.81
TOTAL **	143.3	97.37

* 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	0.8
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	<i>0</i>	<i>0.8</i>

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	116.88	85.76
Primary energy [kWh _{PE} /m ²]	212.41	143.07
Total emissions [kg/m ²]	19.66	13.23

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] Variable refrigerant flow, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	114.7	10.8	12.9	0.9	9.5	2.47	3.5	2.5	5
	Notional	73.8	9.1	7.4	0.5	11.9	2.78	4.63	----	----
[ST] Other local room heater - unfanned, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	157.8	0	54.8	0	0	0.8	0	1	0
	Notional	152.8	0	30.1	0	0	1.41	0	----	----
[ST] No Heating or Cooling										
	Actual	0	0	0	0	0	0	0	0	0
	Notional	0	0	0	0	0	0	0	----	----

Key to terms

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

Appendix A-5b

BRUKL Output Document:
Boulton House – Existing (Refurbished)



INVESTORS
IN PEOPLE

Project name

Boulton House Existing**As designed****Date:** Thu Jun 05 14:32:12 2025

Administrative information

Building Details

Address: 17 Chorlton Street, Manchester, M1 3HY

Certifier details

Name: Consolux M&E Consulting Ltd**Telephone number:** 0151 708 9469**Address:** 7th Floor, Cotton House, Cotton Exchange Building, Old Hall Street, Liverpool, L3 9LQ

Certification tool

Calculation engine: Apache**Calculation engine version:** 7.0.28**Interface to calculation engine:** IES Virtual Environment**Interface to calculation engine version:** 7.0.28**BRUKL compliance module version:** v6.1.e.1**Foundation area [m²]:** 837.7The CO₂ emission and primary energy rates of the building must not exceed the targets

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	13.22
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	11.27
Target primary energy rate (TPER), kWh _{PE} /m ² annum	142.91
Building primary energy rate (BPER), kWh _{PE} /m ² annum	121.26
Do the building's emission and primary energy rates exceed the targets?	BER ≤ TER BPER ≤ TPER

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

Fabric element	U _{a-Limit}	U _{a-Calc}	U _{i-Calc}	First surface with maximum value
Walls*	0.26	0.3	0.3	JN000080:Surf[0]
Floors	0.18	0.1	0.1	LV000043:Surf[0]
Pitched roofs	0.16	-	-	No pitched roofs in building
Flat roofs	0.18	0.18	0.18	JN0000DA:Surf[0]
Windows** and roof windows	1.6	1.2	1.2	JN00017C:Surf[0]
Rooflights***	2.2	1.3	1.3	LV000056:Surf[1]
Personnel doors^	1.6	1.29	2.2	LV00002A:Surf[2]
Vehicle access & similar large doors	1.3	-	-	No vehicle access doors in building
High usage entrance doors	3	-	-	No high usage entrance doors in building
U _{a-Limit} = Limiting area-weighted average U-values [W/(m ² K)] U _{a-Calc} = Calculated area-weighted average U-values [W/(m ² K)] U _{i-Calc} = Calculated maximum individual element U-values [W/(m ² K)] * Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows. ** Display windows and similar glazing are excluded from the U-value check. *** Values for rooflights refer to the horizontal position. ^ For fire doors, limiting U-value is 1.8 W/m ² K NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.				

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

Building services

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

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

1- VRF

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.98	5.46	0	1	0.7
Standard value	2.5*	N/A	N/A	2^	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.					
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

2- Panel

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0	-	-
Standard value	N/A	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES

1- DHW

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	3.73	0.005
Standard value	1	N/A

2- DHW (PoU)

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

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

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
1 Bed Suite 1_Bathroom		100	-	-
1 Bed Suite 1_Bathroom		100	-	-
1 Bed Suite 1_Bathroom		100	-	-
1 Bed Suite 1_Bathroom		100	-	-
1 Bed Suite 1_Bathroom		100	-	-
1 Bed Suite 1_Bathroom		100	-	-
1 Bed Suite 1_Bathroom		100	-	-
1 Bed Suite 1_Bathroom		100	-	-
1 Bed Suite 1_Bedroom		100	-	-
1 Bed Suite 1_Bedroom		100	-	-
1 Bed Suite 1_Bedroom		100	-	-
1 Bed Suite 1_Bedroom		100	-	-
1 Bed Suite 1_Bedroom		100	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
1 Bed Suite 1_Bedroom		100	-	-
1 Bed Suite 1_Bedroom		100	-	-
1 Bed Suite 1_Bedroom		100	-	-
1 Bed Suite 1_Living/Kitchen		100	-	-
1 Bed Suite 1_Living/Kitchen		100	-	-
1 Bed Suite 1_Living/Kitchen		100	-	-
1 Bed Suite 1_Living/Kitchen		100	-	-
1 Bed Suite 1_Living/Kitchen		100	-	-
1 Bed Suite 1_Living/Kitchen		100	-	-
1 Bed Suite 1_Living/Kitchen		100	-	-
1 Bed Suite 1_Living/Kitchen		100	-	-
1 Bed Suite 23_Bathroom		100	-	-
1 Bed Suite 23_Bedroom		100	-	-
1 Bed Suite 23_Living/Kitchen		100	-	-
1 Bed Suite 23_Living/Kitchen		100	-	-
1 Bed Suite 23_Living/Kitchen		100	-	-
1 Bed Suite 31_Bathroom		100	-	-
1 Bed Suite 31_Bathroom		100	-	-
1 Bed Suite 31_Bedroom		100	-	-
1 Bed Suite 31_Bedroom		100	-	-
Acc Suite 14		100	-	-
Acc Suite 14		100	-	-
Acc Suite 14_Bathroom		100	-	-
Acc Suite 14_Bathroom		100	-	-
Acc Suite 15		100	-	-
Acc Suite 15		100	-	-
Acc Suite 15_Bathroom		100	-	-
Acc Suite 23		100	-	-
Acc Suite 23_Bathroom		100	-	-
Acc Suite 24		100	-	-
Acc Suite 24		100	-	-
Acc Suite 24		100	-	-
Acc Suite 24_Bathroom		100	-	-
Acc Suite 24_Bathroom		100	-	-
Acc Suite 24_Bathroom		100	-	-
Acc Suite 25		100	-	-
Acc Suite 25		100	-	-
Acc Suite 25_Bathroom		100	-	-
Acc Suite 25_Bathroom		100	-	-
ACC WC		100	-	-
ACC WC		100	-	-
Bin Store		100	-	-
Business Lounge		100	-	-

[illegible]

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]		Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95		80	0.3
Junior Suite 3_Bathroom		100		-	-
Junior Suite 3_Bathroom		100		-	-
Junior Suite 3_Bathroom		100		-	-
Junior Suite 3_Bathroom		100		-	-
Junior Suite 3_Bathroom		100		-	-
Junior Suite 3_Bathroom		100		-	-
Junior Suite 3_Bathroom		100		-	-
Junior Suite 4		100		-	-
Junior Suite 4		100		-	-
Junior Suite 4		100		-	-
Junior Suite 4		100		-	-
Junior Suite 4		100		-	-
Junior Suite 4		100		-	-
Junior Suite 4		100		-	-
Junior Suite 4		100		-	-
Junior Suite 4		100		-	-
Junior Suite 4_Bathroom		100		-	-
Junior Suite 4_Bathroom		100		-	-
Junior Suite 4_Bathroom		100		-	-
Junior Suite 4_Bathroom		100		-	-
Junior Suite 4_Bathroom		100		-	-
Junior Suite 4_Bathroom		100		-	-
Junior Suite 4_Bathroom		100		-	-
Junior Suite 4_Bathroom		100		-	-
Junior Suite 5		100		-	-
Junior Suite 5		100		-	-
Junior Suite 5		100		-	-
Junior Suite 5		100		-	-
Junior Suite 5		100		-	-
Junior Suite 5		100		-	-
Junior Suite 5_Bathroom		100		-	-
Junior Suite 5_Bathroom		100		-	-
Junior Suite 5_Bathroom		100		-	-
Junior Suite 5_Bathroom		100		-	-
Junior Suite 5_Bathroom		100		-	-
Junior Suite 5_Bathroom		100		-	-
Junior Suite 6		100		-	-
Junior Suite 6		100		-	-
Junior Suite 6		100		-	-
Junior Suite 6		100		-	-
Junior Suite 6		100		-	-
Junior Suite 6		100		-	-
Junior Suite 6		100		-	-
Junior Suite 6		100		-	-

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80		0.3
Junior Suite 6_Bathroom		100	-		-
Junior Suite 6_Bathroom		100	-		-
Junior Suite 6_Bathroom		100	-		-
Junior Suite 6_Bathroom		100	-		-
Junior Suite 6_Bathroom		100	-		-
Junior Suite 6_Bathroom		100	-		-
Junior Suite 6_Bathroom		100	-		-
Junior Suite 6_Bathroom		100	-		-
Junior Suite 7		100	-		-
Junior Suite 7		100	-		-
Junior Suite 7		100	-		-
Junior Suite 7		100	-		-
Junior Suite 7		100	-		-
Junior Suite 7		100	-		-
Junior Suite 7		100	-		-
Junior Suite 7		100	-		-
Junior Suite 7		100	-		-
Junior Suite 7_Bathroom		100	-		-
Junior Suite 7_Bathroom		100	-		-
Junior Suite 7_Bathroom		100	-		-
Junior Suite 7_Bathroom		100	-		-
Junior Suite 7_Bathroom		100	-		-
Junior Suite 7_Bathroom		100	-		-
Junior Suite 7_Bathroom		100	-		-
Junior Suite 7_Bathroom		100	-		-
Junior Suite 7_Bathroom		100	-		-
Junior Suite 8		100	-		-
Junior Suite 8		100	-		-
Junior Suite 8		100	-		-
Junior Suite 8		100	-		-
Junior Suite 8		100	-		-
Junior Suite 8		100	-		-
Junior Suite 8		100	-		-
Junior Suite 8		100	-		-
Junior Suite 8_Bathroom		100	-		-
Junior Suite 8_Bathroom		100	-		-
Junior Suite 8_Bathroom		100	-		-
Junior Suite 8_Bathroom		100	-		-
Junior Suite 8_Bathroom		100	-		-
Junior Suite 8_Bathroom		100	-		-
Junior Suite 8_Bathroom		100	-		-
Junior Suite 8_Bathroom		100	-		-
Junior Suite 9		100	-		-
Junior Suite 9		100	-		-
Junior Suite 9		100	-		-

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3	
Junior Suite 9		100	-	-	
Junior Suite 9		100	-	-	
Junior Suite 9		100	-	-	
Junior Suite 9_Bathroom		100	-	-	
Junior Suite 9_Bathroom		100	-	-	
Junior Suite 9_Bathroom		100	-	-	
Junior Suite 9_Bathroom		100	-	-	
Junior Suite 9_Bathroom		100	-	-	
Junior Suite 9_Bathroom		100	-	-	
Junior Suite 10		100	-	-	
Junior Suite 10		100	-	-	
Junior Suite 10		100	-	-	
Junior Suite 10		100	-	-	
Junior Suite 10		100	-	-	
Junior Suite 10		100	-	-	
Junior Suite 10		100	-	-	
Junior Suite 10		100	-	-	
Junior Suite 10_Bathroom		100	-	-	
Junior Suite 10_Bathroom		100	-	-	
Junior Suite 10_Bathroom		100	-	-	
Junior Suite 10_Bathroom		100	-	-	
Junior Suite 10_Bathroom		100	-	-	
Junior Suite 10_Bathroom		100	-	-	
Junior Suite 10_Bathroom		100	-	-	
Junior Suite 10_Bathroom		100	-	-	
Junior Suite 11		100	-	-	
Junior Suite 11		100	-	-	
Junior Suite 11		100	-	-	
Junior Suite 11		100	-	-	
Junior Suite 11		100	-	-	
Junior Suite 11		100	-	-	
Junior Suite 11		100	-	-	
Junior Suite 11		100	-	-	
Junior Suite 11_Bathroom		100	-	-	
Junior Suite 11_Bathroom		100	-	-	
Junior Suite 11_Bathroom		100	-	-	
Junior Suite 11_Bathroom		100	-	-	
Junior Suite 11_Bathroom		100	-	-	
Junior Suite 11_Bathroom		100	-	-	
Junior Suite 11_Bathroom		100	-	-	
Junior Suite 12		100	-	-	
Junior Suite 12		100	-	-	

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
Junior Suite 12		100	-	-
Junior Suite 12		100	-	-
Junior Suite 12		100	-	-
Junior Suite 12		100	-	-
Junior Suite 12		100	-	-
Junior Suite 12		100	-	-
Junior Suite 12		100	-	-
Junior Suite 12		100	-	-
Junior Suite 12_Bathroom		100	-	-
Junior Suite 12_Bathroom		100	-	-
Junior Suite 12_Bathroom		100	-	-
Junior Suite 12_Bathroom		100	-	-
Junior Suite 12_Bathroom		100	-	-
Junior Suite 13		100	-	-
Junior Suite 13		100	-	-
Junior Suite 13		100	-	-
Junior Suite 13		100	-	-
Junior Suite 13		100	-	-
Junior Suite 13_Bathroom		100	-	-
Junior Suite 13_Bathroom		100	-	-
Junior Suite 13_Bathroom		100	-	-
Junior Suite 14		100	-	-
Junior Suite 14_Bathroom		100	-	-
Junior Suite 15		100	-	-
Junior Suite 15_Bathroom		100	-	-
Junior Suite 16		100	-	-
Junior Suite 16_Bathroom		100	-	-
Junior Suite 16_Bathroom		100	-	-
Junior Suite 17		100	-	-
Junior Suite 17_Bathroom		100	-	-
Junior Suite 18		100	-	-
Junior Suite 18_Bathroom		100	-	-
Junior Suite 19		100	-	-
Junior Suite 19_Bathroom		100	-	-
Junior Suite 20		100	-	-
Junior Suite 20_Bathroom		100	-	-
Junior Suite 21		100	-	-
Junior Suite 21		100	-	-
Junior Suite 21_Bathroom		100	-	-
Junior Suite 21_Bathroom		100	-	-
Junior Suite 22		100	-	-
Junior Suite 22		100	-	-
Junior Suite 22		100	-	-

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3	
Junior Suite 22		100	-	-	
Junior Suite 22		100	-	-	
Junior Suite 22		100	-	-	
Junior Suite 22		100	-	-	
Junior Suite 22		100	-	-	
Junior Suite 22		100	-	-	
Junior Suite 22		100	-	-	
Junior Suite 22_Bathroom		100	-	-	
Junior Suite 22_Bathroom		100	-	-	
Junior Suite 22_Bathroom		100	-	-	
Junior Suite 22_Bathroom		100	-	-	
Junior Suite 23		100	-	-	
Junior Suite 23		100	-	-	
Junior Suite 23		100	-	-	
Junior Suite 23		100	-	-	
Junior Suite 23_Bathroom		100	-	-	
Junior Suite 23_Bathroom		100	-	-	
Junior Suite 23_Bathroom		100	-	-	
Junior Suite 23_Bathroom		100	-	-	
Junior Suite 24		100	-	-	
Junior Suite 24		100	-	-	
Junior Suite 24		100	-	-	
Junior Suite 24_Bathroom		100	-	-	
Junior Suite 24_Bathroom		100	-	-	
Junior Suite 24_Bathroom		100	-	-	
Junior Suite 24_Bathroom		100	-	-	
Junior Suite 25		100	-	-	
Junior Suite 25		100	-	-	
Junior Suite 25		100	-	-	
Junior Suite 25		100	-	-	
Junior Suite 25_Bathroom		100	-	-	
Junior Suite 25_Bathroom		100	-	-	
Junior Suite 25_Bathroom		100	-	-	
Junior Suite 25_Bathroom		100	-	-	
Junior Suite 26		100	-	-	
Junior Suite 26		100	-	-	
Junior Suite 26		100	-	-	
Junior Suite 26		100	-	-	
Junior Suite 26		100	-	-	
Junior Suite 26		100	-	-	
Junior Suite 26		100	-	-	
Junior Suite 26		100	-	-	
Junior Suite 26		100	-	-	
Junior Suite 26		100	-	-	

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
Junior Suite 26_Bathroom		100	-	-
Junior Suite 26_Bathroom		100	-	-
Junior Suite 26_Bathroom		100	-	-
Junior Suite 26_Bathroom		100	-	-
Junior Suite 27		100	-	-
Junior Suite 27		100	-	-
Junior Suite 27		100	-	-
Junior Suite 27		100	-	-
Junior Suite 27		100	-	-
Junior Suite 27		100	-	-
Junior Suite 27		100	-	-
Junior Suite 27		100	-	-
Junior Suite 27		100	-	-
Junior Suite 27		100	-	-
Junior Suite 27_Bathroom		100	-	-
Junior Suite 27_Bathroom		100	-	-
Junior Suite 27_Bathroom		100	-	-
Junior Suite 27_Bathroom		100	-	-
Junior Suite 27_Bathroom		100	-	-
Junior Suite 27_Bathroom		100	-	-
Junior Suite 27_Bathroom		100	-	-
Junior Suite 27_Bathroom		100	-	-
Junior Suite 27_Bathroom		100	-	-
Junior Suite 27_Bathroom		100	-	-
Junior Suite 27_Bathroom		100	-	-
Junior Suite 27_Bathroom		100	-	-
Junior Suite 27_Bathroom		100	-	-
Junior Suite 27_Bathroom		100	-	-
Junior Suite 28		100	-	-
Junior Suite 28		100	-	-
Junior Suite 28		100	-	-
Junior Suite 28		100	-	-
Junior Suite 28_Bathroom		100	-	-
Junior Suite 28_Bathroom		100	-	-
Junior Suite 28_Bathroom		100	-	-
Junior Suite 28_Bathroom		100	-	-
Junior Suite 29		100	-	-
Junior Suite 29		100	-	-
Junior Suite 29		100	-	-
Junior Suite 29		100	-	-
Junior Suite 29_Bathroom		100	-	-
Junior Suite 29_Bathroom		100	-	-
Junior Suite 29_Bathroom		100	-	-
Junior Suite 29_Bathroom		100	-	-
Junior Suite 30		100	-	-
Junior Suite 30		100	-	-
Junior Suite 30		100	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
Junior Suite 30		100	-	-
Junior Suite 30		100	-	-
Junior Suite 30		100	-	-
Junior Suite 30_Bathroom		100	-	-
Junior Suite 30_Bathroom		100	-	-
Junior Suite 30_Bathroom		100	-	-
Junior Suite 30_Bathroom		100	-	-
Junior Suite 30_Bathroom		100	-	-
Junior Suite 30_Bathroom		100	-	-
Junior Suite 30_Bathroom		100	-	-
Junior Suite 31		100	-	-
Junior Suite 31		100	-	-
Junior Suite 31		100	-	-
Junior Suite 31_Bathroom		100	-	-
Junior Suite 31_Bathroom		100	-	-
Junior Suite 31_Bathroom		100	-	-
Junior Suite 32		100	-	-
Junior Suite 32		100	-	-
Junior Suite 32		100	-	-
Junior Suite 32		100	-	-
Junior Suite 32		100	-	-
Junior Suite 32		100	-	-
Junior Suite 32		100	-	-
Junior Suite 32		100	-	-
Junior Suite 32		100	-	-
Junior Suite 32_Bathroom		100	-	-
Junior Suite 32_Bathroom		100	-	-
Junior Suite 32_Bathroom		100	-	-
Junior Suite 33		100	-	-
Junior Suite 33		100	-	-
Junior Suite 33		100	-	-
Junior Suite 33		100	-	-
Junior Suite 33		100	-	-
Junior Suite 33_Bathroom		100	-	-
Junior Suite 33_Bathroom		100	-	-
Junior Suite 33_Bathroom		100	-	-
Junior Suite 33_Bathroom		100	-	-
Junior Suite 33_Bathroom		100	-	-
Junior Suite 34		100	-	-
Junior Suite 34		100	-	-
Junior Suite 34		100	-	-
Junior Suite 34		100	-	-
Junior Suite 34		100	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
Junior Suite 34_Bathroom		100	-	-
Junior Suite 34_Bathroom		100	-	-
Junior Suite 34_Bathroom		100	-	-
Junior Suite 34_Bathroom		100	-	-
Junior Suite 34_Bathroom		100	-	-
Junior Suite 35		100	-	-
Junior Suite 35		100	-	-
Junior Suite 35		100	-	-
Junior Suite 35		100	-	-
Junior Suite 35		100	-	-
Junior Suite 35_Bathroom		100	-	-
Junior Suite 35_Bathroom		100	-	-
Junior Suite 35_Bathroom		100	-	-
Junior Suite 35_Bathroom		100	-	-
Junior Suite 35_Bathroom		100	-	-
Junior Suite 36		100	-	-
Junior Suite 36		100	-	-
Junior Suite 36		100	-	-
Junior Suite 36		100	-	-
Junior Suite 36		100	-	-
Junior Suite 36_Bathroom		100	-	-
Junior Suite 36_Bathroom		100	-	-
Junior Suite 36_Bathroom		100	-	-
Junior Suite 36_Bathroom		100	-	-
Junior Suite 36_Bathroom		100	-	-
Junior Suite 37		100	-	-
Junior Suite 37		100	-	-
Junior Suite 37		100	-	-
Junior Suite 37		100	-	-
Junior Suite 37		100	-	-
Junior Suite 37_Bathroom		100	-	-
Junior Suite 37_Bathroom		100	-	-
Junior Suite 37_Bathroom		100	-	-
Junior Suite 37_Bathroom		100	-	-
Junior Suite 37_Bathroom		100	-	-
Junior Suite 38		100	-	-
Junior Suite 38		100	-	-
Junior Suite 38		100	-	-
Junior Suite 38		100	-	-
Junior Suite 38_Bathroom		100	-	-
Junior Suite 38_Bathroom		100	-	-
Junior Suite 38_Bathroom		100	-	-
Junior Suite 38_Bathroom		100	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
Junior Suite 39		100	-	-
Junior Suite 39		100	-	-
Junior Suite 39_Bathroom		100	-	-
Junior Suite 39_Bathroom		100	-	-
Laundry/ cleaners closet		100	-	-
Laundry/ cleaners closet		100	-	-
Laundry/ cleaners closet		100	-	-
Lift Lobby		100	-	-
Lift Lobby		100	-	-
Lift Lobby		100	-	-
Lift Lobby		100	-	-
Lift Lobby		100	-	-
Lift Lobby		100	-	-
Lift Lobby		100	-	-
Lift Lobby		100	-	-
Lift Lobby		100	-	-
Lift Lobby		100	-	-
Lift Lobby		100	-	-
Management		100	-	-
Meeting Room		100	-	-
Plant		100	-	-
Podcast Room		100	-	-
Reception		100	75	1.8
Social Lounge		100	75	1.8
Stairs		100	-	-
Stairs		100	-	-
Store		100	-	-
Store		100	-	-
Store		100	-	-
Store		100	-	-
Store		100	-	-
Store		100	-	-
Wellfare		100	-	-
Wellfare		100	-	-

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

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
1 Bed Suite 1_Bedroom	NO (-59.4%)	NO
1 Bed Suite 1_Bedroom	NO (-75.8%)	NO
1 Bed Suite 1_Bedroom	NO (-56.5%)	NO
1 Bed Suite 1_Bedroom	NO (-64.7%)	NO
1 Bed Suite 1_Bedroom	NO (-74.1%)	NO
1 Bed Suite 1_Bedroom	NO (-29.8%)	NO
1 Bed Suite 1_Bedroom	NO (-76.5%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
1 Bed Suite 1_Bedroom	NO (-70.8%)	NO
1 Bed Suite 1_Living/Kitchen	NO (-62.2%)	NO
1 Bed Suite 1_Living/Kitchen	NO (-71.8%)	NO
1 Bed Suite 1_Living/Kitchen	NO (-50%)	NO
1 Bed Suite 1_Living/Kitchen	NO (-38.1%)	NO
1 Bed Suite 1_Living/Kitchen	NO (-74.1%)	NO
1 Bed Suite 1_Living/Kitchen	NO (-46.9%)	NO
1 Bed Suite 1_Living/Kitchen	NO (-70.6%)	NO
1 Bed Suite 1_Living/Kitchen	NO (-76.1%)	NO
1 Bed Suite 23_Bedroom	NO (-79.6%)	NO
1 Bed Suite 23_Living/Kitchen	NO (-61.5%)	NO
1 Bed Suite 23_Living/Kitchen	NO (-54.2%)	NO
1 Bed Suite 23_Living/Kitchen	NO (-60.5%)	NO
1 Bed Suite 31_Bedroom	NO (-79.5%)	NO
1 Bed Suite 31_Bedroom	NO (-75.8%)	NO
Acc Suite 14	NO (-13.7%)	NO
Acc Suite 14	NO (-48.1%)	NO
Acc Suite 15	NO (-75%)	NO
Acc Suite 15	NO (-16.5%)	NO
Acc Suite 23	NO (-48.9%)	NO
Acc Suite 24	NO (-54.4%)	NO
Acc Suite 24	NO (-67.2%)	NO
Acc Suite 24	NO (-60.2%)	NO
Acc Suite 25	NO (-61%)	NO
Acc Suite 25	NO (-67%)	NO
ACC WC	N/A	N/A
ACC WC	N/A	N/A
Business Lounge	NO (-66%)	NO
Business Lounge (individual space)	N/A	N/A
Business Lounge (individual space)	N/A	N/A
Commercial	NO (-42.4%)	NO
Gym /Yoga Studio	NO (-53.7%)	NO
Junior Suite 5	NO (-46.9%)	NO
Junior Suite 5	NO (-49.2%)	NO
Junior Suite 9	NO (-45.3%)	NO
Junior Suite 9	NO (-42.4%)	NO
Junior Suite 2	NO (-58.9%)	NO
Junior Suite 2	NO (-17.5%)	NO
Junior Suite 2	NO (-56.6%)	NO
Junior Suite 2	NO (-55.9%)	NO
Junior Suite 2	NO (-51.8%)	NO
Junior Suite 2	NO (-63.3%)	NO
Junior Suite 2	NO (-61.7%)	NO
Junior Suite 2	NO (-57.5%)	NO
Junior Suite 3	NO (-52.6%)	NO
Junior Suite 3	NO (-41.9%)	NO
Junior Suite 3	NO (-44.6%)	NO
Junior Suite 3	NO (-43.7%)	NO
Junior Suite 3	NO (-42.8%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Junior Suite 3	NO (-24%)	NO
Junior Suite 3	NO (-50%)	NO
Junior Suite 3	NO (-5.2%)	NO
Junior Suite 4	NO (-48.5%)	NO
Junior Suite 4	NO (-5.9%)	NO
Junior Suite 4	NO (-51.3%)	NO
Junior Suite 4	NO (-42.6%)	NO
Junior Suite 4	NO (-22.4%)	NO
Junior Suite 4	NO (-42.7%)	NO
Junior Suite 4	NO (-43%)	NO
Junior Suite 4	NO (-42.7%)	NO
Junior Suite 5	NO (-41.5%)	NO
Junior Suite 5	NO (-41.8%)	NO
Junior Suite 5	NO (-4.2%)	NO
Junior Suite 5	NO (-18.5%)	NO
Junior Suite 5	NO (-41.4%)	NO
Junior Suite 5	NO (-41.6%)	NO
Junior Suite 6	NO (-19%)	NO
Junior Suite 6	NO (-40.9%)	NO
Junior Suite 6	NO (-40.8%)	NO
Junior Suite 6	NO (-49.1%)	NO
Junior Suite 6	NO (-40.9%)	NO
Junior Suite 6	NO (-41.3%)	NO
Junior Suite 6	NO (-3.6%)	NO
Junior Suite 6	NO (-45.9%)	NO
Junior Suite 7	NO (-2.4%)	NO
Junior Suite 7	NO (-44.9%)	NO
Junior Suite 7	NO (-40%)	NO
Junior Suite 7	NO (-40.6%)	NO
Junior Suite 7	NO (-40.1%)	NO
Junior Suite 7	NO (-48.1%)	NO
Junior Suite 7	NO (-19.8%)	NO
Junior Suite 7	NO (-40.1%)	NO
Junior Suite 8	NO (-0.4%)	NO
Junior Suite 8	NO (-39.6%)	NO
Junior Suite 8	NO (-45.1%)	NO
Junior Suite 8	NO (-40.4%)	NO
Junior Suite 8	NO (-19.8%)	NO
Junior Suite 8	NO (-48%)	NO
Junior Suite 8	NO (-39.6%)	NO
Junior Suite 8	NO (-39.5%)	NO
Junior Suite 9	NO (-36.4%)	NO
Junior Suite 9	NO (-16.6%)	NO
Junior Suite 9	NO (-35.5%)	NO
Junior Suite 9	YES (+5.9%)	NO
Junior Suite 9	NO (-36.4%)	NO
Junior Suite 9	NO (-37.5%)	NO
Junior Suite 10	NO (-30.1%)	NO
Junior Suite 10	NO (-46%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Junior Suite 10	NO (-48%)	NO
Junior Suite 10	NO (-54.4%)	NO
Junior Suite 10	NO (-52%)	NO
Junior Suite 10	NO (-45.7%)	NO
Junior Suite 10	NO (-11.8%)	NO
Junior Suite 10	NO (-46.6%)	NO
Junior Suite 11	NO (-29.9%)	NO
Junior Suite 11	NO (-30.1%)	NO
Junior Suite 11	NO (-36.7%)	NO
Junior Suite 11	NO (-29.7%)	NO
Junior Suite 11	NO (-29.2%)	NO
Junior Suite 11	YES (+25.7%)	NO
Junior Suite 11	NO (-40.3%)	NO
Junior Suite 11	NO (-33.5%)	NO
Junior Suite 12	NO (-33.3%)	NO
Junior Suite 12	NO (-9.6%)	NO
Junior Suite 12	N/A	N/A
Junior Suite 12	NO (-4.4%)	NO
Junior Suite 12	NO (-2.3%)	NO
Junior Suite 12	NO (-5.6%)	NO
Junior Suite 12	N/A	N/A
Junior Suite 12	NO (-9.6%)	NO
Junior Suite 12	NO (-13.3%)	NO
Junior Suite 12	NO (-58.4%)	NO
Junior Suite 13	NO (-22%)	NO
Junior Suite 13	NO (-70.8%)	NO
Junior Suite 13	N/A	N/A
Junior Suite 13	NO (-53%)	NO
Junior Suite 13	N/A	N/A
Junior Suite 14	NO (-64.6%)	NO
Junior Suite 15	NO (-64.1%)	NO
Junior Suite 16	NO (-68.9%)	NO
Junior Suite 17	NO (-68.3%)	NO
Junior Suite 18	NO (-63.7%)	NO
Junior Suite 19	NO (-60.3%)	NO
Junior Suite 20	NO (-58.1%)	NO
Junior Suite 21	NO (-58.6%)	NO
Junior Suite 21	NO (-57.5%)	NO
Junior Suite 22	N/A	N/A
Junior Suite 22	NO (-69.6%)	NO
Junior Suite 22	N/A	N/A
Junior Suite 22	NO (-55.2%)	NO
Junior Suite 22	N/A	N/A
Junior Suite 22	NO (-77.2%)	NO
Junior Suite 22	NO (-75.5%)	NO
Junior Suite 22	NO (-56.4%)	NO
Junior Suite 22	NO (-73.9%)	NO
Junior Suite 22	N/A	N/A
Junior Suite 23	NO (-66.2%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Junior Suite 23	NO (-76%)	NO
Junior Suite 23	NO (-78.2%)	NO
Junior Suite 23	NO (-74.9%)	NO
Junior Suite 24	NO (-75.6%)	NO
Junior Suite 24	NO (-81.4%)	NO
Junior Suite 24	NO (-78.1%)	NO
Junior Suite 25	NO (-80.9%)	NO
Junior Suite 25	NO (-78%)	NO
Junior Suite 25	NO (-76.1%)	NO
Junior Suite 25	NO (-41.4%)	NO
Junior Suite 26	N/A	N/A
Junior Suite 26	NO (-75.8%)	NO
Junior Suite 26	NO (-57.7%)	NO
Junior Suite 26	N/A	N/A
Junior Suite 26	N/A	N/A
Junior Suite 26	NO (-49.1%)	NO
Junior Suite 26	N/A	N/A
Junior Suite 26	NO (-38.7%)	NO
Junior Suite 26	NO (-71.2%)	NO
Junior Suite 26	NO (-77.2%)	NO
Junior Suite 27	NO (-53.9%)	NO
Junior Suite 27	NO (-75.9%)	NO
Junior Suite 27	NO (-37.5%)	NO
Junior Suite 27	NO (-45.9%)	NO
Junior Suite 27	NO (-68.9%)	NO
Junior Suite 27	NO (-70.8%)	NO
Junior Suite 27	NO (-73.7%)	NO
Junior Suite 27	NO (-60.1%)	NO
Junior Suite 27	NO (-65.8%)	NO
Junior Suite 27	NO (-61.9%)	NO
Junior Suite 28	NO (-37%)	NO
Junior Suite 28	NO (-52.3%)	NO
Junior Suite 28	NO (-76.5%)	NO
Junior Suite 28	NO (-44.5%)	NO
Junior Suite 29	NO (-77.8%)	NO
Junior Suite 29	NO (-36.6%)	NO
Junior Suite 29	NO (-52.7%)	NO
Junior Suite 29	NO (-44.3%)	NO
Junior Suite 30	NO (-80.4%)	NO
Junior Suite 30	NO (-44.7%)	NO
Junior Suite 30	NO (-53.5%)	NO
Junior Suite 30	NO (-68.2%)	NO
Junior Suite 30	NO (-65.6%)	NO
Junior Suite 30	NO (-60.5%)	NO
Junior Suite 31	NO (-60.8%)	NO
Junior Suite 31	NO (-71.7%)	NO
Junior Suite 31	NO (-68%)	NO
Junior Suite 32	NO (-66.4%)	NO
Junior Suite 32	NO (-74.2%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Junior Suite 32	NO (-83.9%)	NO
Junior Suite 32	NO (-61.7%)	NO
Junior Suite 32	N/A	N/A
Junior Suite 32	NO (-86%)	NO
Junior Suite 32	N/A	N/A
Junior Suite 32	NO (-71.9%)	NO
Junior Suite 32	NO (-71.8%)	NO
Junior Suite 33	NO (-63.5%)	NO
Junior Suite 33	NO (-79.9%)	NO
Junior Suite 33	NO (-62.1%)	NO
Junior Suite 33	NO (-66.2%)	NO
Junior Suite 33	NO (-81%)	NO
Junior Suite 34	NO (-63.6%)	NO
Junior Suite 34	NO (-66.5%)	NO
Junior Suite 34	NO (-64.2%)	NO
Junior Suite 34	NO (-72.1%)	NO
Junior Suite 34	NO (-74.1%)	NO
Junior Suite 35	NO (-72.2%)	NO
Junior Suite 35	NO (-67.2%)	NO
Junior Suite 35	NO (-62.6%)	NO
Junior Suite 35	NO (-74%)	NO
Junior Suite 35	NO (-65.4%)	NO
Junior Suite 36	NO (-72.5%)	NO
Junior Suite 36	NO (-68.3%)	NO
Junior Suite 36	NO (-67.1%)	NO
Junior Suite 36	NO (-66.1%)	NO
Junior Suite 36	NO (-74%)	NO
Junior Suite 37	NO (-74.7%)	NO
Junior Suite 37	NO (-71.1%)	NO
Junior Suite 37	NO (-74.6%)	NO
Junior Suite 37	NO (-72.9%)	NO
Junior Suite 37	NO (-69.9%)	NO
Junior Suite 38	NO (-76.5%)	NO
Junior Suite 38	NO (-75.5%)	NO
Junior Suite 38	NO (-76.3%)	NO
Junior Suite 38	NO (-74.8%)	NO
Junior Suite 39	NO (-78.5%)	NO
Junior Suite 39	NO (-79.4%)	NO
Management	N/A	N/A
Meeting Room	NO (-38.8%)	NO
Podcast Room	NO (-73.2%)	NO
Reception	NO (-62.3%)	NO
Social Lounge	NO (-33.3%)	NO
Wellfare	N/A	N/A
Wellfare	NO (-90%)	NO

Regulation 25A: Consideration of high efficiency 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
Floor area [m ²]	8510.6	8510.6
External area [m ²]	7594.1	7594.1
Weather	MAN	MAN
Infiltration [m ³ /hm ² @ 50Pa]	3	3
Average conductance [W/K]	3356.88	0
Average U-value [W/m ² K]	0.44	0
Alpha value* [%]	25.28	10

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

Building Use

% Area Building Type

3 Retail/Financial and Professional Services

Restaurants and Cafes/Drinking Establishments/Takeaways
Offices and Workshop Businesses
General Industrial and Special Industrial Groups
Storage or Distribution

97 Hotels

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

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	13.8	10.54
Cooling	0.65	0.39
Auxiliary	3.36	8.65
Lighting	8.43	7.83
Hot water	58.1	69.96
Equipment*	21.81	21.81
TOTAL **	84.35	97.37

* 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	2.68	0.91
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	<i>2.68</i>	<i>0.91</i>

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	100.22	85.76
Primary energy [kWh _{PE} /m ²]	121.26	142.91
Total emissions [kg/m ²]	11.27	13.22

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] Variable refrigerant flow, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	91.2	12.6	6.4	0.9	4.7	3.93	3.82	3.98	5.46
	Notional	73.8	9.1	7.4	0.5	11.9	2.78	4.63	----	----
[ST] Other local room heater - unfanned, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	150.7	0	52.3	0	0	0.8	0	1	0
	Notional	152.8	0	30.1	0	0	1.41	0	----	----
[ST] No Heating or Cooling										
	Actual	0	0	0	0	0	0	0	0	0
	Notional	0	0	0	0	0	0	0	----	----

Key to terms

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

Appendix A-5c

BRUKL Output Document: Boulton House – Extension



INVESTORS
IN PEOPLE

Project name

Boulton House Extension**As designed****Date:** Thu Jun 05 14:26:51 2025

Administrative information

Building Details

Address: 17 Chorlton Street, Manchester, M1 3HY

Certifier details

Name: Consolux M&E Consulting Ltd**Telephone number:** 0161 641 1184**Address:** 7th Floor, Cotton House, Cotton Exchange Building, Old Hall Street, Liverpool, L3 9LQ

Certification tool

Calculation engine: Apache**Calculation engine version:** 7.0.28**Interface to calculation engine:** IES Virtual Environment**Interface to calculation engine version:** 7.0.28**BRUKL compliance module version:** v6.1.e.1**Foundation area [m²]:** 432.41The CO₂ emission and primary energy rates of the building must not exceed the targets

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	12.7
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	12.56
Target primary energy rate (TPER), kWh _{PE} /m ² annum	136.33
Building primary energy rate (BPER), kWh _{PE} /m ² annum	133.94
Do the building's emission and primary energy rates exceed the targets?	BER ≤ TER BPER ≤ TPER

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

Fabric element	U _{a-Limit}	U _{a-Calc}	U _{i-Calc}	First surface with maximum value
Walls*	0.26	0.15	0.15	2B00000E:Surf[2]
Floors	0.18	0.11	0.11	2B000010:Surf[0]
Pitched roofs	0.16	-	-	No pitched roofs in building
Flat roofs	0.18	0.11	0.11	2B00000C:Surf[0]
Windows** and roof windows	1.6	1.2	1.2	2B00000E:Surf[0]
Rooflights***	2.2	-	-	No roof lights in building
Personnel doors^	1.6	1.31	2.2	2B00000E:Surf[3]
Vehicle access & similar large doors	1.3	-	-	No vehicle access doors in building
High usage entrance doors	3	-	-	No high usage entrance doors in building
U _{a-Limit} = Limiting area-weighted average U-values [W/(m ² K)] U _{a-Calc} = Calculated area-weighted average U-values [W/(m ² K)] U _{i-Calc} = Calculated maximum individual element U-values [W/(m ² K)] * Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows. ** Display windows and similar glazing are excluded from the U-value check. *** Values for rooflights refer to the horizontal position. ^ For fire doors, limiting U-value is 1.8 W/m ² K NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.				

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

Building services

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

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

1- VRF

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.98	5.46	0	1	0.7
Standard value	2.5*	N/A	N/A	1.5^	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.					
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

2- Panel

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0	-	-
Standard value	N/A	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES

1- DHW

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	3.73	0.005
Standard value	1	N/A

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

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
2 Bed Suite 2 (U)_Bathroom		100	-	-
2 Bed Suite 2 (U)_Bedroom		100	-	-
2 Bed Suite 2 (U)_Living/Kitchen		100	-	-
2 Bed Suite 3 (U)_Bathroom		100	-	-
2 Bed Suite 3 (U)_Bedroom		100	-	-
2 Bed Suite 3 (U)_Living/Kitchen		100	-	-
2 Bed Suite 4 (U)_Bathroom		100	-	-
2 Bed Suite 4 (U)_Bedroom		100	-	-
2 Bed Suite 4 (U)_Living/Kitchen		100	-	-
2 Bed Suite 06 (L)_Bathroom		100	-	-
2 Bed Suite 06 (L)_Bedroom		100	-	-
2 Bed Suite 06 (L)_Hall		100	-	-
2 Bed Suite 6 (U)_Bathroom		100	-	-
2 Bed Suite 6 (U)_Bedroom		100	-	-
2 Bed Suite 6 (U)_Living/Kitchen		100	-	-
3 Bed Suite 01(L)_Bathroom		100	-	-
3 Bed Suite 01(L)_Bedroom		100	-	-
3 Bed Suite 01(L)_Living/Kitchen		100	-	-

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80		0.3
3 Bed Suite 1 (U)_ Bathroom		100	-		-
3 Bed Suite 1 (U)_ Bathroom		100	-		-
3 Bed Suite 1 (U)_ Bedroom		100	-		-
3 Bed Suite 1 (U)_ Bedroom		100	-		-
3 Bed Suite 1 (U)_ Living/Kitchen		100	-		-
3 Bed Suite 02 (L)_ Bathroom		100	-		-
3 Bed Suite 02 (L)_ Hall		100	-		-
3 Bed Suite 2 (L)_ Bedroom		100	-		-
3 Bed Suite 3 (L)_ Bathroom		100	-		-
3 Bed Suite 3 (L)_ Bedroom		100	-		-
3 Bed Suite 3 (L)_ Hall		100	-		-
3 Bed Suite 4 (L)_ Bathroom		100	-		-
3 Bed Suite 4 (L)_ Bedroom		100	-		-
3 Bed Suite 4 (L)_ Hall		100	-		-
3 Bed Suite 5 (L)_ Bathroom		100	-		-
3 Bed Suite 5 (L)_ Bedroom		100	-		-
3 Bed Suite 5 (L)_ Hall		100	-		-
3 Bed Suite 5 (U)_ Bathroom		100	-		-
3 Bed Suite 5 (U)_ Bathroom		100	-		-
3 Bed Suite 5 (U)_ Bedroom		100	-		-
3 Bed Suite 5 (U)_ Bedroom		100	-		-
3 Bed Suite 5 (U)_ Living/Kitchen		100	-		-
Acc Suite 13		100	-		-
Acc Suite 13_ Bathroom		100	-		-
Acc Suite 14		100	-		-
Acc Suite 14_ Bathroom		100	-		-
Access Corridors		100	-		-
Circulation		100	-		-
Circulation		100	-		-
Circulation		100	-		-
Circulation		100	-		-
Circulation		100	-		-
Circulation		100	-		-
Entrance		100	-		-
Junior Suite 7		100	-		-
Junior Suite 7_ Bathroom		100	-		-
Junior Suite 8		100	-		-
Junior Suite 8		100	-		-
Junior Suite 8		100	-		-
Junior Suite 8_ Bathroom		100	-		-
Junior Suite 9		100	-		-
Junior Suite 9_ Bathroom		100	-		-
Junior Suite 10		100	-		-

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80		0.3
Junior Suite 10_Bathroom		100	-		-
Junior Suite 13		100	-		-
Junior Suite 13		100	-		-
Junior Suite 13		100	-		-
Junior Suite 13		100	-		-
Junior Suite 13		100	-		-
Junior Suite 13_Bathroom		100	-		-
Junior Suite 13_Bathroom		100	-		-
Junior Suite 13_Bathroom		100	-		-
Junior Suite 13_Bathroom		100	-		-
Junior Suite 14		100	-		-
Junior Suite 14		100	-		-
Junior Suite 14		100	-		-
Junior Suite 14		100	-		-
Junior Suite 14_Bathroom		100	-		-
Junior Suite 14_Bathroom		100	-		-
Junior Suite 14_Bathroom		100	-		-
Junior Suite 14_Bathroom		100	-		-
Junior Suite 15		100	-		-
Junior Suite 15		100	-		-
Junior Suite 15		100	-		-
Junior Suite 15		100	-		-
Junior Suite 15		100	-		-
Junior Suite 15_Bathroom		100	-		-
Junior Suite 15_Bathroom		100	-		-
Junior Suite 15_Bathroom		100	-		-
Junior Suite 15_Bathroom		100	-		-
Junior Suite 15_Bathroom		100	-		-
Junior Suite 15_Bathroom		100	-		-
Junior Suite 16		100	-		-
Junior Suite 16		100	-		-
Junior Suite 16		100	-		-
Junior Suite 16		100	-		-
Junior Suite 16		100	-		-
Junior Suite 16_Bathroom		100	-		-
Junior Suite 16_Bathroom		100	-		-
Junior Suite 16_Bathroom		100	-		-
Junior Suite 16_Bathroom		100	-		-
Junior Suite 16_Bathroom		100	-		-
Junior Suite 17		100	-		-
Junior Suite 17		100	-		-
Junior Suite 17		100	-		-
Junior Suite 17		100	-		-
Junior Suite 17		100	-		-
Junior Suite 17_Bathroom		100	-		-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
Junior Suite 17_Bathroom		100	-	-
Junior Suite 17_Bathroom		100	-	-
Junior Suite 17_Bathroom		100	-	-
Junior Suite 17_Bathroom		100	-	-
Junior Suite 18		100	-	-
Junior Suite 18		100	-	-
Junior Suite 18		100	-	-
Junior Suite 18		100	-	-
Junior Suite 18		100	-	-
Junior Suite 18_Bathroom		100	-	-
Junior Suite 18_Bathroom		100	-	-
Junior Suite 18_Bathroom		100	-	-
Junior Suite 18_Bathroom		100	-	-
Junior Suite 18_Bathroom		100	-	-
Junior Suite 19		100	-	-
Junior Suite 19		100	-	-
Junior Suite 19		100	-	-
Junior Suite 19		100	-	-
Junior Suite 19		100	-	-
Junior Suite 19_Bathroom		100	-	-
Junior Suite 19_Bathroom		100	-	-
Junior Suite 19_Bathroom		100	-	-
Junior Suite 19_Bathroom		100	-	-
Junior Suite 19_Bathroom		100	-	-
Junior Suite 20		100	-	-
Junior Suite 20		100	-	-
Junior Suite 20		100	-	-
Junior Suite 20		100	-	-
Junior Suite 20		100	-	-
Junior Suite 20_Bathroom		100	-	-
Junior Suite 20_Bathroom		100	-	-
Junior Suite 20_Bathroom		100	-	-
Junior Suite 20_Bathroom		100	-	-
Junior Suite 20_Bathroom		100	-	-
Junior Suite 21		100	-	-
Junior Suite 21		100	-	-
Junior Suite 21		100	-	-
Junior Suite 21		100	-	-
Junior Suite 21_Bathroom		100	-	-
Junior Suite 21_Bathroom		100	-	-
Junior Suite 21_Bathroom		100	-	-
Junior Suite 21_Bathroom		100	-	-
Lift Lobby		100	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
Lift Lobby		100	-	-
Lift Lobby		100	-	-
Lift Lobby		100	-	-
Lift Lobby		100	-	-
Loft Lobby		100	-	-
Stairs		100	-	-
Stairs		100	-	-
Stairs		100	-	-
Stairs		100	-	-
Stairs		100	-	-
Stairs		100	-	-
Stairs		100	-	-

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

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
2 Bed Suite 2 (U)_Bedroom	NO (-74.5%)	NO
2 Bed Suite 2 (U)_Living/Kitchen	NO (-35.7%)	NO
2 Bed Suite 3 (U)_Bedroom	NO (-79.5%)	NO
2 Bed Suite 3 (U)_Living/Kitchen	NO (-42.6%)	NO
2 Bed Suite 4 (U)_Bedroom	NO (-75.5%)	NO
2 Bed Suite 4 (U)_Living/Kitchen	NO (-48.8%)	NO
2 Bed Suite 06 (L)_Bedroom	NO (-83.2%)	NO
2 Bed Suite 06 (L)_Hall	N/A	N/A
2 Bed Suite 6 (U)_Bedroom	NO (-59.2%)	NO
2 Bed Suite 6 (U)_Living/Kitchen	NO (-82.3%)	NO
3 Bed Suite 01(L)_Bedroom	NO (-75.7%)	NO
3 Bed Suite 01(L)_Living/Kitchen	NO (-92%)	NO
3 Bed Suite 1 (U)_Bedroom	NO (-54.2%)	NO
3 Bed Suite 1 (U)_Bedroom	NO (-81.4%)	NO
3 Bed Suite 1 (U)_Living/Kitchen	NO (-82.3%)	NO
3 Bed Suite 02 (L)_Hall	N/A	N/A
3 Bed Suite 2 (L)_Bedroom	NO (-34.2%)	NO
3 Bed Suite 3 (L)_Bedroom	NO (-46%)	NO
3 Bed Suite 3 (L)_Hall	N/A	N/A
3 Bed Suite 4 (L)_Bedroom	NO (-50.4%)	NO
3 Bed Suite 4 (L)_Hall	N/A	N/A
3 Bed Suite 5 (L)_Bedroom	NO (-48.3%)	NO
3 Bed Suite 5 (L)_Hall	N/A	N/A
3 Bed Suite 5 (U)_Bedroom	NO (-74.5%)	NO
3 Bed Suite 5 (U)_Bedroom	NO (-84.7%)	NO
3 Bed Suite 5 (U)_Living/Kitchen	NO (-51.9%)	NO
Acc Suite 13	NO (-7.4%)	NO
Acc Suite 14	NO (-3.5%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Junior Suite 7	NO (-75.8%)	NO
Junior Suite 8	N/A	N/A
Junior Suite 8	N/A	N/A
Junior Suite 8	NO (-80%)	NO
Junior Suite 9	NO (-81.1%)	NO
Junior Suite 10	NO (-83.5%)	NO
Junior Suite 13	NO (-24.2%)	NO
Junior Suite 13	NO (-7.7%)	NO
Junior Suite 13	NO (-27.8%)	NO
Junior Suite 13	NO (-12.6%)	NO
Junior Suite 14	NO (-7.3%)	NO
Junior Suite 14	NO (-18.4%)	NO
Junior Suite 14	NO (-21.5%)	NO
Junior Suite 14	NO (-12.1%)	NO
Junior Suite 15	NO (-10.9%)	NO
Junior Suite 15	NO (-18.1%)	NO
Junior Suite 15	NO (-4.4%)	NO
Junior Suite 15	NO (-4.8%)	NO
Junior Suite 15	NO (-21.4%)	NO
Junior Suite 16	NO (-2.2%)	NO
Junior Suite 16	NO (-6.6%)	NO
Junior Suite 16	NO (-13.4%)	NO
Junior Suite 16	NO (-24.3%)	NO
Junior Suite 16	NO (-20.4%)	NO
Junior Suite 17	NO (-4.9%)	NO
Junior Suite 17	NO (-12.1%)	NO
Junior Suite 17	NO (-8%)	NO
Junior Suite 17	NO (-20.2%)	NO
Junior Suite 17	NO (-26.4%)	NO
Junior Suite 18	NO (-27.5%)	NO
Junior Suite 18	NO (-11%)	NO
Junior Suite 18	NO (-17.1%)	NO
Junior Suite 18	NO (-34.2%)	NO
Junior Suite 18	NO (-9.5%)	NO
Junior Suite 19	NO (-21.3%)	NO
Junior Suite 19	NO (-30.7%)	NO
Junior Suite 19	NO (-8.3%)	NO
Junior Suite 19	NO (-13.1%)	NO
Junior Suite 19	NO (-39%)	NO
Junior Suite 20	NO (-42.2%)	NO
Junior Suite 20	NO (-21.4%)	NO
Junior Suite 20	NO (-12.8%)	NO
Junior Suite 20	NO (-21.9%)	NO
Junior Suite 20	NO (-33%)	NO
Junior Suite 21	NO (-35%)	NO
Junior Suite 21	NO (-15.4%)	NO
Junior Suite 21	NO (-4.9%)	NO
Junior Suite 21	NO (-46.1%)	NO

Regulation 25A: Consideration of high efficiency 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
Floor area [m ²]	3303.5	3303.5
External area [m ²]	2675.4	2675.4
Weather	MAN	MAN
Infiltration [m ³ /hm ² @ 50Pa]	3	3
Average conductance [W/K]	1231.26	0
Average U-value [W/m ² K]	0.46	0
Alpha value* [%]	25.58	10

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

Building Use

% Area Building Type

Retail/Financial and Professional Services
 Restaurants and Cafes/Drinking Establishments/Takeaways
 Offices and Workshop Businesses
 General Industrial and Special Industrial Groups
 Storage or Distribution

100 Hotels

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

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	27.4	18.65
Cooling	0.24	0
Auxiliary	2.24	5.11
Lighting	7.29	6.78
Hot water	52.54	63.66
Equipment*	12.55	12.55
TOTAL **	89.71	94.21

* 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	2.49
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	<i>0</i>	<i>2.49</i>

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	119.07	117.79
Primary energy [kWh _{PE} /m ²]	133.94	136.33
Total emissions [kg/m ²]	12.56	12.7

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] Variable refrigerant flow, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	85.8	6.1	6.1	0.4	4.2	3.93	3.82	3.98	5.46
	Notional	86.7	0.1	8.7	0	8.7	2.78	4.63	----	----
[ST] Other local room heater - unfanned, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	184.5	0	64.1	0	0	0.8	0	1	0
	Notional	188.4	0	37.1	0	0	1.41	0	----	----
[ST] No Heating or Cooling										
	Actual	0	0	0	0	0	0	0	0	0
	Notional	0	0	0	0	0	0	0	----	----

Key to terms

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

Appendix A-6a

BREEAM Pre-Assessment: BREEAM UK RFO 2014 – Hotel



INVESTORS
IN PEOPLE

Joyce

17 Chorlton Street, Manchester M1 3HY

P01
ISSUE

BREEAM Pre-Assessment

Hotel – Refurbishment & Fit-Out

CONSOLUX

Consolux M&E Consulting Ltd
(Liverpool)
7th Floor, Cotton House,
Cotton Exchange Building, Old Hall Street
Liverpool, L3 9LQ
Tel: +44(0)2077343030
Email: liverpool@consolux.co.uk

CSX Manchester Ltd
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Consolux M&E Consulting Ltd
(London)
35 Piccadilly
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BREEAM UK Refurbishment & Fit-out 2014

Boulton House - Existing

Pre-assessment

Joyce

30 May 2025

Assessment report



PwC's BREEAM Outstanding rated One Embankment Place in London. Image: Hofton + Crow.

Assessment references

Registration number:	Boulton House - Existing	Date created:	20/5/2025
Created by:			

Site details

Site name:	Joyce
Address:	17 Chorlton Street
Town:	Manchester
County:	Greater Manchester
Postcode:	M1 3HY
Country:	United Kingdom

Certificate details

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

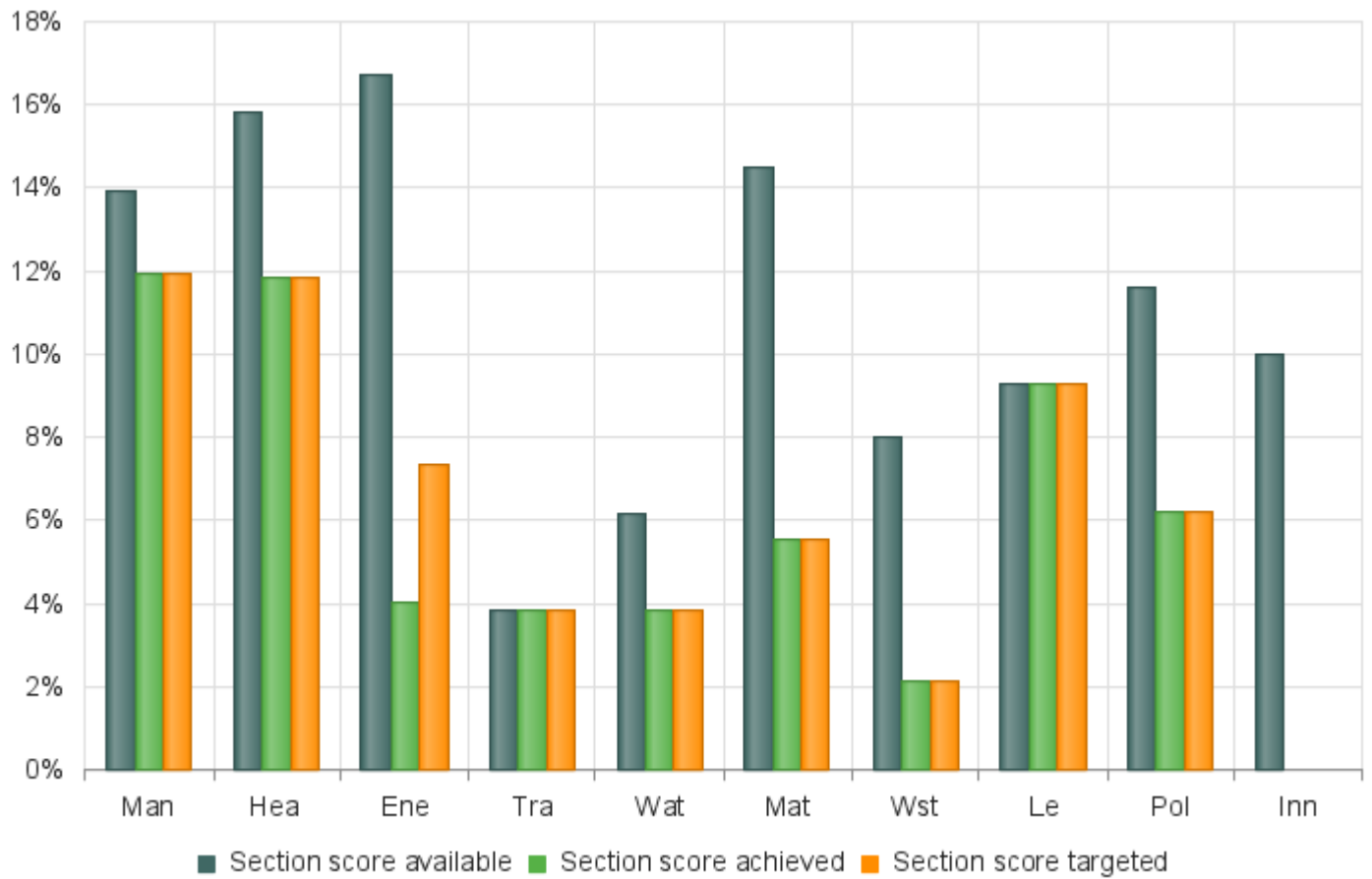
Any other names to appear on the certificate are listed below:

Name	Label
------	-------

BREEAM Rating

	Credits available	Credits achieved	Credits targeted	% Credits achieved	Weighting	Category score	Target score
Man	21.0	18.0	18.0	85.71%	13.94%	11.95%	11.95%
Hea	20.0	15.0	15.0	75.00%	15.84%	11.88%	11.88%
Ene	25.0	6.0	11.0	24.00%	16.72%	4.01%	7.35%
Tra	5.0	5.0	5.0	100.00%	3.87%	3.87%	3.87%
Wat	8.0	5.0	5.0	62.50%	6.20%	3.87%	3.87%
Mat	13.0	5.0	5.0	38.46%	14.52%	5.58%	5.58%
Wst	11.0	3.0	3.0	27.27%	7.99%	2.17%	2.17%
Le	4.0	4.0	4.0	100.00%	9.29%	9.29%	9.29%
Pol	13.0	7.0	7.0	53.85%	11.62%	6.25%	6.25%
Inn	10.0	0.0	0.0	0.00%	10.00%	0.00%	0.00%
Total	130.0	68.0	73.0	52.31%	-	58.90%	62.25%
Rating	-	-	-	-	-	 Pass	Very Good

Performance by environmental category



Issue scores

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

Management

Man 01 Project Brief and design

4 / 4

Man 02 Life cycle cost and service life planning

4 / 4

Man 03 Responsible construction practices

4 / 6 X: 0 / 1

Man 04 Commissioning and handover

4 / 4

Man 05 Aftercare

2 / 3 X: 0 / 1

Health and Wellbeing

Hea 01 Visual comfort

4 / 7 X: 0 / 1

Hea 02 Indoor air quality

3 / 5 X: 0 / 2

Hea 03 Safe containment in laboratories

N/A

Hea 04 Thermal comfort

3 / 3

Hea 05 Acoustic performance

4 / 4

Hea 06 Safety and security

1 / 1

Energy

Ene 01 Reduction of energy use and carbon emissions

0 / 15 X: 0 / 5

Ene 02 Energy monitoring

1 / 1

Ene 03 External lighting

1 / 1

Ene 05 Energy efficient cold storage

N/A

Ene 07 Energy efficient laboratory systems

N/A

Ene 09 Drying space

N/A

Ene 04 Low carbon design

2 / 3

Ene 06 Energy efficient transportation systems

0 / 3

Ene 08 Energy efficient equipment

2 / 2

Transport

Tra 01 Sustainable transport solutions

3 / 3

Tra 03 Cyclist facilities

N/A

Tra 05 Travel plan

1 / 1

Tra 02 Proximity to Amenities

1 / 1

Tra 04 Maximum car parking capacity

N/A

Water

Wat 01 Water consumption

3 / 5 X: 0 / 1

Wat 02 Water monitoring

1 / 1

Wat 03 Water leak detection
and prevention

1 / 2

Wat 04 Water efficient
equipment

N/A

Materials

Mat 01 Life cycle impacts

3 / 6 X: 0 / 1

Mat 03 Responsible sourcing

1 / 4 X: 0 / 1

Mat 04 Insulation

0 / 1

Mat 05 Designing for
durability and resilience

1 / 1

Mat 06 Material efficiency

0 / 1

Waste

Wst 01 Construction waste
management

0 / 7 X: 0 / 1

Wst 02 Recycled aggregates

0 / 1 X: 0 / 1

Wst 03 Operational waste

1 / 1

Wst 04 Speculative finishes

N/A

Wst 05 Adaptation to climate
change

1 / 1 X: 0 / 1

Wst 06 Functional
adaptability

1 / 1

Land use and ecology

Le 02 Protection of
ecological features

1 / 1

Le 04 Enhancing site
ecology

1 / 1

Le 05 Long term impact on
biodiversity

2 / 2

Pollution

Pol 01 Impact of refrigerants

1 / 3

Pol 02 Nox Emissions

1 / 3

Pol 03 Flood risk
management and reducing
surface water run-off

3 / 5 X: 0 / 1

Pol 04 Reduction of Night
Time Light Pollution

1 / 1

Pol 05 Noise attenuation

1 / 1

Innovation

Inn 01 Innovation

0 / 0 X: 0 / 10

Initial details

17 Chorlton Street

Part 1 : Fabric and structure : Yes

Part 2 : Core services : Yes

Part 3 : Local services : Yes

Part 4 : Interior design : Yes

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

Technical manual issue number : Issue 2.0

Project type : Major, whole building refurbishment

Client : Developer

Assessment stage : Design

Building type (main description) : Other: Residential Institution

Building type (sub-group) : Residential Institution - Hotel

Building floor area (NIFA) Net internal floor area : 7099

Building floor area (GIFA) Gross internal floor area : 8411

Refurbishment/Fit-out assessment area : 8411

What range does the projects value fall into? : < £1 million

New extension assessment area (if applicable within the scope of the assessment) : 0

Historic building (listed building or building in a conservation area) : No

Is commercial and/or industrial scale refrigeration or storage specified/present : No

Are building user transportation systems (lifts and/or escalators) specified/present? : Yes, newly specified transportation systems

For industrial buildings, are there office areas? : No

Are there systems that significantly contribute towards unregulated energy demands? : Yes

Where the scope of the refurbishment covers tenancy areas only, are sanitary fittings present in the tenanted areas? : Yes

Does the building have or mitigate any unregulated water demand? e.g. irrigation or soft-landscaped areas requiring no irrigation, car washing, other significant process related : No

Are there new or existing landscaping areas within the refurbishment or fit-out zone and within developer control? : Yes - existing and new, or existing only

Is there any local heating or hot water present or within scope of refurbishment or fit-out works? : Yes

Are there any external areas within the refurbishment or fit-out zone and within developer control that can feasibly be enhanced in line with LE 04 : Yes

Is there any local cooling present or within scope of refurbishment or fit-out works? : Yes

Is any externally mounted plant present or specified? : Yes

Is this a speculative refurbishment? : No

Is external lighting within scope of the refurbishment or fit-out zone? : Yes

Is this a simple building? : No

If undertaking a Part 4 assessment, is there any equipment specified that requires commissioning (see Man04 CN13) : Yes

Is local heating or hot water present or within scope of refurbishment or fit out works for operational areas? : Yes

Is any new insulation specified? : Yes

Is Wat01 within the scope of the assessment in accordance with Table 42? : Yes

Are high grade aggregates to be used in the refurbishment scheme? : Yes

Could any issues within the scope of the assessment have an impact on flood management, surface runoff, or the pollution of watercourses? : Yes

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

Laboratory containment area : No laboratories present

Category assessment

Management (Man)

Man 01 Project Brief and design

Assessment criteria

Stakeholder consultation (project delivery) :	Yes
Stakeholder consultation (third party) :	Yes
Sustainability champion (design) :	Yes
Sustainability champion (monitoring progress) :	Yes

Credit scoring

Credits scored :	4
------------------	---

Credits awarded : 4

Man 02 Life cycle cost and service life planning

Assessment criteria

Elemental life cycle cost (LCC) :	Yes
Component level LCC plan :	Yes
Capital cost reporting :	Yes
Capital cost of the project :	1

Credit scoring

Credits scored :	4
------------------	---

Credits awarded : 4

Man 03 Responsible construction practices

Assessment criteria

Is all timber used in the project 'legally harvested and traded timber'? :	Yes
Environmental management :	Yes

Construction stage sustainability champion :	Yes
Considerate construction :	1
Has the project achieve the minimum standard for an Excellent or Outstanding rating? :	No
Monitoring of refurbishment or fit-out site impacts :	Yes
Utility consumption :	Yes
Transport of construction materials and waste :	Yes
Exemplary level criteria - considerate construction :	

Key Performance Indicators: Construction site energy use

Energy consumption (total) - site processes :

Energy consumption (intensity) - site processes :

Key Performance Indicators: Construction site greenhouse gas emissions

Process greenhouse gas emissions (total) - site processes :

Greenhouse gas emissions (intensity) - site processes :

Key Performance Indicators: Construction site use of freshwater resources

Use of freshwater resource (total) - site processes :

Use of freshwater resource (intensity) - site processes :

Credit scoring

Credits scored : 4

Exemplary credits scored : 0

Credits awarded : 4

Man 04 Commissioning and handover

Assessment criteria

Commissioning schedule and responsibilities :	Yes
Commissioning building services :	Yes
Commissioning building fabric :	Yes

Handover : Yes

Has a Building User Guide been developed prior to handover? : Yes

Credit scoring

Credits scored : 4

Credits awarded : 4

Man 05 Aftercare

Assessment criteria

Aftercare support : Yes

Seasonal commissioning : Yes

Post occupancy evaluation : No

Exemplary level criteria :

Credit scoring

Credits scored : 2

Exemplary credits scored : 0

Credits awarded : 2

Health and Wellbeing (Hea)

Hea 01 Visual comfort

Assessment criteria

Glare control :	Yes
Daylighting :	No
View out :	Yes
Internal and external lighting levels, zoning and controls :	Yes
Exemplary level daylighting :	No

Credit scoring

Credits scored :	4
Exemplary credits scored :	0

Credits awarded : 4

Hea 02 Indoor air quality

Assessment criteria

Min. sources of air pollution: indoor air quality plan :	Yes
Ventilation :	Yes
VOCs (products) :	Yes
VOCs (post construction) :	No
Adaptability - potential for natural ventilation :	No
Exemplary level VOCs (products) :	

Key performance indicators: Indoor air quality

Concentration levels of formaldehyde :	
Total volatile organic compound (TVOC) concentration :	

Credit scoring

Credits scored :	3
------------------	---

Exemplary credits scored :	0
----------------------------	---

Credits awarded : 3

Hea 03 Safe containment in laboratories

Assessment criteria - N/A

Hea 04 Thermal comfort

Assessment criteria

Thermal modelling :	Yes
---------------------	-----

Criterion 4 - Impact of fit-out on thermal comfort :	Yes
--	-----

Adaptability - for a projected climate change scenario :	Yes
--	-----

Thermal zoning and control :	Yes
------------------------------	-----

Key Performance Indicators: Thermal comfort

Predicted Mean Vote (PMV) :	
-----------------------------	--

Predicted Percentage Dissatisfied (PPD) :	
---	--

Key Performance Indicators: Adaptability

Predicted Mean Vote (PMV) :	
-----------------------------	--

Predicted Percentage Dissatisfied (PPD) :	
---	--

Credit scoring

Credits scored :	3
------------------	---

Exemplary credits scored :	0
----------------------------	---

Credits awarded : 3

Hea 05 Acoustic performance

Assessment criteria

Acoustic performance standards and testing requirements complied with : Yes

Credit scoring

Credits scored : 4

Credits awarded : 4

Hea 06 Safety and security

Assessment criteria

Security of site and building : Yes

Credit scoring

Credits scored : 1

Credits awarded : 1

Energy (Ene)

Ene 01 Reduction of energy use and carbon emissions

Assessment option

Which option is being followed :

Option 1: Whole building energy model

Building Score

Country :

England

Upload existing building '_epc.inp' file :

Upload proposed building '_epc.inp' file :

Credits :

Actual (existing) building energy demand (DemEx) :

Reference building energy demand (DemRef) :

Actual (proposed) building energy demand (DemProp) :

Actual (existing) building primary energy consumption (PEEx) :

Reference building primary energy consumption (PERef) :

Actual (proposed) building primary energy consumption (PEProp) :

Actual (existing) building CO2 emissions (BEREx) :

Reference building CO2 emissions (SER) :

Actual (proposed) building CO2 emissions (BERProp) :

Building energy demand individual parameter EPR (Energy performance Ratio) :

Primary energy consumption individual parameter EPR (Energy performance Ratio) :

Building CO2 emissions individual parameter EPR (Energy performance Ratio) :

EPRNDR (Energy Performance Ratio Non Domestic Refurbishment) :

Exemplary Assessment Criteria

Zero regulated carbon :

Equivalent % of the building's 'regulated' energy consumption generated by carbon neutral sources and used to meet energy demand from 'unregulated' building systems or processes? :

Is the building designed to be carbon negative? :

If the building is defined as 'carbon negative' what is the total (modelled) renewable/carbon neutral energy generated and exported? :

Credit scoring

Exemplary credits scored : 0

Credits awarded : 0

Ene 02 Energy monitoring

Assessment criteria

Sub-metering of major energy consuming systems : Yes

Credit scoring

Exemplary credits scored : 0

Credits scored : 1

Credits awarded : 1

Ene 03 External lighting

Assessment criteria

External lighting specification :

Credit scoring

Credits scored : 1

Exemplary credits scored : 0

Credits awarded : 1

Ene 04 Low carbon design

Assessment criteria

Passive design analysis :

Free cooling :

Low and zero carbon technologies :

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

Credit scoring

Credits scored : 2

Exemplary credits scored : 0

Credits awarded : 2

Ene 05 Energy efficient cold storage

Assessment criteria - N/A

Ene 06 Energy efficient transportation systems

Assessment criteria

Energy consumption : Yes

Energy efficient features : Yes

Credit scoring

Credits scored : 0

Exemplary credits scored : 0

Credits awarded : 0

Ene 07 Energy efficient laboratory systems

Assessment criteria - N/A

Ene 08 Energy efficient equipment

Assessment criteria

Ref A Small power and plug in equipment present? :

Ref B Swimming pool present? :

Ref C Communal laundry present? :

Ref D Data centre present? :

Ref E IT-intensive operation areas present? :

Ref F Residential areas present? :

Ref G Healthcare present? :

Ref H Kitchen and catering facilities present? :

Ref I Display Lighting present? :

Ref J Overhead warm air heaters present? :

Significant majority contributors BREEAM compliant :

Credit scoring

Credits scored : 2

Exemplary credits scored : 0

Credits awarded : 2

Ene 09 Drying space

Assessment criteria - N/A

Transport (Tra)

Tra 01 Sustainable transport solutions

Assessment criteria

Building type category (for purposes of Tra01 assessment :	Multi-residential
Public transport accessibility index :	
Ref A building dedicated bus services :	
Ref B enhanced cycle storage space provision :	
Ref C enhanced cyclist facilities :	
Ref D electric vehicle charging points :	
Ref E car sharing spaces :	
Ref F digital information points :	
Ref G onsite facilities to reduce the need to travel :	
Ref H improvement actions to enhance Accessibility Index :	

Credit scoring

Credits scored :	3
Exemplary credits scored :	0

Credits awarded : 3

Tra 02 Proximity to Amenities

Assessment criteria

Close proximity and accessibility to applicable amenities :

Credit scoring

Credits scored :	1
Exemplary credits scored :	0

Credits awarded : 1

Tra 03 Cyclist facilities

Assessment criteria

Building type category (for purpose of Tra03 issue assessment) :

Number of compliant cycle storage spaces provided :

Showers :

Changing facilities :

Lockers :

Drying space :

Cyclist facilities compliant :

Cycle storage spaces compliant :

Credit scoring

Credits scored : 0

Exemplary credits scored : 0

Credits awarded : 0

Tra 04 Maximum car parking capacity

Assessment criteria - N/A

Tra 05 Travel plan

Assessment criteria

Travel plan based on site specific travel survey/assessment :

Credit scoring

Credits scored : 1

Exemplary credits scored : 0

Credits awarded : 1

Water (Wat)

Wat 01 Water consumption

Standard approach data

Water consumption :

Water demand met via greywater/rainwater sources :

Total net water consumption :

Improvement on baseline performance :

Key performance indicator

Total net water consumption :

Default building occupancy :

Alternative approach data

Overall level achieved :

Percentage of demand met from grey or rainwater :

Credit scoring

Credits scored :	3
------------------	---

Exemplary credits scored :	0
----------------------------	---

Credits awarded : 3

Wat 02 Water monitoring

Assessment criteria

Water meter on the mains water supply to the building(s) :

Metering/monitoring equipment on supply to plant/building areas :

Pulsed output or other open protocol communication output :

Existing BMS connection :

Credit scoring

Credits scored :	1
------------------	---

Exemplary credits scored :	0
----------------------------	---

Credits awarded : 1

Wat 03 Water leak detection and prevention

Assessment criteria

Leak detection on building's mains water supply :

Flow control device to each sanitary area/facility :

Credit scoring

Credits scored :	1
------------------	---

Exemplary credits scored :	0
----------------------------	---

Credits awarded : 1

Wat 04 Water efficient equipment

Assessment criteria - N/A

Materials (Mat)

Mat 01 Life cycle impacts

Assessment criteria

Exemplary level compliant :

Options : Option 1

Option 1: Total Mat 01 points achieved : 3

Credit scoring

Credits scored : 3

Exemplary credits scored : 0

Credits awarded : 3

Mat 03 Responsible sourcing

Assessment criteria

All timber and timber based products are 'Legally harvested and traded timber' : Yes

Is there a documented sustainable procurement plan : Yes

Have at least three material types been responsibly sourced (criterion 1) :

% of available RSM points achieved :

Credit scoring

Credits scored : 1

Exemplary credits scored : 0

Credits awarded : 1

Mat 04 Insulation

Assessment criteria

Embodied impact - insulation index :

Credit scoring

Credits scored : 0

Exemplary credits scored : 0

Credits awarded : 0**Mat 05 Designing for durability and resilience****Assessment criteria**

Protecting vulnerable parts of the building from damage :

Protecting exposed parts of the building from material degradation :

Credit scoring

Credits scored : 1

Exemplary credits scored : 0

Credits awarded : 1**Mat 06 Material efficiency****Assessment criteria**

Material optimisation measures investigated and implemented at relevant stages :

Credit scoring

Credits scored : 0

Exemplary credits scored : 0

Credits awarded : 0

Waste (Wst)

Wst 01 Construction waste management

Assessment criteria

Pre-refurbishment audit :

Resource management plan :

% of points achieved for direct re-used or recycled (table 64) :

Key performance indicator - construction waste

Measure/units for the data being reported :

Non-hazardous construction waste (excluding strip-out/demolition/excavation) :

Exemplary level compliant - Resource efficiency and diversion of waste from landfill :

Non-hazardous non-demolition construction waste diverted from landfill :

Total non-hazardous demolition waste generated :

Non-hazardous demolition waste diverted from landfill :

Material for reuse :

Material for recycling :

Material for energy recovery :

Hazardous waste to disposal :

Credit scoring

Credits scored :	0
------------------	---

Exemplary credits scored :	0
----------------------------	---

Credits awarded : 0

Wst 02 Recycled aggregates

Assessment criteria

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

% of high grade aggregate that is recycled/secondary aggregate - by application

Structural frame :

Bitumen/hydraulically bound base, binder and surface courses :

Building foundations :

Concrete road surfaces :

Pipe bedding :

Granular fill and capping :

Exemplary level compliant :

Credit scoring

Credits scored : 0

Exemplary credits scored : 0

Credits awarded : 0

Wst 03 Operational waste**Assessment criteria**

Segregation and storage of operational recyclable waste volumes :

Static waste compactor(s) or baler(s) :

Vessel(s) for composting suitable organic waste :

Credit scoring

Credits scored : 1

Exemplary credits scored : 0

Credits awarded : 1

Wst 04 Speculative finishes

Assessment criteria - N/A

Wst 05 Adaptation to climate change

Assessment criteria

Adaptation to climate change - structural and fabric resilience :

Exemplary level - responding to adaptation to climate change :

Credit scoring

Credits scored :	1
------------------	---

Exemplary credits scored :	0
----------------------------	---

Credits awarded : 1

Wst 06 Functional adaptability

Assessment criteria

Functional adaptability :

Credit scoring

Credits scored :	1
------------------	---

Exemplary credits scored :	0
----------------------------	---

Credits awarded : 1

Land use and ecology (Le)

Le 02 Protection of ecological features

Assessment criteria

Protection of ecological features : Yes

Credit scoring

Credits scored : 1

Credits awarded : 1

Le 04 Enhancing site ecology

Assessment criteria

Suitably qualified ecologist appointment (SQE) : Yes

Ecologist's report and recommendations : Yes

Credit scoring

Credits scored : 1

Credits awarded : 1

Le 05 Long term impact on biodiversity

Assessment criteria

Suitably qualified ecologist appointment (SQE) : Yes

Landscape and habitat management plan : Yes

Number of applicable measures :

Number of applicable measures implemented :

Credit scoring

Credits scored : 2

Credits awarded : 2

Pollution (Pol)

Pol 01 Impact of refrigerants

Assessment criteria

Does the building require the use of refrigerants within its installed plant/systems? :

BS EN 378:2008 and IoR Ammonia Refrigeration System CoP (where applicable)? :

Global Warming Potential of the specified refrigerant(s) 10 or less? :

Total Direct Effect Life Cycle CO₂eq. Emissions from the system :

Cooling/Heating capacity of the system :

BREEAM compliant refrigerant leak detection and containment :

Credit scoring

Credits scored : 1

Exemplary credits scored : 0

Credits awarded : 1

Pol 02 Nox Emissions

Assessment criteria

Nox emission level - space heating :

Nox emission level - cooling :

Nox emission level - water heating :

Does this building meet BREEAMs compliance note relating to the definition of a highly insulated building? :

Energy consumption: heating and hot water :

Credit scoring

Credits scored : 1

Exemplary credits scored : 0

Credits awarded : 1

Pol 03 Flood risk management and reducing surface water run-off

Assessment criteria

Annual probability of flooding :

Avoidance of flooding :

Flood resilience of resistance strategy :

Neutral impact on surface water :

Reducing run-off :

Minimising watercourse pollution :

Exemplary level compliant :

Credit scoring

Credits scored :	3
------------------	---

Exemplary credits scored :	0
----------------------------	---

Credits awarded : 3

Pol 04 Reduction of Night Time Light Pollution

Assessment criteria

External lighting specification :

Credit scoring

Credits scored :	1
------------------	---

Exemplary credits scored :	0
----------------------------	---

Credits awarded : 1

Pol 05 Noise attenuation

Assessment criteria

Noise-sensitive areas/buildings within 800m radius of the development :

Noise impact assessment and, if applicable, noise attenuation measures :

Credit scoring

Credits scored : 1

Exemplary credits scored : 0

Credits awarded : 1

Innovation (Inn)

Inn 01 Innovation

Assessment criteria

Number of 'approved' innovation credits achieved? :	0
---	---

Credit scoring

Credits scored :	0
------------------	---

Exemplary credits scored :	0
----------------------------	---

Credits awarded : 0

Appendix A-6b

BREEAM Pre-Assessment: BREEAM UK NC v6.1 – Hotel



INVESTORS
IN PEOPLE

Joyce

17 Chorlton Street, Manchester M1 3HY

P01
ISSUE

BREEAM Pre-Assessment

Hotel – New Construction

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BREEAM UK New Construction Version 6.1

Boulton House - NC Hotel

Pre-assessment

Joyce

30 May 2025

Assessment report



Marks & Spencer's BREEAM Excellent Cheshire Oaks store (Image: Marks & Spencer)

Assessment references

Registration number:	Boulton House - NC Hotel	Date created:	22/5/2025
Created by:			

Site details

Site name:	Joyce
Address:	17 Chorlton Street
Town:	Manchester
County:	Greater Manchester
Postcode:	M1 3HY
Country:	United Kingdom

Certificate details

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

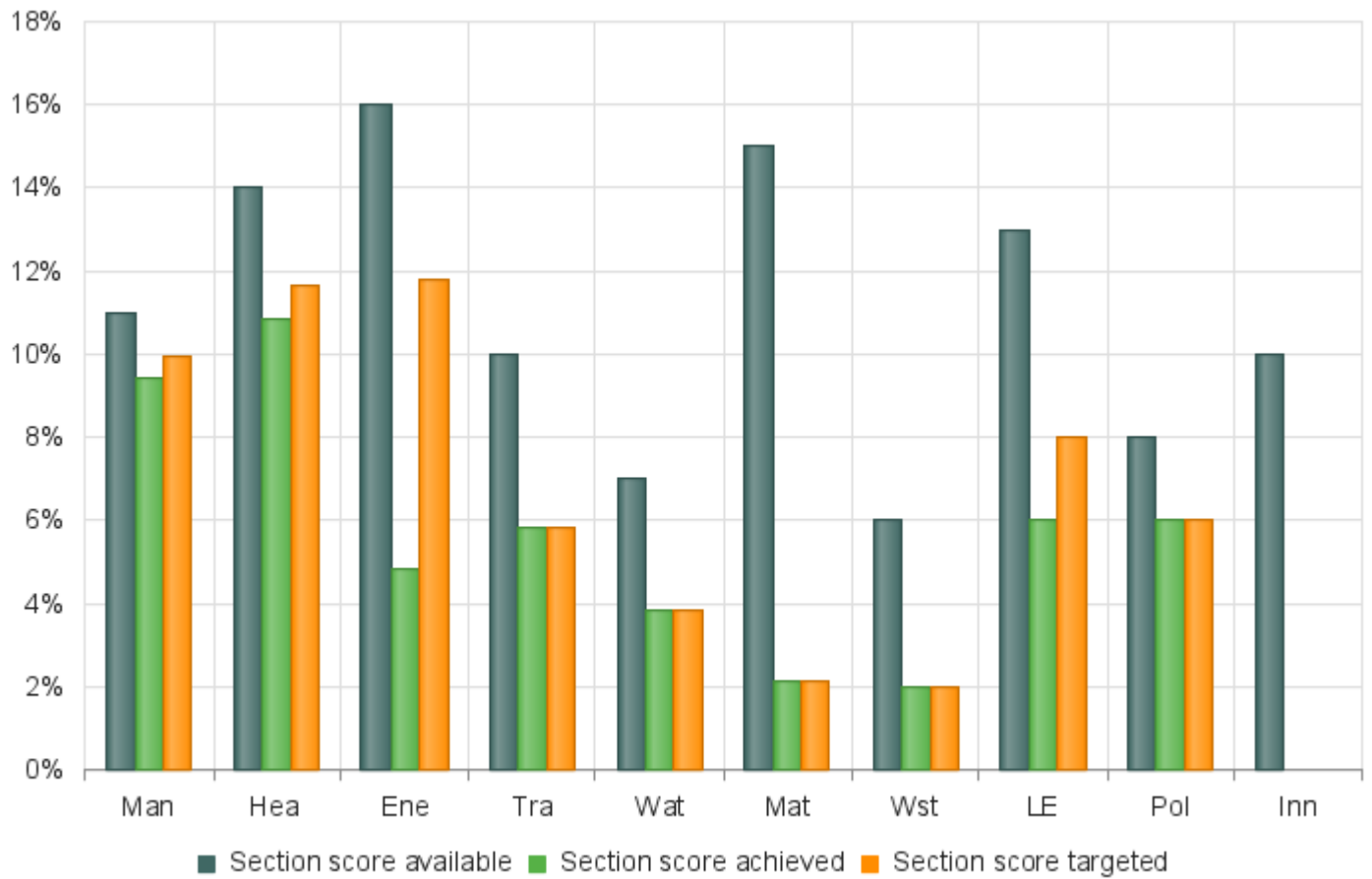
Any other names to appear on the certificate are listed below:

Name	Label
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BREEAM Rating

	Credits available	Credits achieved	Credits targeted	% Credits achieved	Weighting	Category score	Target score
Man	21.0	18.0	19.0	85.71%	11.00%	9.42%	9.95%
Hea	18.0	14.0	15.0	77.78%	14.00%	10.88%	11.66%
Ene	23.0	7.0	17.0	30.43%	16.00%	4.86%	11.82%
Tra	12.0	7.0	7.0	58.33%	10.00%	5.83%	5.83%
Wat	9.0	5.0	5.0	55.56%	7.00%	3.88%	3.88%
Mat	14.0	2.0	2.0	14.29%	15.00%	2.14%	2.14%
Wst	9.0	3.0	3.0	33.33%	6.00%	2.00%	2.00%
LE	13.0	6.0	8.0	46.15%	13.00%	6.00%	8.00%
Pol	12.0	9.0	9.0	75.00%	8.00%	6.00%	6.00%
Inn	10.0	0.0	0.0	0.00%	10.00%	0.00%	0.00%
Total	141.0	71.0	85.0	50.35%	-	51.05%	61.31%
Rating	-	-	-	-	-	 Good	Very Good

Performance by environmental category



Issue scores

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

Management

Man 01 Project Brief and design

4 / 4

Man 02 Life cycle cost and service life planning

4 / 4

Man 03 Responsible construction practices

5 / 6 X: 0 / 1

Man 04 Commissioning and handover

3 / 4

Man 05 Aftercare

2 / 3

Health and Wellbeing

Hea 01 Visual comfort

3 / 4 X: 0 / 2

Hea 02 Indoor air quality

2 / 4 X: 0 / 1

Hea 04 Thermal comfort

3 / 3

Hea 05 Acoustic performance

4 / 4

Hea 06 Security

1 / 1 X: 0 / 1

Hea 07 Safe and Healthy Surroundings

1 / 2

Energy

Ene 01 Reduction of energy use and carbon emissions

0 / 13 X: 0 / 2

Ene 02 Energy monitoring

2 / 2

Ene 03 External lighting

1 / 1

Ene 04 Low carbon design

2 / 3

Ene 05 Energy efficient cold storage

N/A

Ene 06 Energy efficient transportation systems

2 / 2

Ene 07 Energy efficient laboratory systems

N/A

Ene 08 Energy efficient equipment

0 / 2

Transport

Tra 01 Transport assessment and travel plan

2 / 2

Tra 02 Sustainable transport measures

5 / 10

Water

Wat 01 Water consumption

3 / 5 X: 0 / 1

Wat 02 Water monitoring

1 / 1

Wat 03 Water leak detection

1 / 2

Wat 04 Water efficient equipment

0 / 1

Materials

Mat 01 Life cycle impacts

0 / 7 X: 0 / 3

Mat 02 Environmental impacts from construction products

0 / 1

Mat 03 Responsible sourcing

1 / 4 X: 0 / 1

Mat 05 Designing for durability and resilience

1 / 1

Mat 06 Material efficiency

0 / 1

Waste

Wst 01 Construction waste management

0 / 4 X: 0 / 1

Wst 02 Use of recycled and sustainably sourced aggregates

0 / 1 X: 0 / 1

Wst 03 Operational waste

1 / 1

Wst 04 Speculative finishes (Offices only)

N/A

Wst 05 Adaptation to climate change

1 / 1 X: 0 / 1

Wst 06 Design for disassembly and adaptability

1 / 2

Land use and ecology

LE 01 Site selection

1 / 2

LE 02 Ecological risks and opportunities

2 / 2 X: 0 / 1

LE 03 Managing impacts on ecology

2 / 3

LE 04 Ecological change and enhancement

1 / 4 X: 0 / 1

LE 05 Long term ecology
management and
maintenance

0 / 2

Pollution

Pol 01 Impact of refrigerants

1 / 3

Pol 02 Local air quality

2 / 2

Pol 03 Flood and surface
water management

4 / 5

Pol 04 Reduction of Night
Time Light Pollution

1 / 1

Pol 05 Noise attenuation

1 / 1

Innovation

Inn 01 Innovation

0 / 0 X: 0 / 10

Initial details

17 Chorlton Street

Technical manual issue number : Issue 6.1.2

Project scope : Fully fitted

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

Assessment stage : Design (interim)

Building type (main description) : Residential institution - short term stay

Sub-group : Hotel, hostel, boarding and guest house

RIBA Plan of Work Stage : Stage 0: Strategic Definition

Building floor area (GIA) : 2754 m²

Building floor area (NIFA) : 2430 m²

Is the building designed to be untreated? : No

Building services - heating system type : Air system

Building services - cooling system type : Comfort cooling

Does the building have external areas within the boundary of the assessed development? :
Yes

Are commercial or industrial-sized refrigeration and storage systems specified? : No

Are building user lifts present? : Yes

Are building user escalators or moving walks present? : No

Are there any water demands present other than those assessed in Wat 01? : Yes

Are there statutory requirements, or other issues outside of the control of the project, that impact the ability to provide outdoor space : No

Are there any systems specified that contribute to the unregulated energy load? : Yes

Are the Post-occupancy evaluation credits targeted in Ene 01 issue? : Yes

Are laboratories present? : No

Are there fume cupboard(s) and/or other containment devices present? : No

Category assessment

Management (Man)

Man 01 Project Brief and design

To optimise final building design through recognising and encouraging an integrated design process and robust stakeholder engagement.

Assessment criteria

Prerequisite: Have the client and the contractor formally agreed performance targets? :	Yes
Stakeholder consultation (interested parties) :	Yes
Project delivery planning :	Yes
BREEAM Advisory Professional (Concept Design) :	Yes
BREEAM Advisory Professional (Developed Design) :	Yes

Credits awarded : 4

Man 02 Life cycle cost and service life planning

To promote the business case for sustainable buildings and to deliver whole life value by encouraging the use of life cycle costing to improve design, specification, through-life maintenance and operation.

Assessment criteria

Elemental LCC :	Yes
Component level LCC options appraisal :	Yes
Capital cost reporting :	Yes
Capital cost of the project :	1 Â£k/m ²

Credits awarded : 4

Man 03 Responsible construction practices

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

Assessment criteria

Prerequisite: Are all timber and timber-based products used during the construction process of the project 'legally harvested and traded timber'? :	Yes
Environmental management :	Yes
Prerequisite: Have the client and the contractor formally agreed performance targets? :	Yes
BREEAM Advisory Professional (site) :	Yes
Responsible construction management :	1
Monitoring of construction site impacts :	Yes
Utility consumption :	Yes
Transport of construction materials and waste :	Yes

Key Performance Indicators: Construction site energy use

Energy consumption (total) - site processes :	1 kWh
Energy consumption (intensity) - site processes :	1 kWh/project value

Key Performance Indicators: Construction site greenhouse gas emissions

Process greenhouse gas emissions (total) - site processes :	1 KgCO ₂ eq
Carbon dioxide emissions (intensity) - site processes :	1 KgCO ₂ eq/project value

Credits awarded : 5**Man 04 Commissioning and handover**

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

Assessment criteria

Commissioning testing schedule and responsibilities :	Yes
Commissioning - design and preparation :	Yes
Testing and inspecting building fabric :	No
Handover - have a technical and a non-technical building user guide been developed prior to handover? :	Yes
Handover - have a technical and a non-technical training schedule been	Yes

prepared around handover? :

Credits awarded : 3

Man 05 Aftercare

To ensure the building operates in accordance with the design intent and operational demands, through providing aftercare to the building owner and occupants during the first year of occupation.

Assessment criteria

Is this a speculative development? :	No
Commissioning - implementation :	Yes
Aftercare support :	Yes
Post occupancy evaluation :	No
The client or building occupier commits funds to pay for the POE in advance. :	Yes

Credits awarded : 2

Health and Wellbeing (Hea)

Hea 01 Visual comfort

To encourage best practice in visual performance and comfort by ensuring daylighting, artificial lighting and occupant controls are considered.

Assessment criteria

Control of glare from sunlight :	Yes
Daylighting (building type dependent) :	0
View Out :	Yes
Internal and external lighting levels, zoning and controls :	Yes

Exemplary level criteria- Internal and external lighting levels, zoning and control :

Credits awarded : 3

Hea 02 Indoor air quality

To encourage and support healthy internal environments with good indoor air quality.

Assessment criteria

Are you complying with the Ventilation criteria? :	Yes
Specify the type of ventilation :	Mixed mode
Are carbon dioxide (CO ₂) sensors installed in all relevant areas? :	Yes
Number of sensors :	1000
Net Internal Area of relevant areas covered by sensors :	10
Coverage of sensors :	100.0
Prerequisite: Indoor air quality (IAQ) plan :	Yes
Emissions from construction products :	1
Sampling of TVOC and formaldehyde levels in post-construction :	Yes
Formaldehyde levels (sampling to follow ISO 16000-2 or ISO 16000-3) over 30-minute average :	1 1¼g/m ³
TVOC levels (sampling to follow ISO 16000-5 and ISO 16000-6 or ISO	

16017-1) over 8-hour average :

Exemplary level criteria: Emissions from construction products : No

Key Performance Indicators

Formaldehyde concentration : $1.0 \hat{1}\frac{1}{4}\text{g/m}^3$

Total volatile organic compound (TVOC) concentration : $0.0 \hat{1}\frac{1}{4}\text{g/m}^3$

Credits awarded : 2

Hea 04 Thermal comfort

To ensure the building is capable of providing an appropriate level of thermal comfort.

Assessment criteria

Thermal modelling : Yes

Design for future thermal comfort : Yes

Thermal zoning and controls : Yes

Key Performance Indicators

PMV and PPD Indices : 100 PMV and PPD values

Credits awarded : 3

Hea 05 Acoustic performance

To ensure the building is capable of providing an appropriate acoustic environment to provide comfort for building users.

Assessment criteria

Sound insulation : 2

Indoor ambient noise level : Yes

Room acoustics : Yes

Credits awarded : 4

Hea 06 Security

To encourage the planning and implementation of effective measures that provide an appropriate level of security to the building and site.

Assessment criteria

Security of site and building : Yes

Exemplary level criteria :

Credits awarded : 1

Hea 07 Safe and Healthy Surroundings

To encourage the provision of safe access around the site and outdoor space that enhances the wellbeing of building users. .

Assessment criteria

Safe Access : No

Outside Space : Yes

Credits awarded : 1

Energy (Ene)

Ene 01 Reduction of energy use and carbon emissions

To minimise operational energy demand, primary energy consumption and CO₂ emissions.

Energy performance

Country :

Select how many files need to be uploaded. If more than one BRUKL output has been produced for a single assessment select the number required. :

Energy

performance - Building score

Heating and cooling demand energy performance ratio (EPRdem) :

Primary energy consumption performance ratio (EPRpe) :

CO₂-eq energy performance ratio (EPRco2-eq) :

Overall building energy performance ratio (EPRnc) :

Total BREEAM credits achieved : 0.0

Is the primary energy consumption the same or lower than that of the notional building? :

Is the primary energy consumption at least 10% lower than that of or higher than that of the notional building? :

Prediction of operational energy consumption

Has a passive design analysis been carried out? :

Post-occupancy evaluation (exemplary credits)

Has the maximum credit score been achieved in Ene 02 Energy monitoring? : Yes

Has the client or building occupier committed funds to pay for the post-occupancy evaluation? :

Has the energy model been submitted to BRE or retained by the building owner/named third party? :

Credits awarded : 0

Ene 02 Energy monitoring

To encourage the installation of energy sub-metering that facilitates the monitoring of operational energy consumption. To enable managers and consultants post-handover to compare actual performance with targets in order to inform ongoing management and help in

reducing the performance gap.

Assessment criteria

Sub-metering of end use categories : Yes

Sub-metering of high energy load and tenancy areas : Yes

Credits awarded : 2

Ene 03 External lighting

To reduce energy consumption through the specification of energy efficient light fittings for external areas of the development.

Assessment criteria

External lighting has been designed out? : Yes

Credits awarded : 1

Ene 04 Low carbon design

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

Assessment criteria

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

Passive design analysis : Yes

Free cooling :

Low and zero carbon technologies : Yes

KPI

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

Expected energy consumption and CO₂-eq emissions reduction resulting from passive design measures :

Energy consumption :

CO₂-eq emissions :

Expected energy consumption and CO₂-eq emissions reduction resulting from passive design measures as a percentage :

Energy consumption :

CO₂-eq emissions :

Expected reduction in CO₂-eq emissions resulting from the LZC technologies as a percentage :

Expected reduction in CO₂-eq emissions resulting from the LZC technologies :

: 2

Credits awarded

Ene 05 Energy efficient cold storage

To encourage the installation of energy efficient refrigeration systems, in order to reduce operational greenhouse gas emissions resulting from the system's energy use.

Assessment criteria - N/A

Ene 06 Energy efficient transportation systems

To encourage the specification of energy efficient transport systems within buildings.

Assessment criteria

Energy consumption : Yes

Energy efficient features - Lifts : Yes

Credits awarded : 2

Ene 07 Energy efficient laboratory systems

To encourage laboratory areas that are designed to minimise their operational energy consumption and associated CO₂ emission

Assessment criteria - N/A

Ene 08 Energy efficient equipment

To encourage installation of energy efficient equipment to ensure optimum performance and energy savings in operation

Assessment criteria

Swimming pool present? : Yes

Major impact? : Yes

Laundry facilities with commercial-sized appliances present? :

Data centre present? :

IT-intensive operating areas present? :

Domestic scale appliances (individual and communal facilities) present? :

Healthcare equipment present? :

Kitchen and catering facilities present? :

Other contributors :

Significant majority contributors BREEAM compliant :

Credits awarded : 0

Transport (Tra)

Tra 01 Transport assessment and travel plan

To reward awareness of existing local transport and identify improvements to make it more sustainable.

Assessment criteria

Travel plan : Yes

Credits awarded : 2

Tra 02 Sustainable transport measures

To maximise the potential for local public, private and active transport through provision of sustainable transport measures appropriate to the site.

Assessment criteria

Prerequisite : Yes

Location type (based on existing AI) : AI <25

Number of points achieved overall : 5

Credits awarded : 5

Water (Wat)

Wat 01 Water consumption

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

Assessment criteria

Please select the calculation procedure used :

Credits awarded : 3

Exemplary performance :

Key Performance Indicators

Credits awarded : 3

Wat 02 Water monitoring

To reduce the consumption of potable water in new buildings through the effective management and monitoring of water consumption.

Assessment criteria

Water meter on the mains water supply to each building : Yes

Sub-metering/monitoring equipment on supply to plant/building areas : Yes

Pulsed output or other open protocol communication output and BMS connection : Yes

The water monitoring strategy used enables the identification of all water consumption for sanitary uses as assessed under Wat 01 (L/person/day) :

Credits awarded : 1

Wat 03 Water leak detection

To reduce the consumption of potable water in new buildings through minimising wastage due to water leaks.

Assessment criteria

Leak detection system : Yes

Flow control devices : No

Credits awarded : 1

Wat 04 Water efficient equipment

To reduce water consumption for uses not assessed under Wat 01 by encouraging specification of water efficient equipment.

Assessment criteria

Water efficient consumption :

Credits awarded : 0

Materials (Mat)

Mat 01 Life cycle impacts

To reduce the burden on the environment from construction products by recognising and encouraging measures to optimise construction product consumption efficiency and the selection of products with a low environmental impact (including embodied carbon), over the life cycle of the building.

Assessment criteria

Total Mat 01 credits achieved - taken from the Mat 01/02 Results 0

Submission Tool :

Total Exemplary credits achieved - taken from the Mat 01/02 Results 0

Submission Tool :

Credits awarded : 0

Mat 02 Environmental impacts from construction products

To encourage availability of robust and comparable data on the impacts of construction products through the provision of EPD.

Assessment criteria

Mat 02 credit achieved - Taken from the Mat 01/02 Results Submission 0

Tool. :

Credits awarded : 0

Mat 03 Responsible sourcing

To facilitate the selection of products that involve lower levels of negative environmental, economic and social impact across their supply chain including extraction, processing and manufacture.

Assessment criteria

Prerequisite: All timber and timber based products are 'Legally harvested and traded timber' : Yes

Has the enabling sustainable procurement credit been achieved? : Yes

Mat 03 minimum scope level : Superstructure

Percentage of available for percentage of RSM points achieved :

Credits awarded : 1

Mat 05 Designing for durability and resilience

To reduce the need to repair and replace materials resulting from damage to exposed elements of the building and landscape.

Assessment criteria

Protecting vulnerable parts of the building from damage and exposed parts Yes of the building from material degradation :

Credits awarded : 1

Mat 06 Material efficiency

To avoid unnecessary materials use arising from over specification without compromising structural stability, durability or the service life of the building.

Assessment criteria

Material optimisation measures investigated and implemented at all relevant stages :

Credits awarded : 0

Waste (Wst)

Wst 01 Construction waste management

To reduce construction waste by encouraging reuse, recovery and best practice waste management practices to minimise waste going to landfill.

Assessment criteria

Is demolition occurring under the developer's ownership for the purpose of enabling the assessed development? : No

Compliant Resource Management Plan : No

Have waste materials been sorted into separate key waste groups? : No

Exemplary level criteria :

KPI

Measure/units for the data being reported :

Credits awarded : 0

Wst 02 Use of recycled and sustainably sourced aggregates

To encourage the use of more sustainably sourced aggregates, encourage reuse where appropriate and avoid waste and pollution arising from disposal of demolition and other forms of waste.

Assessment criteria

Is demolition occurring under the developer's ownership for the purpose of enabling the assessed development? : No

Projects Sustainable Aggregate points :

KPI

Total quantity of aggregate :

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

Credits awarded : 0

Wst 03 Operational waste

To encourage the recycling of operational waste through the provision of dedicated storage facilities and space.

Assessment criteria

Compliant recycling and non-recyclable waste storage allocated : Yes

Static waste compactor(s) or baler(s) : Yes

Vessel(s) for composting suitable organic waste and water outlet : Yes

:

The Wst 03 Minimum Standard is not applicable :

Credits awarded : 1

Wst 04 Speculative finishes (Offices only)

To minimise the wastage associated with the installation of floor and ceiling finishes in lettable areas in speculative buildings where tenants have not been involved in their selection.

Assessment criteria - N/A

Wst 05 Adaptation to climate change

To minimise the future need of carrying out works to adapt the building to take account of more extreme weather changes resulting from climate change and changing weather patterns.

Assessment criteria

Resilience of structure, fabric, building services and renewables installation Yes

:

Exemplary level - responding to climate change :

Credits awarded : 1

Wst 06 Design for disassembly and adaptability

To avoid unnecessary materials use, cost and disruption arising from the need for future adaptation works as a result of changing functional demands and to maximise the ability to reclaim and reuse materials at final demolition in line with the principles of a circular economy.

Assessment criteria

Design for disassembly and functional adaptability - recommendations : Yes

Disassembly and functional adaptability - implementation : No

Credits awarded : 1

Land use and ecology (LE)

LE 01 Site selection

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

Assessment criteria

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

Credits awarded : 1

LE 02 Ecological risks and opportunities

To determine the existing ecological value associated with the site and surrounding areas, and the risks and opportunities for ecological protection and enhancement.

Assessment criteria

Assessment route selection :	Comprehensive
Survey and Evaluation :	Yes
Prerequisite - Statutory obligations :	Yes
Determining ecological outcomes :	Yes
Exemplary level - Wider site sustainability :	

Credits awarded : 2

LE 03 Managing impacts on ecology

To avoid, or limit as far as possible, negative ecological impacts associated with the site and surrounding areas resulting from the project.

Assessment criteria

Assessment route :	Comprehensive
Prerequisite - Ecological risks and opportunities :	Yes

Credits awarded : 2

LE 04 Ecological change and enhancement

To enhance ecological value of the area associated with the site in support of local, regional and national priorities.

Assessment criteria

Assessment route :	Comprehensive
Prerequisite - Managing negative impacts on ecology :	Yes
Ecological enhancement (Comprehensive route only) :	Yes
Change and enhancement of ecology (Comprehensive route only) :	0

Credits awarded : 1

LE 05 Long term ecology management and maintenance

To secure ongoing monitoring, management and maintenance of the site and its habitats and ecological features, to ensure intended outcomes are realised for the long term.

Assessment criteria

Assessment route :	Comprehensive
At least one credit achieved under LE 04 for 'Change and Enhancement of Ecology' :	Yes
Prerequisite - Statutory obligations, planning and site implementation :	No

Credits awarded : 0

Pollution (Pol)

Pol 01 Impact of refrigerants

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

Leak detection

Are all the systems hermetically sealed? : No

BREEAM compliant automatic refrigerant leak detection system installed and able to manage the remaining refrigerant charge : No

Assessment criteria

Prerequisite: All systems (with electric compressors) comply with BS EN 378:2016 (parts 2 and 3) and (where applicable) Institute of Refrigeration Ammonia Refrigeration Systems code of practice? : Yes
 Total Direct Effect Life Cycle CO₂eq (DELCO). Emissions from the system : 101 kgCO₂eq/kW
 Refrigerant containing systems installed in the assessed building? : Yes

Global Warming Potential (GWP) of the specified refrigerant(s) 10 or less? No

Credits awarded : 1

Pol 02 Local air quality

To contribute to a reduction in local air pollution through the use of low emission combustion appliances in the building.

Assessment criteria

Is the project required to connect to a District Heating system, and it supplies all heating and hot water demands to the building? : No
 How many credits have been achieved? : 2

Credits awarded : 2

Pol 03 Flood and surface water management

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

Assessment criteria

Prerequisite: Has an appropriate consultant demonstrated and confirmed Yes

the development's compliance with all criteria? :

Has a site-specific flood risk assessment been conducted? : Yes

Annual probability of flooding : Low

Has the pre-requisite for the Surface Water Run-Off credits been achieved? : Yes

Has the Surface Water Run-Off - Rate credit been achieved? : Yes

Flooding of property will not occur in the event of local drainage system failure : Yes

Has the Surface Water Run-Off - Volume credit been achieved? : Yes

Minimising watercourse pollution : No

Credits awarded : 4

Pol 04 Reduction of Night Time Light Pollution

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

Assessment criteria

External lighting has been designed out? : Yes

Credits awarded : 1

Pol 05 Noise attenuation

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

Assessment criteria

Noise-sensitive areas/buildings within 800m radius of the development : Yes

Is the site compliant with all relevant criteria? : Yes

Credits awarded : 1

Innovation (Inn)

Inn 01 Innovation

To support innovation within the construction industry through the recognition of sustainability related benefits which are not rewarded by standard BREEAM issues.

Assessment criteria

Number of 'approved' innovation credits achieved? : 0

Credits awarded : 0

Appendix A-6c

BREEAM Pre-Assessment: BREEAM UK RFO 2014 – Retail



INVESTORS
IN PEOPLE

Joyce

17 Chorlton Street, Manchester M1 3HY

P01
ISSUE

BREEAM Pre-Assessment

Retail – Refurbishment & Fit-Out

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BREEAM UK Refurbishment & Fit-out 2014

Boulton House - Existing (Retail)

Pre-assessment

Joyce

30 May 2025

Assessment report



PwC's BREEAM Outstanding rated One Embankment Place in London. Image: Hofton + Crow.

Assessment references

Registration number:	Boulton House - Existing (Retail)	Date created:	22/5/2025
Created by:			

Site details

Site name:	Joyce
Address:	17 Chorlton Street
Town:	Manchester
County:	Greater Manchester
Postcode:	M1 3HY
Country:	United Kingdom

Certificate details

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

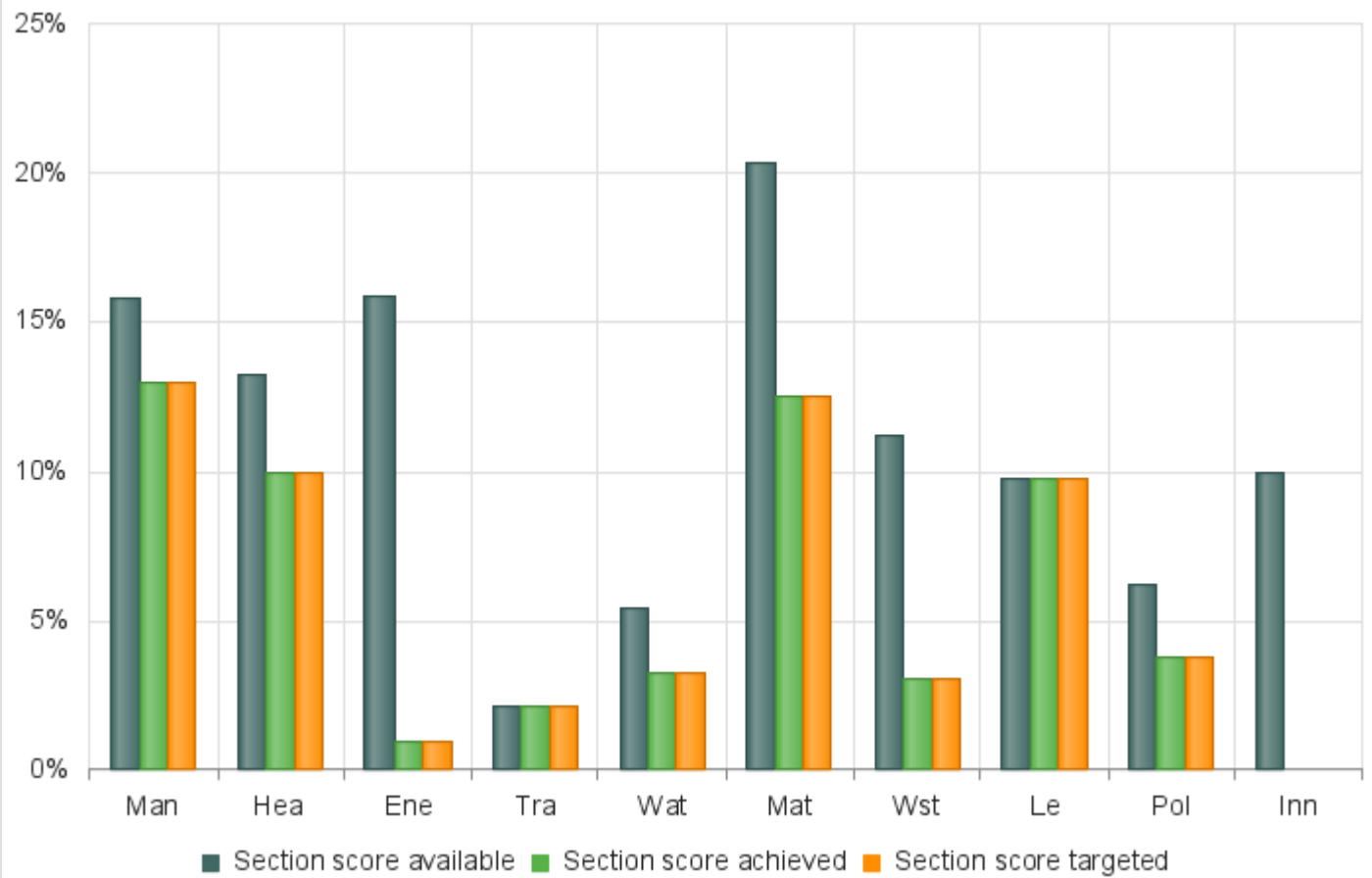
Any other names to appear on the certificate are listed below:

Name	Label
------	-------

BREEAM Rating

	Credits available	Credits achieved	Credits targeted	% Credits achieved	Weighting	Category score	Target score
Man	17.0	14.0	14.0	82.35%	15.78%	12.99%	12.99%
Hea	12.0	9.0	9.0	75.00%	13.29%	9.96%	9.96%
Ene	17.0	1.0	1.0	5.88%	15.90%	0.93%	0.93%
Tra	2.0	2.0	2.0	100.00%	2.17%	2.16%	2.16%
Wat	5.0	3.0	3.0	60.00%	5.41%	3.24%	3.24%
Mat	13.0	8.0	8.0	61.54%	20.30%	12.49%	12.49%
Wst	11.0	3.0	3.0	27.27%	11.17%	3.04%	3.04%
Le	3.0	3.0	3.0	100.00%	9.74%	9.74%	9.74%
Pol	5.0	3.0	3.0	60.00%	6.25%	3.74%	3.74%
Inn	10.0	0.0	0.0	0.00%	10.00%	0.00%	0.00%
Total	95.0	46.0	46.0	48.42%	-	58.33%	58.33%
Rating	-	-	-	-	-	Unclassified	Very Good

Performance by environmental category



Issue scores

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

Management

Man 01 Project Brief and design

4 / 4

Man 02 Life cycle cost and service life planning

4 / 4

Man 03 Responsible construction practices

4 / 6 X: 0 / 1

Man 04 Commissioning and handover

1 / 1

Man 05 Aftercare

1 / 2 X: 0 / 1

Health and Wellbeing

Hea 01 Visual comfort

2 / 5 X: 0 / 1

Hea 02 Indoor air quality

2 / 2

Hea 03 Safe containment in laboratories

N/A

Hea 04 Thermal comfort

2 / 2

Hea 05 Acoustic performance

2 / 2

Hea 06 Safety and security

1 / 1

Energy

Ene 01 Reduction of energy use and carbon emissions

0 / 15 X: 0 / 5

Ene 02 Energy monitoring

N/A

Ene 03 External lighting

N/A

Ene 04 Low carbon design

1 / 2

Ene 05 Energy efficient cold storage

N/A

Ene 06 Energy efficient transportation systems

N/A

Ene 07 Energy efficient laboratory systems

N/A

Ene 08 Energy efficient equipment

N/A

Ene 09 Drying space

N/A

Transport

Tra 01 Sustainable transport solutions

N/A

Tra 02 Proximity to Amenities

1 / 1

Tra 03 Cyclist facilities

N/A

Tra 04 Maximum car parking capacity

N/A

Tra 05 Travel plan

1 / 1

Water

Wat 01 Water consumption

3 / 5 X: 0 / 1

Wat 02 Water monitoring

N/A

Wat 03 Water leak detection
and prevention

N/A

Wat 04 Water efficient
equipment

N/A

Materials

Mat 01 Life cycle impacts

3 / 6 X: 0 / 1

Mat 03 Responsible sourcing

4 / 4 X: 0 / 1

Mat 04 Insulation

0 / 1

Mat 05 Designing for
durability and resilience

1 / 1

Mat 06 Material efficiency

0 / 1

Waste

Wst 01 Construction waste
management

0 / 7 X: 0 / 1

Wst 02 Recycled aggregates

0 / 1 X: 0 / 1

Wst 03 Operational waste

1 / 1

Wst 04 Speculative finishes

N/A

Wst 05 Adaptation to climate
change

1 / 1

Wst 06 Functional
adaptability

1 / 1

Land use and ecology

Le 02 Protection of
ecological features

1 / 1

Le 05 Long term impact on
biodiversity

2 / 2

Le 04 Enhancing site
ecology

N/A

Pollution

Pol 01 Impact of refrigerants

N/A

Pol 02 Nox Emissions

N/A

Pol 03 Flood risk
management and reducing
surface water run-off

3 / 5 X: 0 / 1

Pol 04 Reduction of Night
Time Light Pollution

N/A

Pol 05 Noise attenuation

N/A

Innovation

Inn 01 Innovation

0 / 0 X: 0 / 10

Initial details

17 Chorlton Street

Part 1 : Fabric and structure : Yes

Part 2 : Core services : No

Part 3 : Local services : No

Part 4 : Interior design : No

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

Technical manual issue number : Issue 2.0

Project type : Shell/fabric only refurbishment

Client : Developer

Assessment stage : Design

Building type (main description) : Retail

Building type (sub-group) : Retail - Shop

For retail buildings, are there office areas? : No

Building floor area (NIFA) Net internal floor area : 268

Building floor area (GIFA) Gross internal floor area : 268

Refurbishment/Fit-out assessment area : 268

What range does the projects value fall into? : < £1 million

New extension assessment area (if applicable within the scope of the assessment) : 0

Historic building (listed building or building in a conservation area) : No

Is commercial and/or industrial scale refrigeration or storage specified/present : No

Are building user transportation systems (lifts and/or escalators) specified/present? : No

For industrial buildings, are there office areas? : N/A

Are there systems that significantly contribute towards unregulated energy demands? : No

Where the scope of the refurbishment covers tenancy areas only, are sanitary fittings present in the tenanted areas? : N/A

Does the building have or mitigate any unregulated water demand? e.g. irrigation or soft-landscaped areas requiring no irrigation, car washing, other significant process related : No

Are there new or existing landscaping areas within the refurbishment or fit-out zone and within developer control? : Yes - existing and new, or existing only

Is there any local heating or hot water present or within scope of refurbishment or fit-out

works? : No

Are there any external areas within the refurbishment or fit-out zone and within developer control that can feasibly be enhanced in line with LE 04 : No

Is there any local cooling present or within scope of refurbishment or fit-out works? : No

Is any externally mounted plant present or specified? : No

Is this a speculative refurbishment? : No

Is external lighting within scope of the refurbishment or fit-out zone? : Yes

Is this a simple building? : No

Is any new insulation specified? : Yes

Is Wat01 within the scope of the assessment in accordance with Table 42? : Yes

Are high grade aggregates to be used in the refurbishment scheme? : Yes

Could any issues within the scope of the assessment have an impact on flood management, surface runoff, or the pollution of watercourses? : Yes

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

Laboratory containment area : No laboratories present

Category assessment

Management (Man)

Man 01 Project Brief and design

Assessment criteria

Stakeholder consultation (project delivery) :

Stakeholder consultation (third party) :

Sustainability champion (design) :

Sustainability champion (monitoring progress) :

Credit scoring

Credits scored : 4

Credits awarded : 4

Man 02 Life cycle cost and service life planning

Assessment criteria

Elemental life cycle cost (LCC) :

Component level LCC plan :

Capital cost reporting :

Capital cost of the project :

Credit scoring

Credits scored : 4

Credits awarded : 4

Man 03 Responsible construction practices

Assessment criteria

Is all timber used in the project 'legally harvested and traded timber'? :

Environmental management :

Construction stage sustainability champion :

Considerate construction : 0

Has the project achieve the minimum standard for an Excellent or Outstanding rating? :

Monitoring of refurbishment or fit-out site impacts :

Utility consumption :

Transport of construction materials and waste :

Exemplary level criteria - considerate construction :

Key Performance Indicators: Construction site energy use

Energy consumption (total) - site processes :

Energy consumption (intensity) - site processes :

Key Performance Indicators: Construction site greenhouse gas emissions

Process greenhouse gas emissions (total) - site processes :

Greenhouse gas emissions (intensity) - site processes :

Key Performance Indicators: Construction site use of freshwater resources

Use of freshwater resource (total) - site processes :

Use of freshwater resource (intensity) - site processes :

Credit scoring

Credits scored : 4

Exemplary credits scored : 0

Credits awarded : 4

Man 04 Commissioning and handover

Assessment criteria

Commissioning building fabric : Yes

Credit scoring

Credits scored : 1

Credits awarded : 1

Man 05 Aftercare

Assessment criteria

Aftercare support : Yes

Post occupancy evaluation : No

Exemplary level criteria :

Credit scoring

Credits scored : 1

Exemplary credits scored : 0

Credits awarded : 1

Health and Wellbeing (Hea)

Hea 01 Visual comfort

Assessment criteria

Daylighting :

View out :

Exemplary level daylighting :

Credit scoring

Credits scored : 2

Exemplary credits scored : 0

Credits awarded : 2

Hea 02 Indoor air quality

Assessment criteria

Min. sources of air pollution: indoor air quality plan :

Ventilation :

Credit scoring

Credits scored : 2

Exemplary credits scored : 0

Credits awarded : 2

Hea 03 Safe containment in laboratories

Assessment criteria - N/A

Hea 04 Thermal comfort

Assessment criteria

Thermal modelling : Yes

Adaptability - for a projected climate change scenario :

Key Performance Indicators: Thermal comfort

Predicted Mean Vote (PMV) :

Predicted Percentage Dissatisfied (PPD) :

Credit scoring

Credits scored : 2

Exemplary credits scored : 0

Credits awarded : 2

Hea 05 Acoustic performance

Assessment criteria

Acoustic performance standards and testing requirements complied with :

Credit scoring

Credits scored : 2

Credits awarded : 2

Hea 06 Safety and security

Assessment criteria

Security of site and building :

Credit scoring

Credits scored : 1

Credits awarded : 1

Energy (Ene)

Ene 01 Reduction of energy use and carbon emissions

Assessment option

Which option is being followed :

Option 1: Whole building energy model

Building Score

Country :

Upload existing building '_epc.inp' file :

Upload proposed building '_epc.inp' file :

Credits :

Actual (existing) building energy demand (DemEx) :

Reference building energy demand (DemRef) :

Actual (proposed) building energy demand (DemProp) :

Actual (existing) building primary energy consumption (PEEx) :

Reference building primary energy consumption (PERef) :

Actual (proposed) building primary energy consumption (PEProp) :

Actual (existing) building CO2 emissions (BEREx) :

Reference building CO2 emissions (SER) :

Actual (proposed) building CO2 emissions (BERProp) :

Building energy demand individual parameter EPR (Energy performance Ratio) :

Primary energy consumption individual parameter EPR (Energy performance Ratio) :

Building CO2 emissions individual parameter EPR (Energy performance Ratio) :

EPRNDR (Energy Performance Ratio Non Domestic Refurbishment) :

Exemplary Assessment Criteria

Zero regulated carbon :

Equivalent % of the building's 'regulated' energy consumption generated by carbon neutral sources and used to meet energy demand from 'unregulated' building systems or processes? :

Is the building designed to be carbon negative? :

If the building is defined as 'carbon negative' what is the total (modelled) renewable/carbon neutral energy generated and exported? :

Credit scoring

Exemplary credits scored : 0

Credits awarded : 0

Ene 02 Energy monitoring

Assessment criteria - N/A

Ene 03 External lighting

Assessment criteria - N/A

Ene 04 Low carbon design

Assessment criteria

Passive design analysis :

Free cooling :

Credit scoring

Credits scored : 1

Exemplary credits scored : 0

Credits awarded : 1

Ene 05 Energy efficient cold storage

Assessment criteria - N/A

Ene 06 Energy efficient transportation systems

Assessment criteria - N/A

Ene 07 Energy efficient laboratory systems

Assessment criteria - N/A

Ene 08 Energy efficient equipment

Assessment criteria - N/A

Ene 09 Drying space

Assessment criteria - N/A

Transport (Tra)

Tra 01 Sustainable transport solutions

Assessment criteria

Building type category (for purposes of Tra01 assessment) :

Public transport accessibility index :

Ref A building dedicated bus services :

Ref B enhanced cycle storage space provision :

Ref C enhanced cyclist facilities :

Ref D electric vehicle charging points :

Ref E car sharing spaces :

Ref F digital information points :

Ref G onsite facilities to reduce the need to travel :

Ref H improvement actions to enhance Accessibility Index :

Credit scoring

Credits scored : 0

Exemplary credits scored : 0

Credits awarded : 0

Tra 02 Proximity to Amenities

Assessment criteria

Close proximity and accessibility to applicable amenities :

Credit scoring

Credits scored : 1

Exemplary credits scored : 0

Credits awarded : 1

Tra 03 Cyclist facilities

Assessment criteria

Building type category (for purpose of Tra03 issue assessment) :

Number of compliant cycle storage spaces provided :

Showers :

Changing facilities :

Lockers :

Drying space :

Cyclist facilities compliant :

Cycle storage spaces compliant :

Credit scoring

Credits scored : 0

Exemplary credits scored : 0

Credits awarded : 0

Tra 04 Maximum car parking capacity

Assessment criteria - N/A

Tra 05 Travel plan

Assessment criteria

Travel plan based on site specific travel survey/assessment :

Credit scoring

Credits scored : 1

Exemplary credits scored : 0

Credits awarded : 1

Water (Wat)

Wat 01 Water consumption

Standard approach data

Water consumption :

Water demand met via greywater/rainwater sources :

Total net water consumption :

Improvement on baseline performance :

Key performance indicator

Total net water consumption :

Default building occupancy :

Alternative approach data

Overall level achieved :

Percentage of demand met from grey or rainwater :

Credit scoring

Credits scored :	3
------------------	---

Exemplary credits scored :	0
----------------------------	---

Credits awarded : 3

Wat 02 Water monitoring

Assessment criteria - N/A

Wat 03 Water leak detection and prevention

Assessment criteria

Credit scoring

Credits scored :	0
------------------	---

Exemplary credits scored :

0

Credits awarded : 0

Wat 04 Water efficient equipment

Assessment criteria - N/A

Materials (Mat)

Mat 01 Life cycle impacts

Assessment criteria

Exemplary level compliant :

Options : Option 1

Option 1: Total Mat 01 points achieved : 3

Credit scoring

Credits scored : 3

Exemplary credits scored : 0

Credits awarded : 3

Mat 03 Responsible sourcing

Assessment criteria

All timber and timber based products are 'Legally harvested and traded timber' :

Is there a documented sustainable procurement plan :

Have at least three material types been responsibly sourced (criterion 1) :

% of available RSM points achieved :

Credit scoring

Credits scored : 4

Exemplary credits scored : 0

Credits awarded : 4

Mat 04 Insulation

Assessment criteria

Embodied impact - insulation index :

Credit scoring

Credits scored : 0

Exemplary credits scored : 0

Credits awarded : 0**Mat 05 Designing for durability and resilience****Assessment criteria**

Protecting vulnerable parts of the building from damage :

Protecting exposed parts of the building from material degradation :

Credit scoring

Credits scored : 1

Exemplary credits scored : 0

Credits awarded : 1**Mat 06 Material efficiency****Assessment criteria**

Material optimisation measures investigated and implemented at relevant stages :

Credit scoring

Credits scored : 0

Exemplary credits scored : 0

Credits awarded : 0

Waste (Wst)

Wst 01 Construction waste management

Assessment criteria

Pre-refurbishment audit :

Resource management plan :

% of points achieved for direct re-used or recycled (table 64) :

Key performance indicator - construction waste

Measure/units for the data being reported :

Non-hazardous construction waste (excluding strip-out/demolition/excavation) :

Exemplary level compliant - Resource efficiency and diversion of waste from landfill :

Non-hazardous non-demolition construction waste diverted from landfill :

Total non-hazardous demolition waste generated :

Non-hazardous demolition waste diverted from landfill :

Material for reuse :

Material for recycling :

Material for energy recovery :

Hazardous waste to disposal :

Credit scoring

Credits scored :	0
------------------	---

Exemplary credits scored :	0
----------------------------	---

Credits awarded : 0

Wst 02 Recycled aggregates

Assessment criteria

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

% of high grade aggregate that is recycled/secondary aggregate - by application

Structural frame :

Bitumen/hydraulically bound base, binder and surface courses :

Building foundations :

Concrete road surfaces :

Pipe bedding :

Granular fill and capping :

Exemplary level compliant :

Credit scoring

Credits scored : 0

Exemplary credits scored : 0

Credits awarded : 0

Wst 03 Operational waste**Assessment criteria**

Segregation and storage of operational recyclable waste volumes :

Static waste compactor(s) or baler(s) :

Vessel(s) for composting suitable organic waste :

Credit scoring

Credits scored : 1

Exemplary credits scored : 0

Credits awarded : 1

Wst 04 Speculative finishes

Assessment criteria - N/A

Wst 05 Adaptation to climate change

Assessment criteria

Adaptation to climate change - structural and fabric resilience :

Credit scoring

Credits scored : 1

Exemplary credits scored : 0

Credits awarded : 1

Wst 06 Functional adaptability

Assessment criteria

Functional adaptability :

Credit scoring

Credits scored : 1

Exemplary credits scored : 0

Credits awarded : 1

Land use and ecology (Le)

Le 02 Protection of ecological features

Assessment criteria

Protection of ecological features :

Credit scoring

Credits scored : 1

Credits awarded : 1

Le 04 Enhancing site ecology

Assessment criteria - N/A

Le 05 Long term impact on biodiversity

Assessment criteria

Suitably qualified ecologist appointment (SQE) :

Landscape and habitat management plan :

Number of applicable measures :

Number of applicable measures implemented :

Credit scoring

Credits scored : 2

Credits awarded : 2

Pollution (Pol)

Pol 01 Impact of refrigerants

Assessment criteria - N/A

Pol 02 Nox Emissions

Assessment criteria - N/A

Pol 03 Flood risk management and reducing surface water run-off

Assessment criteria

Annual probability of flooding :

Avoidance of flooding :

Flood resilience of resistance strategy :

Neutral impact on surface water :

Reducing run-off :

Minimising watercourse pollution :

Exemplary level compliant :

Credit scoring

Credits scored : 3

Exemplary credits scored : 0

Credits awarded : 3

Pol 04 Reduction of Night Time Light Pollution

Assessment criteria - N/A

Pol 05 Noise attenuation

Assessment criteria - N/A

Innovation (Inn)

Inn 01 Innovation

Assessment criteria

Number of 'approved' innovation credits achieved? : 0

Credit scoring

Credits scored : 0

Exemplary credits scored : 0

Credits awarded : 0

Appendix A-7

Thermal comfort assessment: CIBSE TM52



INVESTORS
IN PEOPLE

Joyce

17 Chorlton Street, Manchester M1 3HY

P01
ISSUE

Thermal comfort assessment CIBSE TM52

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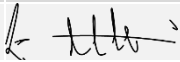
Submitted by Consolux M&E Ltd
Prepared by Alessandra Meza N.
Date June 2025
Issue Preliminary
Project No 852
Revision P01

Document history

Author	Purpose	Revision	Date of Issue
Alessandra Meza N.	Preliminary Issue	1	June 2025

Approvals

This document requires the following approvals.
Signed approval forms are filed in the Management section of the project files.

Name	Signature	Title	Date of Issue
Lee Mckevitt		Operations Director	June 2025
R Greenough		Director	June 2025

Distribution

Name	Title	Date of Issue
Grant Sulkin		June 2025

Note: Unless otherwise noted herein, the conclusions and recommendations contained in this report are based on the information supplied by the Client and visual inspection and testing (if any) described within. Consolux M&E Consulting Ltd. can accept no liability in respect of differences between the actual structure and the information supplied except:

- (i) Where these are clear by visual inspection or
- (ii) Where physical investigation has been undertaken by, or under the control of Consolux M&E Consulting Ltd., and then only to the extent of such physical investigation.

Any information provided by Consolux M&E Consulting Ltd., that are deemed to contradict or differ from this statement should be brought to the attention of Consolux M&E Consulting Ltd., immediately for confirmation and rectification. If this information is not provided prior to submission of documents for planning applications, Consolux M&E Consulting Ltd. is absolved of responsibility.

Executive summary

Consolux M&E Consulting Ltd have been appointed to undertake an overheating analysis of the Joyce by The James scheme to provide design stage guidance and maximise occupant comfort levels. Consequently, thermal modelling has been undertaken to demonstrate compliance against CIBSE TM52 criteria and under DSY2 and DSY3 weather conditions as stated on the Net Zero guidance documents prepared by the Greater Manchester Combined Authority, Levitt Bernstein and Etude.

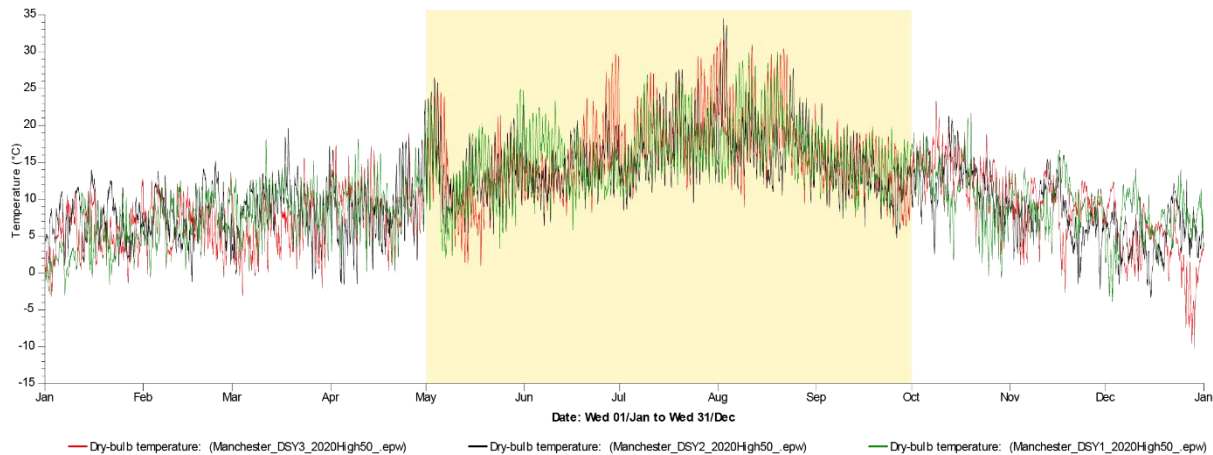


Figure 1 | Combined annual dry bulb temperature (DSY 1, DSY 2, and DSY 3)

For this study, 366 occupied spaces within the scheme were assessed through dynamic simulation modelling. Internal heat gains of the suites follow CIBSE TM59 guidelines, and internal heat gains from all amenities and landlord areas follow NCM templates. The conditions of the building fabric are detailed in Table 1 below. The design of the scheme does not include shading devices such as overhangs, brise soleil, or awnings. However, the wall reveals provide a degree of shading to the spaces.

Element	Proposed building fabric	Approved document L2 limiting values	
		Renovated/retained in existing buildings	New/replacement in new/existing building
External walls (New build)	0.15 W/m ² k	N/A	0.26 W/m ² k
External walls (Refurb)	0.3 W/m ² k	0.3 W/m ² k	N/A
Party walls (corridor)	0.0 W/m ² k	N/A	N/A
Ground floor	0.18 W/m ² k	0.25 W/m ² k	0.18 W/m ² k
Roof	0.18 W/m ² k	0.18 W/m ² k	0.18 W/m ² k
Glazing	1.2 W/m ² k G-value = 0.4	N/A	1.6 W/m ² k G-value = N/A
Air permeability	4.00 m ³ /(h.m ²) @50Pa	N/A	8.00m ³ /(h.m ²) @50Pa

Table 1 | Building fabric

The study assessed the scheme under 9 different scenarios. Scenarios 7 to 9 show that the scheme effectively mitigates the risk of overheating through the combined ventilation strategy of MVHR + VRF (active cooling) given the restrictions that the current noise level on the site pose when considering a passive-only ventilation strategy, especially under DSY2 and DSY3 weather conditions as required by the GMCA.

Table of Contents

1.0 Introduction	5
1.1 Overview	5
2.0 Project information	6
3.0 Legislation & policy context	7
3.1 CIBSE TM52	7
3.2 Greater Manchester Combined Authority Net Zero guidance	7
4.0 Object of study	8
5.0 Methodology	9
5.1 Cooling hierarchy	9
5.1.1 Internal heat gains	9
5.1.2 Building fabric	9
5.1.3 Shading	10
5.1.4 Passive ventilation	10
5.1.5 Mechanical ventilation	10
5.1.6 Active cooling	10
5.2 Assessment category	10
5.3 Acoustic considerations	11
5.4 Security considerations	11
5.5 Modelling software	11
5.6 Weather data	11
6.0 Results	13
6.1 Scenario 1	13
6.2 Scenario 2	14
6.3 Scenario 3	14
6.4 Scenario 4	15
6.5 Scenario 5	15
6.6 Scenario 6	15
6.7 Scenario 7	15
6.8 Scenario 8	15
6.9 Scenario 9	15
7.0 Conclusion	16

1.0 Introduction

1.1 Overview

Consolux M&E Consulting Ltd have been appointed to undertake an overheating analysis of the Joyce by The James scheme to provide design stage guidance and maximise occupant comfort levels. Consequently, thermal modelling has been undertaken to demonstrate compliance against CIBSE TM52 criteria. The current proposal is to minimise overheating risk by following the Cooling Hierarchy.

This report presents an analytical assessment of the potential overheating risks of the residential and commercial areas. The scope of this study is to report upon the likely overheating risk and to assess the periods of the year that the building has the potential to overheat using current CIBSE weather file data.

This assessment complies with national guidance of conservation of fuel and power and all relevant overheating assessment publications, such as CIBSE's TM48 and TM52. The thermal model was created using IESVE, one of the software approved by the UK Government for DSM.

2.0 Project information

The scheme to be assessed is 'Joyce by The James' located in 17 Chorlton Street, Manchester, consisting of the transformation of the existing 1973 office building (known as Boulton House) including an element of new build on the existing car park, into serviced apartment accommodation which will offer short-term accommodation as an alternative to hotels for visitors to the city, including a central courtyard on the ground floor.

The site has an area of 0.25 ha and is located to the north-east of Chorlton Street, between Major Street and Bloom Street, on the edge of Manchester's Gay Village and the Portland Street area. The Site is within a highly accessible location in Manchester City Centre and is well-served by public transport, located directly opposite Manchester Central Coach Station and within a short walk from Manchester Piccadilly and Oxford Road train stations. The Site is located outside of, but adjacent to, the Portland Street SRF area to the west of Chorlton Street. The SRF area comprises land bounded by Portland Street, Bloom Street, Abingdon Street and Chorlton Street.

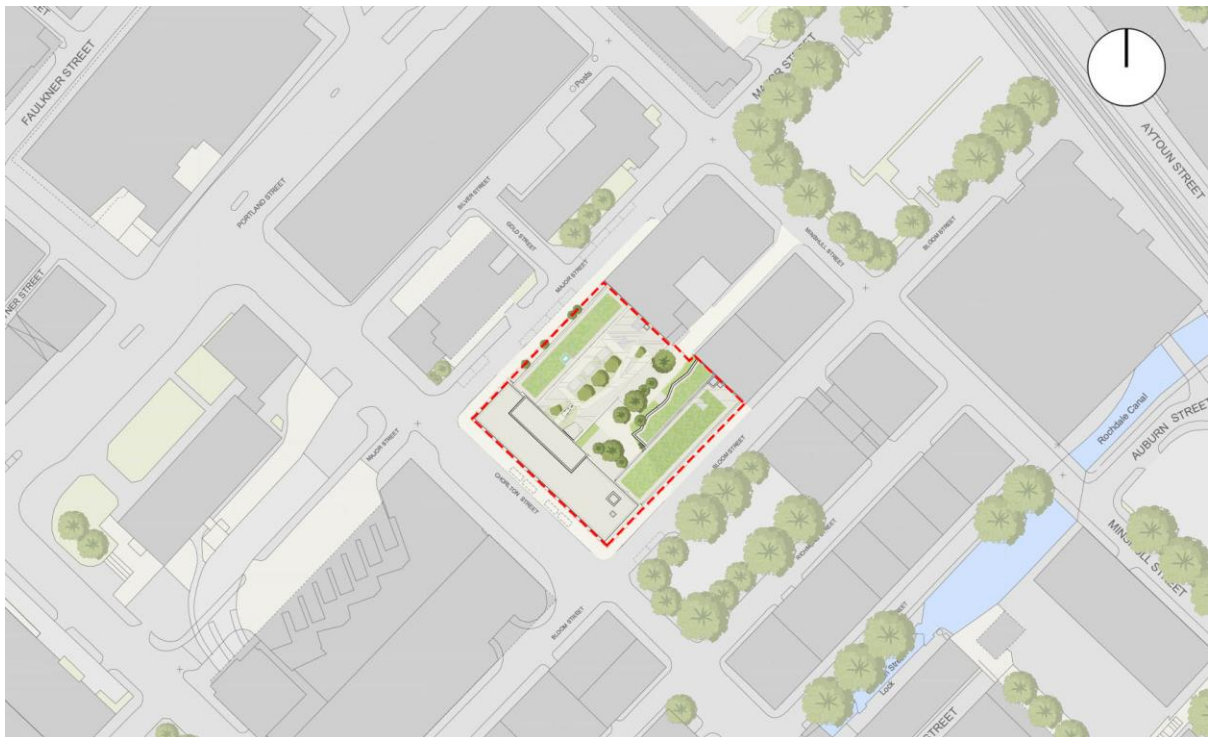


Figure 2 | Site location

3.0 Legislation & policy context

3.1 CIBSE TM52

According to the CIBSE TM52: 2013 'The limits of thermal comfort: avoiding overheating in European buildings' to guarantee appropriate levels of thermal comfort inside a mechanically ventilated non-residential project, the spaces must comply with the following criteria:

- **Criterion 1: Hours of exceedance**

The number of hours during which ΔT is greater than or equal to one degree (K) during the period May to September inclusive should not be more than 3 per cent of occupied hours.

- **Criterion 2: Daily weighted exceedance**

The weighted exceedance should be less than or equal to 6.

- **Criterion 3: Upper limit temperature**

To set an absolute maximum value for the indoor operative temperature the value of ΔT should not exceed 4 K.

3.2 Greater Manchester Combined Authority Net Zero guidance

'Submission guidance' is the third part of a suite of three Net Zero guidance documents prepared by the Greater Manchester Combined Authority, Levitt Bernstein and Etude. 'Submission guidance' focuses on what to submit as part of a planning application to cover the energy and carbon statement element of a submission. Section 5 'Overheating risk' of this document requires an overheating risk assessment as part of the appendix of the Energy and Carbon statement.

4.0 Object of study

For this study, 366 occupied spaces within the scheme were assessed. The drawings used to create the energy model are listed below:

- 10531-SHA-ZZ-A-B5D9-G100-EL-NW-001
- 10531-SHA-ZZ-A-B5D9-G100-EL-SE-001
- 10531-SHA-ZZ-A-B5D9-G100-EL-SW-001
- 10531-SHA-ZZ-A-B5D9-G100-EL-NW-001
- 10531-SHA-ZZ-A-B5D9-G200-EL-NW-001
- 10531-SHA-ZZ-A-B5D9-G200-EL-SE-001
- 10531-SHA-ZZ-A-B5D9-G200-EL-SW-001
- 10531-SHA-ZZ-A-B5D9-G200-PL-00-001
- 10531-SHA-ZZ-A-B5D9-G200-PL-01-001
- 10531-SHA-ZZ-A-B5D9-G200-PL-02-001
- 10531-SHA-ZZ-A-B5D9-G200-PL-04-001
- 10531-SHA-ZZ-A-B5D9-G200-PL-06-001
- 10531-SHA-ZZ-A-B5D9-G200-PL-07-001
- 10531-SHA-ZZ-A-B5D9-G200-PL-08-001
- 10531-SHA-ZZ-A-B5D9-G200-PL-RF-001
- 10531-SHA-ZZ-A-B5D9-G200-SE-AA-001
- 10531-SHA-ZZ-A-B5D9-G200-SE-BB-001
- 10531-SHA-ZZ-A-B5D9-G200-SE-CC-001

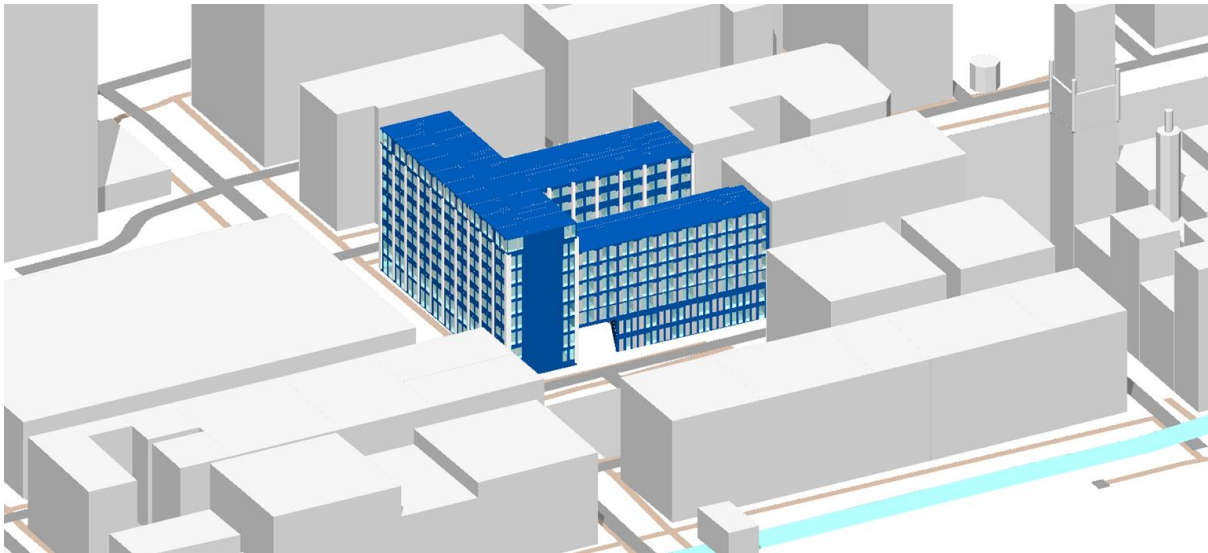


Figure 3 | Scheme geometry and surrounding buildings

5.0 Methodology

The methodology used within this report has been to establish the thermal comfort levels in the occupied spaces within the development through dynamic simulation modelling. All assumptions in the modelling are provided in the sub-section 5.1 of this report. The assessment analyses all 366 occupied rooms as per CIBSE TM52 in a total of 9 storeys. These areas that are at high risk of overheating will be analysed in this report. There are 5 rooms that have been modelled for accuracy of the simulation however have not been subject to analysis under CIBSE TM52 criteria.

The development has been analysed under six different scenarios, which alternate between weather conditions (as per GMCA submission guidance) and passive strategies to reduce solar heat gain during summer months. Table 2 below summarises the scenarios and the specific conditions of it.

Scenario	Geometry conditions	Windows / Vent. Panels	Ventilation	Weather condition
Scenario 1	As designed	Openable	Mixed mode	DSY 2
Scenario 2				DSY 3
Scenario 3	As designed			DSY 2
Scenario 4	Addition of internal blinds			DSY 3
Scenario 5	As designed			DSY 2
Scenario 6	Addition of internal blinds Windows g-value = 0.3			DSY 3
Scenario 7	As designed	Closed	Active cooling	DSY 1
Scenario 8				DSY 2
Scenario 9				DSY 3

Table 2 | Scenarios

5.1 Cooling hierarchy

Major development proposals should reduce potential overheating and reliance on air conditioning systems and demonstrate this. This assessment has followed the cooling hierarchy (Figure 4) and thus mitigated the risk of overheating without the need of active cooling.

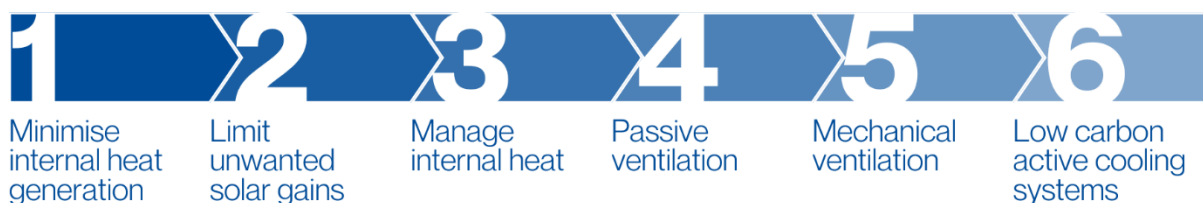


Figure 4 | Cooling hierarchy

5.1.1 Internal heat gains

Internal heat gains of the suites follow CIBSE TM59 guidelines, and internal heat gains from all amenities and landlord areas follow NCM templates.

5.1.2 Building fabric

Element	Proposed building fabric	Approved document L2 limiting values	
		Renovated/retained in existing buildings	New/replacement in new/existing building
External walls (New build)	0.15 W/m ² k	N/A	0.26 W/m ² k
External walls (Refurb)	0.3 W/m ² k	0.3 W/m ² k	N/A
Party walls (corridor)	0.0 W/m ² k	N/A	N/A
Ground floor	0.18 W/m ² k	0.25 W/m ² k	0.18 W/m ² k
Roof	0.18 W/m ² k	0.18 W/m ² k	0.18 W/m ² k

Glazing	1.2 W/m ² k G-value = 0.4	N/A	1.6 W/m ² k G-value = N/A
Glazing (Scenarios 5 & 6)	1.2 W/m ² k G-value = 0.3	N/A	1.6 W/m ² k G-value = N/A
Air permeability	4.00 m ³ /(h.m ²) @50Pa	N/A	8.00m ³ /(h.m ²) @50Pa

Table 3 | Building fabric

5.1.3 Shading

The design of the scheme does not include shading devices such as overhangs, brise soleil, or awnings. However, the walls reveals provide a degree of shading to the spaces. The external walls of the existing structure have an external reveal of 101mm and an internal reveal of 292mm. On the other hand, the external walls of the new structure have an external reveal of 215mm and an internal reveal of 262mm. There is a difference of 84mm between the external walls from the existing and the new build structure.

5.1.4 Passive ventilation

Scenarios 1 to 6 have been modelled to allow the rapid ventilation panels to be open according to the following setpoints:

- Start to open when the internal temperature exceeds 22°C.
- Be fully open when the internal temperature exceeds 26°C.
- Start to close when the internal temperature falls below 26°C.
- Be fully closed when the internal temperature falls below 22°C.

The rapid ventilation doors are a fully openable opaque panels set to provide enough ventilation in line with Approved Document F requirements. The ventilation doors are 1.35m height by 0.5m in most of the suites, except on those located on the new build wing of the development and on the topmost floor of the existing building, which have 2.26m height by 0.5m ventilation doors. All rapid ventilation doors include a fixed perforated panel on the outside as safety measure, which reduce the free area of the opening to 40%.

5.1.5 Mechanical ventilation

The ventilation of the spaces assessed in scenario 1 to 6 has been provided solely through mechanical ventilation with heat recovery (MVHR) for all occupied spaces. Table 4 below detail the ventilation settings for the units.

MVHR modes	Flow rate
Summer bypass	0.3 l/s.m ²
Heat/Coolth recovery	0.3 l/s.m ²
Purge	2 ACH
Purge inhibited	0.3 l/s.m ²

Table 4 | MVHR modes

5.1.6 Active cooling

The conclusions of the Noise Impact Assessment state: *“With windows open, the recommended internal noise limit is likely to be exceeded at most of the habitable rooms at the development site. Active ventilation may be a consideration for habitable rooms where noise levels are considered to be elevated. Such a system would allow future residents to enjoy acceptable internal noise levels while maintaining appropriate ventilation requirements.”*

Given the conclusions of the Noise Impact Assessment and the results of the first two scenarios, additional three scenarios (7, 8, and 9) are included in the study with the ventilation panels set as closed at all times. The ventilation is provided for these scenarios through a combination of VRF and MVHR units, as per the ventilation strategy specified by the mechanical engineers.

5.2 Assessment category

All occupied rooms within the boundary of the existing building are assessed under CIBSE TM52 Category 3.

All occupied rooms forming part of the extension volume are assessed under CIBSE TM52 Category 2.

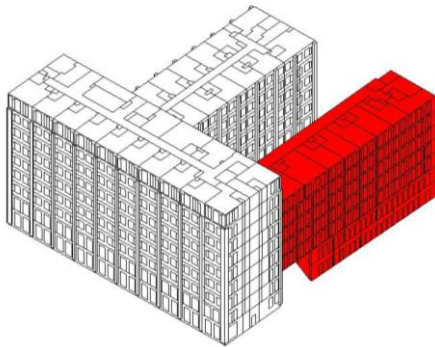


Figure 5 | Category 2 rooms

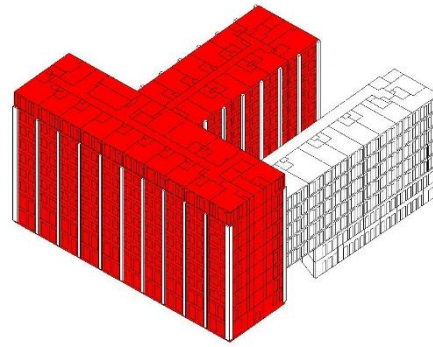


Figure 6 | Category 3 rooms

5.3 Acoustic considerations

The Noise Impact Assessment report show that the noise reading captured by the receptors on the external facades exceed consistently the 55 dB(A) $L_{Aeq,T}$ WHO guidance value for people being seriously annoyed. As such, the report state that *“results demonstrate that internal noise criteria will generally be exceeded across the façades of the development during daytime and night-time periods when relying on a partially open window. Alternative ventilation will therefore be required.”*

The report also mentions the following: *“It should be noted that given the elevated noise levels, specifically the LAfMax noise levels during the night-time, bedrooms are recommended to be equipped with an active ventilation system such as mechanical ventilation with heat recovery (MVHR) or similar.”*

Scenarios 7 to 9 were run with closed ventilation panels, as scenarios 1 to 6 were calculated prior to the issue of the Noise Impact Assessment report.

5.4 Security considerations

Fixed perforated panels are to be installed outside of all rapid ventilation doors as safety measure for the occupants.

5.5 Modelling software

The overheating analysis is undertaken using Dynamic Simulation Modelling as it is required by the methodology described on the TM52. The modelling was undertaken using the IES Virtual Environment suite of tools. This software is a DCLG approved simulation environment that complies with the requirements of CIBSE Guide A and meets the classification of dynamic modelling under CIBSE AM11 ‘Building Energy and Environmental Modelling’. A 3D model of the units to analyse and adjacencies were created using the ModelIT tool based on the CAD drawings submitted by the Architect. Figure 7 shows the energy model of the scheme geometry and surrounding buildings.

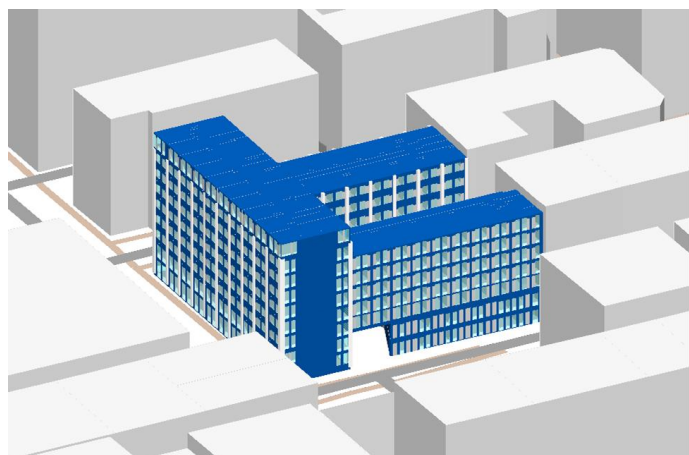


Figure 7 | Scheme geometry and surrounding buildings

5.6 Weather data

The simulation has been conducted on the building using **Manchester DSY1 2020 High50**, **Manchester DSY2 2020 High50** and **Manchester DSY3 2020 High50**, as provided by CIBSE, in accordance with section 5 of the 'Submission guidance', as part of the Greater Manchester Combined Authority Net Zero guidance.

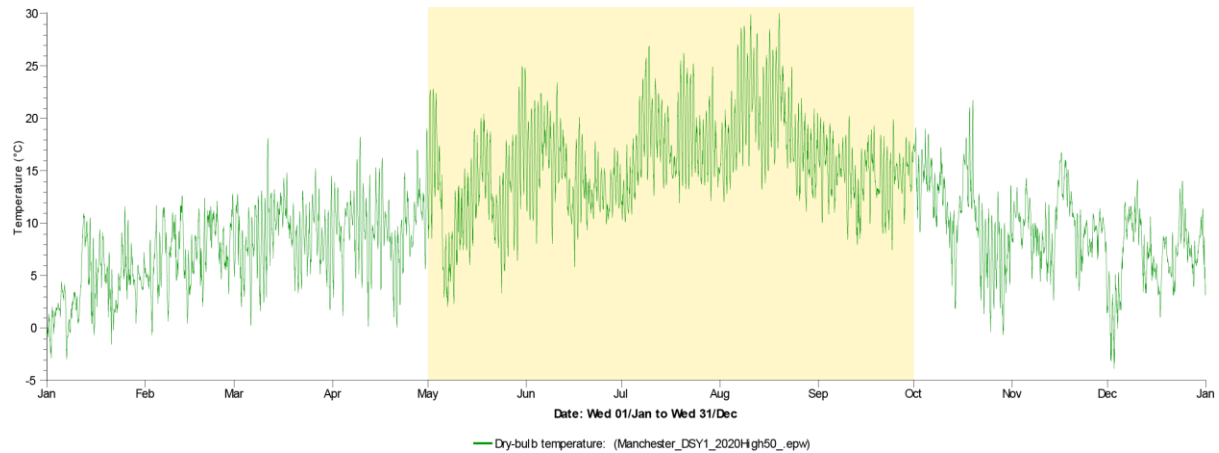


Figure 8 | Annual DSY 1 dry bulb temperature

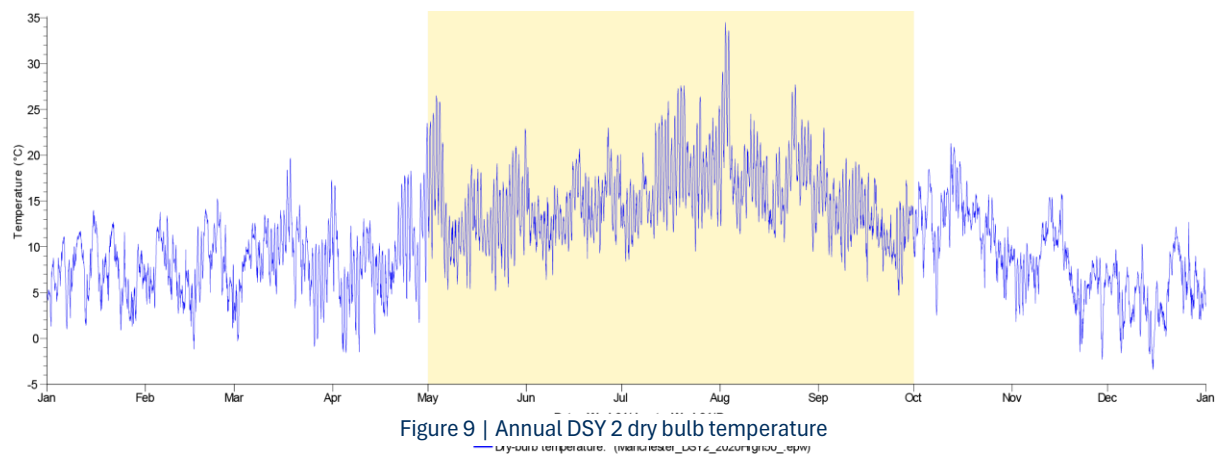


Figure 9 | Annual DSY 2 dry bulb temperature

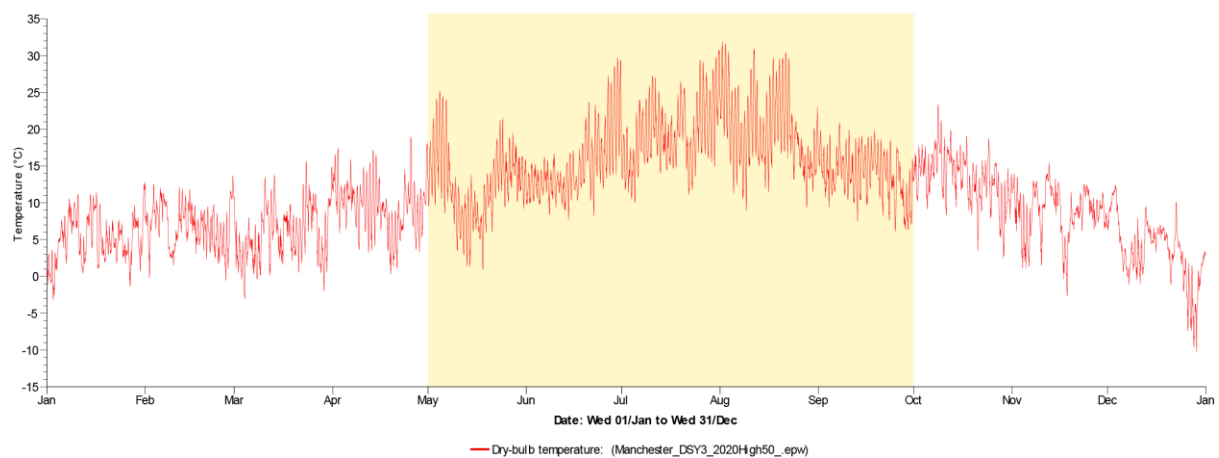


Figure 10 | Annual DSY 3 dry bulb temperature

6.0 Results

According to the CIBSE TM52: 2013 'The limits of thermal comfort: avoiding overheating in European buildings' to guarantee appropriate levels of thermal comfort inside a mechanically ventilated non-residential project, the spaces must comply with the following criteria:

- **Criteria 1: Hours of exceedance**

The number of hours during which ΔT is greater than or equal to one degree (K) during the period May to September inclusive should not be more than 3 per cent of occupied hours.

- **Criteria 2: Daily weighted exceedance**

The weighted exceedance should be less than or equal to 6.

- **Criteria 3: Upper limit temperature**

To set an absolute maximum value for the indoor operative temperature the value of ΔT should not exceed 4 K.

6.1 Scenario 1

This scenario assessed the geometry as per architectural design as a mixed-mode ventilated building under DSY2 weather conditions. In this scenario, **96.7%** of the occupied rooms passed the assessment and only **12** out of 366 failed. All 12 rooms failing are located in the existing building structure and hence assessed under Category 3 limits. All the 12 rooms failing also failed both Criteria 2 and 3. None of the failing rooms failed Criteria 1.

Floor	Room name	Assessment category	Criteria 1 (%Hrs Top-Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. ΔT)
01	Junior Suite 10	Category 3	2.1	28	5
08	1 Bed Suite_Bedroom	Category 3	0.6	28	5
08	Junior Suite 2	Category 3	1.3	34	6
08	Junior Suite 3	Category 3	1.1	30	5
08	Junior Suite 4	Category 3	1.1	29	5
08	Junior Suite 5	Category 3	1.1	29	5
08	Junior Suite 6	Category 3	1.1	29	5
08	Junior Suite 7	Category 3	1.2	32	6
08	Junior Suite 8	Category 3	1.3	33	6
08	Junior Suite 9	Category 3	1.5	35	6
08	Junior Suite 10	Category 3	2	40	7
08	Junior Suite 11	Category 3	2.2	46	7

Table 5 | Failing rooms under Scenario 1 conditions

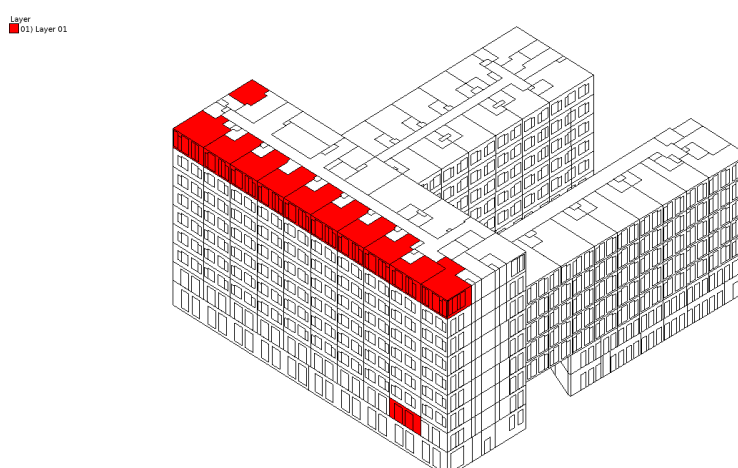


Figure 11 | Failing rooms under Scenario 1 conditions

6.2 Scenario 2

This scenario assessed the geometry as per architectural design as a mixed-mode ventilated building under DSY3 weather conditions, being this the only difference with Scenario 1. In this scenario, **98%** of the occupied rooms passed the assessment and only **7** out of 366 failed. Three rooms failed all three criteria, three rooms failed criteria 1 & 2, and only one room failed criteria 2 & 3. In this scenario, one circulation area from the ground floor. This space did not fail under DSY2 weather conditions. In general, fewer rooms failed under DSY3 weather conditions in comparison to the results of Scenario 1.

Layer 01 Layer 01

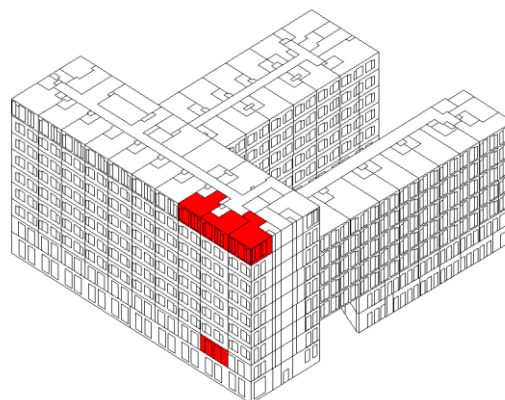


Figure 12 | Failing rooms under Scenario 2 conditions

Floor	Room name	Assessment category	Criteria 1 (%Hrs Top-Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. ΔT)
00	Circulation	Category 3	3.5	9	1
01	Junior Suite 10	Category 3	3.2	21	5
08	Circulation	Category 3	4.5	27	3
08	Circulation	Category 3	3.2	18	3
08	Junior Suite 9	Category 3	2.9	21	5
08	Junior Suite 10	Category 3	3.4	25	5
08	Junior Suite 11	Category 3	3.7	29	5

Table 6 | Failing rooms under Scenario 2 conditions

6.3 Scenario 3

This scenario assessed the geometry under DSY2 weather conditions as per architectural design with the addition of blinds on windows, being this the only difference with Scenario 1. In this scenario, **99.5%** of the occupied rooms passed the assessment and only **2** out of 366 failed. The two rooms failing have also failed in the previous scenarios. This means that adding blinds does not suffice to mitigate the risk of overheating for these spaces under DSY2 weather conditions when assessed as a mixed-mode ventilated building.

Layer 01 Layer 01

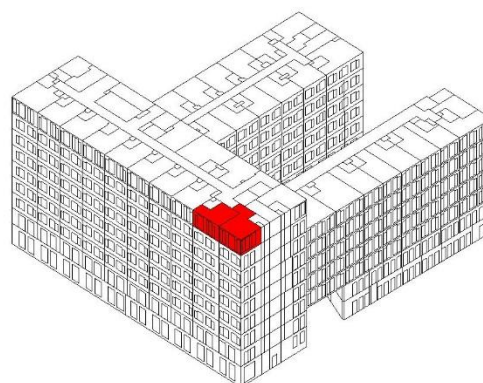


Figure 13 | Failing rooms under Scenario 3 conditions

Floor	Room name	Assessment category	Criteria 1 (%Hrs Top-Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. ΔT)
08	Junior Suite 10	Category 3	0.9	24	5
08	Junior Suite 11	Category 3	0.9	28	5

Table 7 | Failing rooms under Scenario 3 conditions

6.4 Scenario 4

This scenario assessed the geometry under DSY3 weather conditions as per architectural design with the addition of blinds on windows, being this the only difference with Scenario 2. In this scenario, **100%** of the occupied rooms passed the assessment. It can be concluded that adding blinds is a favourable passive measure to mitigate the risk of overheating under DSY3 weather conditions when assessed as a mixed-mode ventilated building. However, the purpose of this assessment is to demonstrate that the risk of overheating can be mitigated under both DSY2 and DSY3 weather conditions, hence further iterations are assessed the sections 6.5 and 6.6.

6.5 Scenario 5

This scenario assessed the geometry under DSY2 weather conditions as per architectural design with the addition of blinds on windows and the g-value of the glazed panels being reduced from 0.4 to 0.3. In this scenario, **100%** of the occupied rooms passed the assessment. It can be concluded that the improvement of the g-value on the glazed panels of the building envelope -on top of the addition of blinds- is a favourable combination of passive measures to mitigate the risk of overheating under DSY2 weather conditions when assessed as a mixed-mode ventilated building.

6.6 Scenario 6

This scenario assessed the geometry under DSY3 weather conditions as per architectural design with the addition of blinds on windows and the g-value of the glazed panels being reduced from 0.4 to 0.3. In this scenario, **100%** of the occupied rooms passed the assessment. It can be concluded that the improvement of the g-value on the glazed panels of the building envelope -on top of the addition of blinds- is a favourable combination of passive measures to mitigate the risk of overheating under DSY3 weather conditions when assessed as a mixed-mode ventilated building.

6.7 Scenario 7

This scenario assessed the geometry as per architectural design, however the assessment conditions are different from the previous six scenarios. Scenario 7 is assessed as an actively cooled building as the Noise Impact Assessment stated that the external noise sources require the spaces to not have the windows open to ensure acceptable indoor acoustic conditions. As such, this scenario assessed the development under DSY1 weather conditions as starting point. The calculations showed that **100%** of the occupied rooms passed the assessment.

6.8 Scenario 8

This scenario assessed the development under the same conditions as Scenario 7 with the exception of the weather, this being changed to DSY2. The calculations showed that **100%** of the occupied rooms passed the assessment.

6.9 Scenario 9

This scenario assessed the development under the same conditions as Scenario 7 with the exception of the weather, this being changed to DSY3. The calculations showed that **100%** of the occupied rooms passed the assessment. It can be concluded that active cooling ensures that all spaces with closed windows pass the assessment under various weather conditions, future-proofing the development despite the challenges that closed-windows pose to allow for passive ventilation.

7.0 Conclusion

Consolux M&E Consulting Ltd have been appointed to undertake an overheating analysis of the 'Joyce by The James' scheme as part of the requirements for a Full Planning Application as mentioned in the Net Zero guidance documents prepared by the Greater Manchester Combined Authority. The assessment demonstrates that the scheme complies with the CIBSE TM52 criteria and thus mitigates the risk of overheating effectively.

The study assessed the scheme under 9 different scenarios. Scenarios 7 to 9 show that the scheme effectively mitigates the risk of overheating through the combined ventilation strategy of MVHR + VRF (active cooling) given the restrictions that the current noise level on the site pose when considering a passive-only ventilation strategy, especially under DSY2 and DSY3 weather conditions as required by the GMCA.

Appendix A-8a

CIBSE TM52 calculation results: Scenario 1



INVESTORS
IN PEOPLE

Scenario 1

Occupied rooms passing the assessment	354
Occupied rooms failing the assessment	12
Unoccupied rooms	5
Total rooms modelled	371

Weather file:	Manchester_DSY2_2020High50_epw
Days data	365 (01-Jan to 31-Dec)
Days (summer)	153 (01-May to 30-Sep)
Data OK?	OK - Full summer

Floor	Room Name	Assessment category	Occupied days (%)	Criteria 1 (%Hrs Top-Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. ΔT)	Result
00	2 Bed Suite 06 (L)_Bedroom	Category 2	100	0.4	12	2	Pass
00	2 Bed Suite 06 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 01(L)_Bedroom	Category 2	100	0.5	21	3	Pass
00	3 Bed Suite 01(L)_Living/Kitchen	Category 2	100	0.7	11	2	Pass
00	3 Bed Suite 02 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 2 (L)_Bedroom	Category 2	100	0.5	18	2	Pass
00	3 Bed Suite 3 (L)_Bedroom	Category 2	100	0.5	16	2	Pass
00	3 Bed Suite 3 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 4 (L)_Bedroom	Category 2	100	0.5	16	2	Pass
00	3 Bed Suite 4 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 5 (L)_Bedroom	Category 2	100	0.4	15	2	Pass
00	3 Bed Suite 5 (L)_Hall	Category 2	0	0	0	0	N/A
00	Business Lounge	Category 3	100	0	0	0	Pass
00	Business Lounge (individual space)	Category 3	100	0	0	0	Pass
00	Business Lounge (individual space)	Category 3	100	0	0	0	Pass
00	Circulation	Category 2	100	0.4	6	1	Pass
00	Circulation	Category 2	100	0.5	7	1	Pass
00	Circulation	Category 3	100	1.7	19	2	Pass
00	Circulation	Category 3	100	0.1	2	1	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Commercial	Category 3	100	0	0	0	Pass
00	Gym /Yoga Studio	Category 3	100	0	0	0	Pass
00	Junior Suite 10	Category 2	100	0.3	9	2	Pass
00	Junior Suite 7	Category 2	100	0.3	9	2	Pass
00	Junior Suite 8	Category 2	100	0.3	8	2	Pass
00	Junior Suite 9	Category 2	100	0.2	4	1	Pass
00	Management	Category 3	100	0	0	0	Pass
00	Meeting Room	Category 3	100	0	0	0	Pass
00	Podcast Room	Category 3	100	0	0	0	Pass
00	Reception	Category 3	100	0	0	0	Pass
00	Social Lounge	Category 3	100	0	0	0	Pass
00	Wellfare	Category 3	100	0	0	0	Pass
00	Wellfare	Category 3	100	0	0	0	Pass
01	1 Bed Suite 1_Bedroom	Category 3	100	0.3	8	2	Pass
01	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.7	12	2	Pass
01	1 Bed Suite 23_Bedroom	Category 3	100	0.4	17	2	Pass
01	1 Bed Suite 23_Living/Kitchen	Category 3	100	0.9	18	3	Pass
01	2 Bed Suite 2 (U)_Bedroom	Category 2	100	0.4	18	3	Pass
01	2 Bed Suite 2 (U)_Living/Kitchen	Category 2	100	0.9	22	3	Pass
01	2 Bed Suite 3 (U)_Bedroom	Category 2	100	0.4	18	3	Pass
01	2 Bed Suite 3 (U)_Living/Kitchen	Category 2	100	0.9	21	3	Pass
01	2 Bed Suite 4 (U)_Bedroom	Category 2	100	0.4	18	3	Pass
01	2 Bed Suite 4 (U)_Living/Kitchen	Category 2	100	0.9	20	3	Pass
01	2 Bed Suite 6 (U)_Bedroom	Category 2	100	0.5	21	3	Pass
01	2 Bed Suite 6 (U)_Living/Kitchen	Category 2	100	0.7	12	2	Pass
01	3 Bed Suite 1 (U)_Bedroom	Category 2	100	0.5	22	4	Pass
01	3 Bed Suite 1 (U)_Bedroom	Category 2	100	0.4	18	3	Pass
01	3 Bed Suite 1 (U)_Living/Kitchen	Category 2	100	0.9	19	3	Pass
01	3 Bed Suite 5 (U)_Bedroom	Category 2	100	0.4	18	3	Pass
01	3 Bed Suite 5 (U)_Bedroom	Category 2	100	0.4	17	3	Pass
01	3 Bed Suite 5 (U)_Living/Kitchen	Category 2	100	0.8	18	3	Pass
01	Circulation	Category 3	100	0.7	15	2	Pass
01	Circulation	Category 3	100	0.5	7	1	Pass
01	Circulation	Category 3	100	0.5	11	2	Pass
01	Circulation	Category 3	100	0.7	16	2	Pass
01	Circulation	Category 3	100	0.3	5	1	Pass
01	Circulation	Category 3	100	0.3	5	1	Pass
01	Junior Suite 10	Category 3	100	2.1	28	5	Fail
01	Junior Suite 11	Category 3	100	1.2	24	4	Pass
01	Junior Suite 12	Category 3	100	0.1	4	1	Pass
01	Junior Suite 13	Category 3	100	0	0	0	Pass
01	Junior Suite 14	Category 3	100	0	0	0	Pass
01	Junior Suite 15	Category 3	100	0	0	0	Pass
01	Junior Suite 16	Category 3	100	0	0	0	Pass
01	Junior Suite 17	Category 3	100	0	0	0	Pass

01	Junior Suite 18	Category 3	100	0	0	0	Pass
01	Junior Suite 19	Category 3	100	0	0	0	Pass
01	Junior Suite 2	Category 3	100	0.5	17	4	Pass
01	Junior Suite 20	Category 3	100	0	0	0	Pass
01	Junior Suite 21	Category 3	100	0	0	0	Pass
01	Junior Suite 22	Category 3	100	0.1	3	1	Pass
01	Junior Suite 24	Category 3	100	0.5	15	2	Pass
01	Junior Suite 25	Category 3	100	0.1	3	1	Pass
01	Junior Suite 26	Category 3	100	0.1	2	1	Pass
01	Junior Suite 27	Category 3	100	0.2	3	1	Pass
01	Junior Suite 28	Category 3	100	0.1	2	1	Pass
01	Junior Suite 29	Category 3	100	0.1	2	1	Pass
01	Junior Suite 3	Category 3	100	0.8	21	4	Pass
01	Junior Suite 30	Category 3	100	0	0	0	Pass
01	Junior Suite 4	Category 3	100	1.1	20	4	Pass
01	Junior Suite 5	Category 3	100	1.1	19	4	Pass
01	Junior Suite 6	Category 3	100	1.1	19	4	Pass
01	Junior Suite 7	Category 3	100	0.9	18	4	Pass
01	Junior Suite 8	Category 3	100	0.9	18	4	Pass
01	Junior Suite 9	Category 3	100	1.2	19	4	Pass
02	1 Bed Suite 1_Bedroom	Category 3	100	0.4	10	2	Pass
02	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.7	15	3	Pass
02	Circulation	Category 2	100	0.7	26	4	Pass
02	Circulation	Category 3	100	0.5	10	2	Pass
02	Circulation	Category 3	100	0.6	13	2	Pass
02	Circulation	Category 3	100	0.6	13	2	Pass
02	Circulation	Category 3	100	0.7	15	2	Pass
02	Circulation	Category 3	100	0.5	8	1	Pass
02	Circulation	Category 3	100	0.5	7	1	Pass
02	Junior Suite 5	Category 3	100	0.4	14	3	Pass
02	Junior Suite 9	Category 3	100	0.4	15	3	Pass
02	Junior Suite 10	Category 3	100	0.5	23	4	Pass
02	Junior Suite 11	Category 3	100	0.5	24	4	Pass
02	Junior Suite 12	Category 3	100	0.3	13	2	Pass
02	Junior Suite 12	Category 3	100	0.4	14	2	Pass
02	Junior Suite 13	Category 2	100	0.5	21	3	Pass
02	Junior Suite 14	Category 2	100	0.5	23	3	Pass
02	Junior Suite 15	Category 2	100	0.5	17	3	Pass
02	Junior Suite 16	Category 2	100	0.5	16	2	Pass
02	Junior Suite 17	Category 2	100	0.5	16	2	Pass
02	Junior Suite 18	Category 2	100	0.5	15	2	Pass
02	Junior Suite 19	Category 2	100	0.5	15	2	Pass
02	Junior Suite 2	Category 3	100	0.4	14	3	Pass
02	Junior Suite 20	Category 2	100	0.5	15	2	Pass
02	Junior Suite 21	Category 2	100	0.5	16	2	Pass
02	Junior Suite 22	Category 3	100	0.1	3	1	Pass
02	Junior Suite 23	Category 3	100	0.1	3	1	Pass
02	Junior Suite 24	Category 3	100	0.1	3	1	Pass
02	Junior Suite 25	Category 3	100	0	0	0	Pass
02	Junior Suite 26	Category 3	100	0.3	11	2	Pass
02	Junior Suite 26	Category 3	100	0.3	11	2	Pass
02	Junior Suite 26	Category 3	100	0.3	7	2	Pass
02	Junior Suite 27	Category 3	100	0.4	8	1	Pass
02	Junior Suite 27	Category 3	100	0.3	6	1	Pass
02	Junior Suite 27	Category 3	100	0.3	6	1	Pass
02	Junior Suite 3	Category 3	100	0.4	14	3	Pass
02	Junior Suite 30	Category 3	100	0.4	8	1	Pass
02	Junior Suite 31	Category 3	100	0.4	9	2	Pass
02	Junior Suite 32	Category 3	100	0.5	17	2	Pass
02	Junior Suite 32	Category 3	100	0.4	15	3	Pass
02	Junior Suite 32	Category 3	100	0.4	12	2	Pass
02	Junior Suite 33	Category 3	100	0.3	7	2	Pass
02	Junior Suite 34	Category 3	100	0.1	2	1	Pass
02	Junior Suite 35	Category 3	100	0.1	3	1	Pass
02	Junior Suite 36	Category 3	100	0.2	4	1	Pass
02	Junior Suite 37	Category 3	100	0.2	4	1	Pass
02	Junior Suite 38	Category 3	100	0.1	3	1	Pass
02	Junior Suite 39	Category 3	100	0.1	3	1	Pass
02	Junior Suite 4	Category 3	100	0.4	14	3	Pass
02	Junior Suite 6	Category 3	100	0.4	14	3	Pass
02	Junior Suite 7	Category 3	100	0.4	15	3	Pass
02	Junior Suite 8	Category 3	100	0.4	15	3	Pass
03	1 Bed Suite 1_Bedroom	Category 3	100	0.4	10	2	Pass
03	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.7	15	3	Pass
03	Circulation	Category 2	100	0.7	26	4	Pass
03	Circulation	Category 3	100	0.6	11	2	Pass
03	Circulation	Category 3	100	0.6	13	2	Pass

03	Circulation	Category 3	100	0.7	15	2	Pass
03	Circulation	Category 3	100	0.5	9	2	Pass
03	Circulation	Category 3	100	0.6	14	2	Pass
03	Circulation	Category 3	100	0.5	9	2	Pass
03	Junior Suite 5	Category 3	100	0.4	14	3	Pass
03	Junior Suite 9	Category 3	100	0.4	15	3	Pass
03	Junior Suite 10	Category 3	100	0.5	23	4	Pass
03	Junior Suite 11	Category 3	100	0.5	26	4	Pass
03	Junior Suite 12	Category 3	100	0.3	13	2	Pass
03	Junior Suite 12	Category 3	100	0.4	14	2	Pass
03	Junior Suite 13	Category 2	100	0.5	16	2	Pass
03	Junior Suite 14	Category 2	100	0.5	16	2	Pass
03	Junior Suite 15	Category 2	100	0.5	16	2	Pass
03	Junior Suite 16	Category 2	100	0.5	16	2	Pass
03	Junior Suite 17	Category 2	100	0.5	16	2	Pass
03	Junior Suite 18	Category 2	100	0.5	16	2	Pass
03	Junior Suite 19	Category 2	100	0.5	15	2	Pass
03	Junior Suite 2	Category 3	100	0.4	14	3	Pass
03	Junior Suite 20	Category 2	100	0.5	16	2	Pass
03	Junior Suite 21	Category 2	100	0.5	18	3	Pass
03	Junior Suite 22	Category 3	100	0.1	4	1	Pass
03	Junior Suite 23	Category 3	100	0.1	3	1	Pass
03	Junior Suite 24	Category 3	100	0.1	3	1	Pass
03	Junior Suite 25	Category 3	100	0	0	0	Pass
03	Junior Suite 26	Category 3	100	0.4	12	2	Pass
03	Junior Suite 26	Category 3	100	0.4	12	2	Pass
03	Junior Suite 26	Category 3	100	0.4	11	2	Pass
03	Junior Suite 27	Category 3	100	0.4	10	2	Pass
03	Junior Suite 27	Category 3	100	0.4	9	2	Pass
03	Junior Suite 27	Category 3	100	0.4	9	2	Pass
03	Junior Suite 3	Category 3	100	0.4	14	3	Pass
03	Junior Suite 30	Category 3	100	0.4	10	2	Pass
03	Junior Suite 31	Category 3	100	0.4	13	2	Pass
03	Junior Suite 32	Category 3	100	0.4	14	2	Pass
03	Junior Suite 32	Category 3	100	0.5	18	2	Pass
03	Junior Suite 32	Category 3	100	0.5	19	3	Pass
03	Junior Suite 33	Category 3	100	0.3	5	1	Pass
03	Junior Suite 34	Category 3	100	0.1	2	1	Pass
03	Junior Suite 35	Category 3	100	0.2	4	1	Pass
03	Junior Suite 36	Category 3	100	0.2	4	1	Pass
03	Junior Suite 37	Category 3	100	0.2	4	1	Pass
03	Junior Suite 38	Category 3	100	0.2	4	1	Pass
03	Junior Suite 39	Category 3	100	0.1	3	1	Pass
03	Junior Suite 4	Category 3	100	0.4	14	3	Pass
03	Junior Suite 6	Category 3	100	0.4	14	3	Pass
03	Junior Suite 7	Category 3	100	0.4	15	3	Pass
03	Junior Suite 8	Category 3	100	0.4	15	3	Pass
04	1 Bed Suite 1_Bedroom	Category 3	100	0.4	12	3	Pass
04	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.8	15	3	Pass
04	1 Bed Suite 23_Living/Kitchen	Category 3	100	0.9	20	3	Pass
04	1 Bed Suite 31_Bedroom	Category 3	100	0.5	19	3	Pass
04	Acc Suite 24	Category 3	100	0.2	4	1	Pass
04	Acc Suite 25	Category 3	100	0.2	4	1	Pass
04	Circulation	Category 2	100	0.7	26	4	Pass
04	Circulation	Category 3	100	0.5	8	1	Pass
04	Circulation	Category 3	100	0.6	15	2	Pass
04	Circulation	Category 3	100	0.7	15	2	Pass
04	Circulation	Category 3	100	0.6	13	2	Pass
04	Circulation	Category 3	100	0.6	11	2	Pass
04	Circulation	Category 3	100	0.5	11	2	Pass
04	Junior Suite 10	Category 3	100	0.5	23	4	Pass
04	Junior Suite 11	Category 3	100	0.5	27	4	Pass
04	Junior Suite 12	Category 3	100	0.3	10	1	Pass
04	Junior Suite 13	Category 2	100	0.5	16	2	Pass
04	Junior Suite 14	Category 2	100	0.5	16	2	Pass
04	Junior Suite 15	Category 2	100	0.5	16	2	Pass
04	Junior Suite 16	Category 2	100	0.5	16	2	Pass
04	Junior Suite 17	Category 2	100	0.5	16	2	Pass
04	Junior Suite 18	Category 2	100	0.5	16	2	Pass
04	Junior Suite 19	Category 2	100	0.5	16	2	Pass
04	Junior Suite 2	Category 3	100	0.4	12	2	Pass
04	Junior Suite 20	Category 2	100	0.5	17	3	Pass
04	Junior Suite 21	Category 2	100	0.5	23	3	Pass
04	Junior Suite 22	Category 3	100	0.3	9	2	Pass
04	Junior Suite 22	Category 3	100	0.3	6	1	Pass
04	Junior Suite 23	Category 3	100	0.2	4	1	Pass
04	Junior Suite 26	Category 3	100	0.4	12	2	Pass

04	Junior Suite 27	Category 3	100	0.4	13	2	Pass
04	Junior Suite 28	Category 3	100	0.4	13	2	Pass
04	Junior Suite 29	Category 3	100	0.4	13	2	Pass
04	Junior Suite 3	Category 3	100	0.4	14	3	Pass
04	Junior Suite 30	Category 3	100	0.4	14	2	Pass
04	Junior Suite 32	Category 3	100	0.2	4	1	Pass
04	Junior Suite 33	Category 3	100	0.1	3	1	Pass
04	Junior Suite 34	Category 3	100	0.2	4	1	Pass
04	Junior Suite 35	Category 3	100	0.2	4	1	Pass
04	Junior Suite 36	Category 3	100	0.2	4	1	Pass
04	Junior Suite 37	Category 3	100	0.2	4	1	Pass
04	Junior Suite 38	Category 3	100	0.1	3	1	Pass
04	Junior Suite 4	Category 3	100	0.4	14	3	Pass
04	Junior Suite 5	Category 3	100	0.4	14	3	Pass
04	Junior Suite 6	Category 3	100	0.4	14	3	Pass
04	Junior Suite 7	Category 3	100	0.4	15	3	Pass
04	Junior Suite 8	Category 3	100	0.4	15	3	Pass
04	Junior Suite 9	Category 3	100	0.4	16	4	Pass
05	1 Bed Suite 1_Bedroom	Category 3	100	0.4	14	3	Pass
05	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.8	17	3	Pass
05	1 Bed Suite 23_Living/Kitchen	Category 3	100	0.9	20	3	Pass
05	1 Bed Suite 31_Bedroom	Category 3	100	0.5	19	3	Pass
05	Acc Suite 24	Category 3	100	0.3	6	1	Pass
05	Acc Suite 25	Category 3	100	0.2	6	1	Pass
05	Circulation	Category 2	100	0.7	26	4	Pass
05	Circulation	Category 3	100	0.7	16	2	Pass
05	Circulation	Category 3	100	0.6	13	2	Pass
05	Circulation	Category 3	100	0.6	13	2	Pass
05	Circulation	Category 3	100	0.5	11	2	Pass
05	Circulation	Category 3	100	0.6	15	2	Pass
05	Circulation	Category 3	100	0.6	13	2	Pass
05	Junior Suite 10	Category 3	100	0.5	23	4	Pass
05	Junior Suite 11	Category 3	100	0.5	28	4	Pass
05	Junior Suite 12	Category 3	100	0.3	10	1	Pass
05	Junior Suite 13	Category 2	100	0.5	16	2	Pass
05	Junior Suite 14	Category 2	100	0.5	16	2	Pass
05	Junior Suite 15	Category 2	100	0.5	17	3	Pass
05	Junior Suite 16	Category 2	100	0.5	17	3	Pass
05	Junior Suite 17	Category 2	100	0.5	17	3	Pass
05	Junior Suite 18	Category 2	100	0.5	16	2	Pass
05	Junior Suite 19	Category 2	100	0.5	16	2	Pass
05	Junior Suite 2	Category 3	100	0.4	12	2	Pass
05	Junior Suite 20	Category 2	100	0.5	19	3	Pass
05	Junior Suite 21	Category 2	100	0.5	23	3	Pass
05	Junior Suite 22	Category 3	100	0.3	7	2	Pass
05	Junior Suite 22	Category 3	100	0.3	9	2	Pass
05	Junior Suite 23	Category 3	100	0.2	5	1	Pass
05	Junior Suite 26	Category 3	100	0.4	13	2	Pass
05	Junior Suite 27	Category 3	100	0.4	15	2	Pass
05	Junior Suite 28	Category 3	100	0.4	15	2	Pass
05	Junior Suite 29	Category 3	100	0.4	15	2	Pass
05	Junior Suite 3	Category 3	100	0.4	14	3	Pass
05	Junior Suite 30	Category 3	100	0.4	15	2	Pass
05	Junior Suite 32	Category 3	100	0.3	8	2	Pass
05	Junior Suite 33	Category 3	100	0.2	5	2	Pass
05	Junior Suite 34	Category 3	100	0.2	6	2	Pass
05	Junior Suite 35	Category 3	100	0.2	5	1	Pass
05	Junior Suite 36	Category 3	100	0.2	4	1	Pass
05	Junior Suite 37	Category 3	100	0.2	4	1	Pass
05	Junior Suite 38	Category 3	100	0.2	4	1	Pass
05	Junior Suite 4	Category 3	100	0.4	14	3	Pass
05	Junior Suite 5	Category 3	100	0.4	14	3	Pass
05	Junior Suite 6	Category 3	100	0.4	14	3	Pass
05	Junior Suite 7	Category 3	100	0.4	15	3	Pass
05	Junior Suite 8	Category 3	100	0.4	15	3	Pass
05	Junior Suite 9	Category 3	100	0.4	16	4	Pass
06	1 Bed Suite 1_Bedroom	Category 3	100	0.5	17	3	Pass
06	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.8	17	3	Pass
06	Acc Suite 13	Category 2	100	0.4	16	2	Pass
06	Acc Suite 14	Category 2	100	0.5	16	2	Pass
06	Acc Suite 23	Category 3	100	0.3	6	1	Pass
06	Acc Suite 24	Category 3	100	0.3	7	1	Pass
06	Circulation	Category 2	100	0.7	26	4	Pass
06	Circulation	Category 3	100	0.5	12	2	Pass
06	Circulation	Category 3	100	0.7	15	2	Pass
06	Circulation	Category 3	100	0.6	15	2	Pass
06	Circulation	Category 3	100	0.6	13	2	Pass

06	Circulation	Category 3	100	0.7	17	2	Pass
06	Circulation	Category 3	100	0.7	16	2	Pass
06	Circulation	Category 3	100	0.7	15	2	Pass
06	Junior Suite 10	Category 3	100	0.5	23	4	Pass
06	Junior Suite 11	Category 3	100	0.6	27	4	Pass
06	Junior Suite 12	Category 3	100	0.3	10	1	Pass
06	Junior Suite 15	Category 2	100	0.5	16	2	Pass
06	Junior Suite 16	Category 2	100	0.5	16	2	Pass
06	Junior Suite 17	Category 2	100	0.5	16	2	Pass
06	Junior Suite 18	Category 2	100	0.5	16	2	Pass
06	Junior Suite 19	Category 2	100	0.5	19	3	Pass
06	Junior Suite 2	Category 3	100	0.4	14	3	Pass
06	Junior Suite 20	Category 2	100	0.5	24	3	Pass
06	Junior Suite 21	Category 3	100	0.3	7	2	Pass
06	Junior Suite 22	Category 3	100	0.3	6	1	Pass
06	Junior Suite 25	Category 3	100	0.5	16	2	Pass
06	Junior Suite 26	Category 3	100	0.5	17	2	Pass
06	Junior Suite 27	Category 3	100	0.5	17	2	Pass
06	Junior Suite 28	Category 3	100	0.5	17	2	Pass
06	Junior Suite 29	Category 3	100	0.5	17	2	Pass
06	Junior Suite 3	Category 3	100	0.4	14	3	Pass
06	Junior Suite 30	Category 3	100	0.5	16	2	Pass
06	Junior Suite 31	Category 3	100	0.4	13	3	Pass
06	Junior Suite 32	Category 3	100	0.3	8	2	Pass
06	Junior Suite 33	Category 3	100	0.3	10	2	Pass
06	Junior Suite 34	Category 3	100	0.3	10	2	Pass
06	Junior Suite 35	Category 3	100	0.3	9	2	Pass
06	Junior Suite 36	Category 3	100	0.3	9	2	Pass
06	Junior Suite 37	Category 3	100	0.3	6	1	Pass
06	Junior Suite 4	Category 3	100	0.4	14	3	Pass
06	Junior Suite 5	Category 3	100	0.4	14	3	Pass
06	Junior Suite 6	Category 3	100	0.4	14	3	Pass
06	Junior Suite 7	Category 3	100	0.4	15	3	Pass
06	Junior Suite 8	Category 3	100	0.4	16	4	Pass
06	Junior Suite 9	Category 3	100	0.4	19	4	Pass
07	1 Bed Suite 1_Bedroom	Category 3	100	0.5	20	4	Pass
07	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.8	21	3	Pass
07	Acc Suite 14	Category 3	100	0.3	9	2	Pass
07	Acc Suite 15	Category 3	100	0.2	5	1	Pass
07	Circulation	Category 3	100	0.7	15	2	Pass
07	Circulation	Category 3	100	0.7	14	2	Pass
07	Circulation	Category 3	100	0.8	23	3	Pass
07	Junior Suite 10	Category 3	100	0.8	24	4	Pass
07	Junior Suite 11	Category 3	100	0.8	29	4	Pass
07	Junior Suite 12	Category 3	100	0.5	20	3	Pass
07	Junior Suite 13	Category 3	100	0.3	10	2	Pass
07	Junior Suite 2	Category 3	100	0.4	14	3	Pass
07	Junior Suite 3	Category 3	100	0.4	14	3	Pass
07	Junior Suite 4	Category 3	100	0.4	14	3	Pass
07	Junior Suite 5	Category 3	100	0.4	14	3	Pass
07	Junior Suite 6	Category 3	100	0.4	14	3	Pass
07	Junior Suite 7	Category 3	100	0.4	15	3	Pass
07	Junior Suite 8	Category 3	100	0.4	17	3	Pass
07	Junior Suite 9	Category 3	100	0.5	20	4	Pass
08	1 Bed Suite 1_Bedroom	Category 3	100	0.6	28	5	Fail
08	1 Bed Suite 1_Living/Kitchen	Category 3	100	1.2	27	4	Pass
08	Acc Suite 14	Category 3	100	0.4	18	3	Pass
08	Acc Suite 15	Category 3	100	0.4	17	3	Pass
08	Circulation	Category 3	100	0.8	24	3	Pass
08	Circulation	Category 3	100	1.4	32	3	Pass
08	Circulation	Category 3	100	1	25	3	Pass
08	Junior Suite 10	Category 3	100	2	40	7	Fail
08	Junior Suite 11	Category 3	100	2.2	46	7	Fail
08	Junior Suite 12	Category 3	100	0.5	27	4	Pass
08	Junior Suite 13	Category 3	100	0.4	17	3	Pass
08	Junior Suite 2	Category 3	100	1.3	34	6	Fail
08	Junior Suite 3	Category 3	100	1.1	30	5	Fail
08	Junior Suite 4	Category 3	100	1.1	29	5	Fail
08	Junior Suite 5	Category 3	100	1.1	29	5	Fail
08	Junior Suite 6	Category 3	100	1.1	29	5	Fail
08	Junior Suite 7	Category 3	100	1.2	32	6	Fail
08	Junior Suite 8	Category 3	100	1.3	33	6	Fail
08	Junior Suite 9	Category 3	100	1.5	35	6	Fail

Appendix A-8b

CIBSE TM52 calculation results: Scenario 2



INVESTORS
IN PEOPLE

Scenario 2

Occupied rooms passing the assessment	359
Occupied rooms failing the assessment	7
Unoccupied rooms	5
Total rooms modelled	371

Weather file:	Manchester_DSY3_2020High50_epw
Days data	365 (01-Jan to 31-Dec)
Days (summer)	153 (01-May to 30-Sep)
Data OK?	OK - Full summer

Floor	Room Name	Assessment category	Occupied days (%)	Criteria 1 (%Hrs Top-Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. ΔT)	Result
00	2 Bed Suite 06 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	2 Bed Suite 06 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 01(L)_Bedroom	Category 2	100	0.2	5	1	Pass
00	3 Bed Suite 01(L)_Living/Kitchen	Category 2	100	0	0	0	Pass
00	3 Bed Suite 02 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 2 (L)_Bedroom	Category 2	100	0.2	7	1	Pass
00	3 Bed Suite 3 (L)_Bedroom	Category 2	100	0.2	6	1	Pass
00	3 Bed Suite 3 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 4 (L)_Bedroom	Category 2	100	0.1	3	1	Pass
00	3 Bed Suite 4 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 5 (L)_Bedroom	Category 2	100	0.1	2	1	Pass
00	3 Bed Suite 5 (L)_Hall	Category 2	0	0	0	0	N/A
00	Business Lounge	Category 3	100	0	0	0	Pass
00	Business Lounge (individual space)	Category 3	100	0	0	0	Pass
00	Business Lounge (individual space)	Category 3	100	0	0	0	Pass
00	Circulation	Category 2	100	0	0	0	Pass
00	Circulation	Category 2	100	0	0	0	Pass
00	Circulation	Category 3	100	0.1	2	1	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	3.5	9	1	Fail
00	Commercial	Category 3	100	0	0	0	Pass
00	Gym /Yoga Studio	Category 3	100	0	0	0	Pass
00	Junior Suite 10	Category 2	100	0	0	0	Pass
00	Junior Suite 7	Category 2	100	0	0	0	Pass
00	Junior Suite 8	Category 2	100	0	0	0	Pass
00	Junior Suite 9	Category 2	100	0	0	0	Pass
00	Management	Category 3	100	0	0	0	Pass
00	Meeting Room	Category 3	100	0	0	0	Pass
00	Podcast Room	Category 3	100	0	0	0	Pass
00	Reception	Category 3	100	0	0	0	Pass
00	Social Lounge	Category 3	100	0	0	0	Pass
00	Wellfare	Category 3	100	0	0	0	Pass
00	Wellfare	Category 3	100	0	0	0	Pass
01	1 Bed Suite 1_Bedroom	Category 3	100	0.1	1	1	Pass
01	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.7	3	1	Pass
01	1 Bed Suite 23_Bedroom	Category 3	100	1.2	12	2	Pass
01	1 Bed Suite 23_Living/Kitchen	Category 3	100	2.3	11	2	Pass
01	2 Bed Suite 2 (U)_Bedroom	Category 2	100	0	1	1	Pass
01	2 Bed Suite 2 (U)_Living/Kitchen	Category 2	100	0.5	5	1	Pass
01	2 Bed Suite 3 (U)_Bedroom	Category 2	100	0	1	1	Pass
01	2 Bed Suite 3 (U)_Living/Kitchen	Category 2	100	0.4	4	1	Pass
01	2 Bed Suite 4 (U)_Bedroom	Category 2	100	0	1	1	Pass
01	2 Bed Suite 4 (U)_Living/Kitchen	Category 2	100	0.3	3	1	Pass
01	2 Bed Suite 6 (U)_Bedroom	Category 2	100	0.2	5	1	Pass
01	2 Bed Suite 6 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	3 Bed Suite 1 (U)_Bedroom	Category 2	100	0.3	5	1	Pass
01	3 Bed Suite 1 (U)_Bedroom	Category 2	100	0.1	3	1	Pass
01	3 Bed Suite 1 (U)_Living/Kitchen	Category 2	100	0.4	4	1	Pass
01	3 Bed Suite 5 (U)_Bedroom	Category 2	100	0	1	1	Pass
01	3 Bed Suite 5 (U)_Bedroom	Category 2	100	0	1	1	Pass
01	3 Bed Suite 5 (U)_Living/Kitchen	Category 2	100	0.3	2	1	Pass
01	Circulation	Category 3	100	1.5	9	1	Pass
01	Circulation	Category 3	100	0.3	4	1	Pass
01	Circulation	Category 3	100	0.7	6	1	Pass
01	Circulation	Category 3	100	1.5	10	2	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Junior Suite 10	Category 3	100	3.2	21	5	Fail
01	Junior Suite 11	Category 3	100	2.3	17	3	Pass
01	Junior Suite 12	Category 3	100	0.1	3	1	Pass
01	Junior Suite 13	Category 3	100	0	0	0	Pass
01	Junior Suite 14	Category 3	100	0	0	0	Pass
01	Junior Suite 15	Category 3	100	0	0	0	Pass
01	Junior Suite 16	Category 3	100	0	0	0	Pass
01	Junior Suite 17	Category 3	100	0	0	0	Pass

01	Junior Suite 18	Category 3	100	0	0	0	Pass
01	Junior Suite 19	Category 3	100	0	0	0	Pass
01	Junior Suite 2	Category 3	100	1.1	8	2	Pass
01	Junior Suite 20	Category 3	100	0	1	1	Pass
01	Junior Suite 21	Category 3	100	0	1	1	Pass
01	Junior Suite 22	Category 3	100	0.1	2	1	Pass
01	Junior Suite 24	Category 3	100	0.6	6	1	Pass
01	Junior Suite 25	Category 3	100	0	0	0	Pass
01	Junior Suite 26	Category 3	100	0	0	0	Pass
01	Junior Suite 27	Category 3	100	0	0	0	Pass
01	Junior Suite 28	Category 3	100	0	0	0	Pass
01	Junior Suite 29	Category 3	100	0	0	0	Pass
01	Junior Suite 3	Category 3	100	1.7	13	3	Pass
01	Junior Suite 30	Category 3	100	0	0	0	Pass
01	Junior Suite 4	Category 3	100	2	13	3	Pass
01	Junior Suite 5	Category 3	100	2.2	13	3	Pass
01	Junior Suite 6	Category 3	100	2.2	13	3	Pass
01	Junior Suite 7	Category 3	100	1.9	12	3	Pass
01	Junior Suite 8	Category 3	100	1.9	12	3	Pass
01	Junior Suite 9	Category 3	100	2.3	13	3	Pass
02	1 Bed Suite 1_Bedroom	Category 3	100	0.1	2	1	Pass
02	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.9	5	1	Pass
02	Circulation	Category 2	100	1	6	1	Pass
02	Circulation	Category 3	100	0.5	6	1	Pass
02	Circulation	Category 3	100	0.9	8	1	Pass
02	Circulation	Category 3	100	1	8	1	Pass
02	Circulation	Category 3	100	1.4	9	1	Pass
02	Circulation	Category 3	100	0.7	7	1	Pass
02	Circulation	Category 3	100	0.2	3	1	Pass
02	Junior Suite 5	Category 3	100	0.5	4	1	Pass
02	Junior Suite 9	Category 3	100	1	8	2	Pass
02	Junior Suite 10	Category 3	100	1.3	10	2	Pass
02	Junior Suite 11	Category 3	100	1.6	12	2	Pass
02	Junior Suite 12	Category 3	100	0.6	9	1	Pass
02	Junior Suite 12	Category 3	100	1.1	12	2	Pass
02	Junior Suite 13	Category 2	100	0.4	7	1	Pass
02	Junior Suite 14	Category 2	100	0.4	7	1	Pass
02	Junior Suite 15	Category 2	100	0.2	6	1	Pass
02	Junior Suite 16	Category 2	100	0.1	5	1	Pass
02	Junior Suite 17	Category 2	100	0.1	4	1	Pass
02	Junior Suite 18	Category 2	100	0	1	1	Pass
02	Junior Suite 19	Category 2	100	0	1	1	Pass
02	Junior Suite 2	Category 3	100	0.4	4	1	Pass
02	Junior Suite 20	Category 2	100	0.1	3	1	Pass
02	Junior Suite 21	Category 2	100	0.2	6	1	Pass
02	Junior Suite 22	Category 3	100	0	0	0	Pass
02	Junior Suite 23	Category 3	100	0	0	0	Pass
02	Junior Suite 24	Category 3	100	0	0	0	Pass
02	Junior Suite 25	Category 3	100	0	0	0	Pass
02	Junior Suite 26	Category 3	100	0.6	7	2	Pass
02	Junior Suite 26	Category 3	100	0.5	6	2	Pass
02	Junior Suite 26	Category 3	100	0	1	1	Pass
02	Junior Suite 27	Category 3	100	0	0	0	Pass
02	Junior Suite 27	Category 3	100	0	0	0	Pass
02	Junior Suite 27	Category 3	100	0	0	0	Pass
02	Junior Suite 27	Category 3	100	0	0	0	Pass
02	Junior Suite 3	Category 3	100	0.5	4	1	Pass
02	Junior Suite 30	Category 3	100	0	0	0	Pass
02	Junior Suite 31	Category 3	100	0	1	1	Pass
02	Junior Suite 32	Category 3	100	0.3	7	1	Pass
02	Junior Suite 32	Category 3	100	0.7	10	2	Pass
02	Junior Suite 32	Category 3	100	0.2	4	1	Pass
02	Junior Suite 33	Category 3	100	0	0	0	Pass
02	Junior Suite 34	Category 3	100	0	0	0	Pass
02	Junior Suite 35	Category 3	100	0	0	0	Pass
02	Junior Suite 36	Category 3	100	0	0	0	Pass
02	Junior Suite 37	Category 3	100	0	0	0	Pass
02	Junior Suite 38	Category 3	100	0	0	0	Pass
02	Junior Suite 39	Category 3	100	0	0	0	Pass
02	Junior Suite 4	Category 3	100	0.5	4	1	Pass
02	Junior Suite 6	Category 3	100	0.5	4	1	Pass
02	Junior Suite 7	Category 3	100	0.7	7	2	Pass
02	Junior Suite 8	Category 3	100	0.8	7	2	Pass
03	1 Bed Suite 1_Bedroom	Category 3	100	0.2	3	1	Pass
03	1 Bed Suite 1_Living/Kitchen	Category 3	100	1.1	7	2	Pass
03	Circulation	Category 2	100	1.1	6	1	Pass
03	Circulation	Category 3	100	0.9	8	1	Pass
03	Circulation	Category 3	100	0.9	8	1	Pass

03	Circulation	Category 3	100	1.5	10	2	Pass
03	Circulation	Category 3	100	0.4	5	1	Pass
03	Circulation	Category 3	100	1.1	9	1	Pass
03	Circulation	Category 3	100	0.3	4	1	Pass
03	Junior Suite 5	Category 3	100	0.4	4	1	Pass
03	Junior Suite 9	Category 3	100	0.9	8	2	Pass
03	Junior Suite 10	Category 3	100	1.3	10	2	Pass
03	Junior Suite 11	Category 3	100	1.6	13	2	Pass
03	Junior Suite 12	Category 3	100	0.8	10	1	Pass
03	Junior Suite 12	Category 3	100	1.3	13	2	Pass
03	Junior Suite 13	Category 2	100	0.2	6	1	Pass
03	Junior Suite 14	Category 2	100	0.2	6	1	Pass
03	Junior Suite 15	Category 2	100	0.2	6	1	Pass
03	Junior Suite 16	Category 2	100	0.2	6	1	Pass
03	Junior Suite 17	Category 2	100	0.2	6	1	Pass
03	Junior Suite 18	Category 2	100	0.1	4	1	Pass
03	Junior Suite 19	Category 2	100	0.1	3	1	Pass
03	Junior Suite 2	Category 3	100	0.3	4	1	Pass
03	Junior Suite 20	Category 2	100	0.2	6	1	Pass
03	Junior Suite 21	Category 2	100	0.4	6	1	Pass
03	Junior Suite 22	Category 3	100	0	0	0	Pass
03	Junior Suite 23	Category 3	100	0	0	0	Pass
03	Junior Suite 24	Category 3	100	0	0	0	Pass
03	Junior Suite 25	Category 3	100	0	0	0	Pass
03	Junior Suite 26	Category 3	100	0.7	8	2	Pass
03	Junior Suite 26	Category 3	100	0.7	8	2	Pass
03	Junior Suite 26	Category 3	100	0	1	1	Pass
03	Junior Suite 27	Category 3	100	0	1	1	Pass
03	Junior Suite 27	Category 3	100	0	1	1	Pass
03	Junior Suite 27	Category 3	100	0	1	1	Pass
03	Junior Suite 3	Category 3	100	0.4	4	1	Pass
03	Junior Suite 30	Category 3	100	0	1	1	Pass
03	Junior Suite 31	Category 3	100	0	1	1	Pass
03	Junior Suite 32	Category 3	100	0.2	5	1	Pass
03	Junior Suite 32	Category 3	100	0.3	7	1	Pass
03	Junior Suite 32	Category 3	100	0.8	10	2	Pass
03	Junior Suite 33	Category 3	100	0	0	0	Pass
03	Junior Suite 34	Category 3	100	0	0	0	Pass
03	Junior Suite 35	Category 3	100	0	0	0	Pass
03	Junior Suite 36	Category 3	100	0	0	0	Pass
03	Junior Suite 37	Category 3	100	0	0	0	Pass
03	Junior Suite 38	Category 3	100	0	0	0	Pass
03	Junior Suite 39	Category 3	100	0	0	0	Pass
03	Junior Suite 4	Category 3	100	0.4	4	1	Pass
03	Junior Suite 6	Category 3	100	0.4	4	1	Pass
03	Junior Suite 7	Category 3	100	0.6	6	2	Pass
03	Junior Suite 8	Category 3	100	0.7	7	2	Pass
04	1 Bed Suite 1_Bedroom	Category 3	100	0.2	4	1	Pass
04	1 Bed Suite 1_Living/Kitchen	Category 3	100	1.1	7	2	Pass
04	1 Bed Suite 23_Living/Kitchen	Category 3	100	1	7	1	Pass
04	1 Bed Suite 31_Bedroom	Category 3	100	0.3	7	1	Pass
04	Acc Suite 24	Category 3	100	0	0	0	Pass
04	Acc Suite 25	Category 3	100	0	0	0	Pass
04	Circulation	Category 2	100	1.3	7	2	Pass
04	Circulation	Category 3	100	0.5	5	1	Pass
04	Circulation	Category 3	100	1.4	9	1	Pass
04	Circulation	Category 3	100	1.2	9	1	Pass
04	Circulation	Category 3	100	0.8	8	1	Pass
04	Circulation	Category 3	100	1	8	1	Pass
04	Circulation	Category 3	100	0.4	5	1	Pass
04	Junior Suite 10	Category 3	100	1.3	10	2	Pass
04	Junior Suite 11	Category 3	100	1.6	13	2	Pass
04	Junior Suite 12	Category 3	100	0.4	8	1	Pass
04	Junior Suite 13	Category 2	100	0.2	6	1	Pass
04	Junior Suite 14	Category 2	100	0.2	6	1	Pass
04	Junior Suite 15	Category 2	100	0.2	6	1	Pass
04	Junior Suite 16	Category 2	100	0.2	6	1	Pass
04	Junior Suite 17	Category 2	100	0.2	6	1	Pass
04	Junior Suite 18	Category 2	100	0.2	6	1	Pass
04	Junior Suite 19	Category 2	100	0.2	6	1	Pass
04	Junior Suite 2	Category 3	100	0.3	4	1	Pass
04	Junior Suite 20	Category 2	100	0.2	6	1	Pass
04	Junior Suite 21	Category 2	100	0.5	8	1	Pass
04	Junior Suite 22	Category 3	100	0.2	3	1	Pass
04	Junior Suite 22	Category 3	100	0	0	0	Pass
04	Junior Suite 23	Category 3	100	0	0	0	Pass
04	Junior Suite 26	Category 3	100	0	1	1	Pass

04	Junior Suite 27	Category 3	100	0	1	1	Pass
04	Junior Suite 28	Category 3	100	0.1	3	1	Pass
04	Junior Suite 29	Category 3	100	0.1	2	1	Pass
04	Junior Suite 3	Category 3	100	0.4	4	1	Pass
04	Junior Suite 30	Category 3	100	0.1	5	1	Pass
04	Junior Suite 32	Category 3	100	0.1	2	1	Pass
04	Junior Suite 33	Category 3	100	0	1	1	Pass
04	Junior Suite 34	Category 3	100	0	0	0	Pass
04	Junior Suite 35	Category 3	100	0	0	0	Pass
04	Junior Suite 36	Category 3	100	0	0	0	Pass
04	Junior Suite 37	Category 3	100	0	0	0	Pass
04	Junior Suite 38	Category 3	100	0	0	0	Pass
04	Junior Suite 4	Category 3	100	0.4	4	1	Pass
04	Junior Suite 5	Category 3	100	0.4	4	1	Pass
04	Junior Suite 6	Category 3	100	0.4	4	1	Pass
04	Junior Suite 7	Category 3	100	0.7	7	2	Pass
04	Junior Suite 8	Category 3	100	0.8	8	2	Pass
04	Junior Suite 9	Category 3	100	1	8	2	Pass
05	1 Bed Suite 1_Bedroom	Category 3	100	0.4	5	1	Pass
05	1 Bed Suite 1_Living/Kitchen	Category 3	100	1.3	7	2	Pass
05	1 Bed Suite 23_Living/Kitchen	Category 3	100	1.1	8	2	Pass
05	1 Bed Suite 31_Bedroom	Category 3	100	0.4	8	1	Pass
05	Acc Suite 24	Category 3	100	0	0	0	Pass
05	Acc Suite 25	Category 3	100	0	0	0	Pass
05	Circulation	Category 2	100	1.4	8	2	Pass
05	Circulation	Category 3	100	1.4	10	2	Pass
05	Circulation	Category 3	100	1.2	8	1	Pass
05	Circulation	Category 3	100	0.8	8	1	Pass
05	Circulation	Category 3	100	0.5	6	1	Pass
05	Circulation	Category 3	100	1.4	9	1	Pass
05	Circulation	Category 3	100	0.6	6	1	Pass
05	Junior Suite 10	Category 3	100	1.3	10	2	Pass
05	Junior Suite 11	Category 3	100	1.6	13	2	Pass
05	Junior Suite 12	Category 3	100	0.5	8	1	Pass
05	Junior Suite 13	Category 2	100	0.2	6	1	Pass
05	Junior Suite 14	Category 2	100	0.2	6	1	Pass
05	Junior Suite 15	Category 2	100	0.2	6	1	Pass
05	Junior Suite 16	Category 2	100	0.2	6	1	Pass
05	Junior Suite 17	Category 2	100	0.2	6	1	Pass
05	Junior Suite 18	Category 2	100	0.2	6	1	Pass
05	Junior Suite 19	Category 2	100	0.2	6	1	Pass
05	Junior Suite 2	Category 3	100	0.3	4	1	Pass
05	Junior Suite 20	Category 2	100	0.2	6	1	Pass
05	Junior Suite 21	Category 2	100	0.7	8	1	Pass
05	Junior Suite 22	Category 3	100	0	0	0	Pass
05	Junior Suite 22	Category 3	100	0.2	3	1	Pass
05	Junior Suite 23	Category 3	100	0	0	0	Pass
05	Junior Suite 26	Category 3	100	0	1	1	Pass
05	Junior Suite 27	Category 3	100	0.2	6	1	Pass
05	Junior Suite 28	Category 3	100	0.2	6	1	Pass
05	Junior Suite 29	Category 3	100	0.2	6	1	Pass
05	Junior Suite 3	Category 3	100	0.4	4	1	Pass
05	Junior Suite 30	Category 3	100	0.2	6	1	Pass
05	Junior Suite 32	Category 3	100	0.1	2	1	Pass
05	Junior Suite 33	Category 3	100	0.1	1	1	Pass
05	Junior Suite 34	Category 3	100	0	0	0	Pass
05	Junior Suite 35	Category 3	100	0	0	0	Pass
05	Junior Suite 36	Category 3	100	0	0	0	Pass
05	Junior Suite 37	Category 3	100	0	0	0	Pass
05	Junior Suite 38	Category 3	100	0	0	0	Pass
05	Junior Suite 4	Category 3	100	0.4	4	1	Pass
05	Junior Suite 5	Category 3	100	0.4	4	1	Pass
05	Junior Suite 6	Category 3	100	0.4	4	1	Pass
05	Junior Suite 7	Category 3	100	0.7	7	2	Pass
05	Junior Suite 8	Category 3	100	0.8	8	2	Pass
05	Junior Suite 9	Category 3	100	1	9	2	Pass
06	1 Bed Suite 1_Bedroom	Category 3	100	0.6	6	2	Pass
06	1 Bed Suite 1_Living/Kitchen	Category 3	100	1.9	10	2	Pass
06	Acc Suite 13	Category 2	100	0.2	6	1	Pass
06	Acc Suite 14	Category 2	100	0.2	6	1	Pass
06	Acc Suite 23	Category 3	100	0	0	0	Pass
06	Acc Suite 24	Category 3	100	0	0	0	Pass
06	Circulation	Category 2	100	1.5	9	2	Pass
06	Circulation	Category 3	100	1.2	9	1	Pass
06	Circulation	Category 3	100	0.8	7	1	Pass
06	Circulation	Category 3	100	1.1	8	2	Pass
06	Circulation	Category 3	100	0.5	6	1	Pass

06	Circulation	Category 3	100	1.8	14	2	Pass
06	Circulation	Category 3	100	1.1	9	1	Pass
06	Circulation	Category 3	100	1.5	11	2	Pass
06	Junior Suite 10	Category 3	100	1.5	10	2	Pass
06	Junior Suite 11	Category 3	100	1.7	13	2	Pass
06	Junior Suite 12	Category 3	100	0.5	8	1	Pass
06	Junior Suite 15	Category 2	100	0.2	6	1	Pass
06	Junior Suite 16	Category 2	100	0.2	6	1	Pass
06	Junior Suite 17	Category 2	100	0.2	6	1	Pass
06	Junior Suite 18	Category 2	100	0.2	6	1	Pass
06	Junior Suite 19	Category 2	100	0.2	6	1	Pass
06	Junior Suite 2	Category 3	100	0.5	4	1	Pass
06	Junior Suite 20	Category 2	100	0.4	7	1	Pass
06	Junior Suite 21	Category 3	100	0	0	0	Pass
06	Junior Suite 22	Category 3	100	0	0	0	Pass
06	Junior Suite 25	Category 3	100	0.2	6	1	Pass
06	Junior Suite 26	Category 3	100	0.2	6	1	Pass
06	Junior Suite 27	Category 3	100	0.2	6	1	Pass
06	Junior Suite 28	Category 3	100	0.2	6	1	Pass
06	Junior Suite 29	Category 3	100	0.2	6	1	Pass
06	Junior Suite 3	Category 3	100	0.5	5	2	Pass
06	Junior Suite 30	Category 3	100	0.2	6	1	Pass
06	Junior Suite 31	Category 3	100	0.2	2	1	Pass
06	Junior Suite 32	Category 3	100	0.2	2	1	Pass
06	Junior Suite 33	Category 3	100	0.1	1	1	Pass
06	Junior Suite 34	Category 3	100	0	1	1	Pass
06	Junior Suite 35	Category 3	100	0.1	1	1	Pass
06	Junior Suite 36	Category 3	100	0	0	0	Pass
06	Junior Suite 37	Category 3	100	0	0	0	Pass
06	Junior Suite 4	Category 3	100	0.5	5	2	Pass
06	Junior Suite 5	Category 3	100	0.6	5	2	Pass
06	Junior Suite 6	Category 3	100	0.6	5	2	Pass
06	Junior Suite 7	Category 3	100	0.8	7	2	Pass
06	Junior Suite 8	Category 3	100	0.8	8	2	Pass
06	Junior Suite 9	Category 3	100	1	9	2	Pass
07	1 Bed Suite 1_Bedroom	Category 3	100	0.8	7	2	Pass
07	1 Bed Suite 1_Living/Kitchen	Category 3	100	2.1	10	2	Pass
07	Acc Suite 14	Category 3	100	0	0	0	Pass
07	Acc Suite 15	Category 3	100	0	0	0	Pass
07	Circulation	Category 3	100	1.4	9	1	Pass
07	Circulation	Category 3	100	1.6	12	2	Pass
07	Circulation	Category 3	100	2.3	15	2	Pass
07	Junior Suite 10	Category 3	100	1.7	11	3	Pass
07	Junior Suite 11	Category 3	100	2	19	3	Pass
07	Junior Suite 12	Category 3	100	0.6	8	1	Pass
07	Junior Suite 13	Category 3	100	0	1	1	Pass
07	Junior Suite 2	Category 3	100	0.5	5	2	Pass
07	Junior Suite 3	Category 3	100	0.7	7	2	Pass
07	Junior Suite 4	Category 3	100	0.6	7	2	Pass
07	Junior Suite 5	Category 3	100	0.7	7	2	Pass
07	Junior Suite 6	Category 3	100	0.7	7	2	Pass
07	Junior Suite 7	Category 3	100	0.9	8	2	Pass
07	Junior Suite 8	Category 3	100	0.9	8	2	Pass
07	Junior Suite 9	Category 3	100	1.1	9	2	Pass
08	1 Bed Suite 1_Bedroom	Category 3	100	1.2	8	2	Pass
08	1 Bed Suite 1_Living/Kitchen	Category 3	100	2.8	12	2	Pass
08	Acc Suite 14	Category 3	100	0.3	5	1	Pass
08	Acc Suite 15	Category 3	100	0.3	5	1	Pass
08	Circulation	Category 3	100	2.6	16	2	Pass
08	Circulation	Category 3	100	4.5	27	3	Fail
08	Circulation	Category 3	100	3.2	18	3	Fail
08	Junior Suite 10	Category 3	100	3.4	25	5	Fail
08	Junior Suite 11	Category 3	100	3.7	29	5	Fail
08	Junior Suite 12	Category 3	100	1.2	12	2	Pass
08	Junior Suite 13	Category 3	100	0.4	6	1	Pass
08	Junior Suite 2	Category 3	100	2.7	22	4	Pass
08	Junior Suite 3	Category 3	100	2.4	16	4	Pass
08	Junior Suite 4	Category 3	100	2.3	15	4	Pass
08	Junior Suite 5	Category 3	100	2.3	16	4	Pass
08	Junior Suite 6	Category 3	100	2.2	16	4	Pass
08	Junior Suite 7	Category 3	100	2.5	19	4	Pass
08	Junior Suite 8	Category 3	100	2.6	19	4	Pass
08	Junior Suite 9	Category 3	100	2.9	21	5	Fail

Appendix A-8c

CIBSE TM52 calculation results: Scenario 3



INVESTORS
IN PEOPLE

Scenario 3

Occupied rooms passing the assessment	364
Occupied rooms failing the assessment	2
Unoccupied rooms	5
Total rooms modelled	371

Weather file:	Manchester_DSY2_2020High50_epw
Days data	365 (01-Jan to 31-Dec)
Days (summer)	153 (01-May to 30-Sep)
Data OK?	OK - Full summer

Floor	Room Name	Assessment category	Occupied days (%)	Criteria 1 (%Hrs Top-Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. ΔT)	Result
00	2 Bed Suite 06 (L)_Bedroom	Category 2	100	0.3	9	2	Pass
00	2 Bed Suite 06 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 01(L)_Bedroom	Category 2	100	0.4	18	3	Pass
00	3 Bed Suite 01(L)_Living/Kitchen	Category 2	100	0.7	11	2	Pass
00	3 Bed Suite 02 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 2 (L)_Bedroom	Category 2	100	0.4	10	2	Pass
00	3 Bed Suite 3 (L)_Bedroom	Category 2	100	0.4	10	2	Pass
00	3 Bed Suite 3 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 4 (L)_Bedroom	Category 2	100	0.3	9	2	Pass
00	3 Bed Suite 4 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 5 (L)_Bedroom	Category 2	100	0.3	6	1	Pass
00	3 Bed Suite 5 (L)_Hall	Category 2	0	0	0	0	N/A
00	Business Lounge	Category 3	100	0	0	0	Pass
00	Business Lounge (individual space)	Category 3	100	0	0	0	Pass
00	Business Lounge (individual space)	Category 3	100	0	0	0	Pass
00	Circulation	Category 2	100	0.3	5	1	Pass
00	Circulation	Category 2	100	0.4	5	1	Pass
00	Circulation	Category 3	100	1.5	17	2	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Commercial	Category 3	100	0	0	0	Pass
00	Gym /Yoga Studio	Category 3	100	0	0	0	Pass
00	Junior Suite 10	Category 2	100	0.3	8	2	Pass
00	Junior Suite 7	Category 2	100	0.3	7	2	Pass
00	Junior Suite 8	Category 2	100	0.3	6	1	Pass
00	Junior Suite 9	Category 2	100	0.1	3	1	Pass
00	Management	Category 3	100	0	0	0	Pass
00	Meeting Room	Category 3	100	0	0	0	Pass
00	Podcast Room	Category 3	100	0	0	0	Pass
00	Reception	Category 3	100	0	0	0	Pass
00	Social Lounge	Category 3	100	0	0	0	Pass
00	Wellfare	Category 3	100	0	0	0	Pass
00	Wellfare	Category 3	100	0	0	0	Pass
01	1 Bed Suite 1_Bedroom	Category 3	100	0.2	5	2	Pass
01	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.6	9	2	Pass
01	1 Bed Suite 23_Bedroom	Category 3	100	0.1	3	1	Pass
01	1 Bed Suite 23_Living/Kitchen	Category 3	100	0.4	6	2	Pass
01	2 Bed Suite 2 (U)_Bedroom	Category 2	100	0.4	17	3	Pass
01	2 Bed Suite 2 (U)_Living/Kitchen	Category 2	100	0.8	18	3	Pass
01	2 Bed Suite 3 (U)_Bedroom	Category 2	100	0.4	17	3	Pass
01	2 Bed Suite 3 (U)_Living/Kitchen	Category 2	100	0.8	18	3	Pass
01	2 Bed Suite 4 (U)_Bedroom	Category 2	100	0.4	17	3	Pass
01	2 Bed Suite 4 (U)_Living/Kitchen	Category 2	100	0.8	18	3	Pass
01	2 Bed Suite 6 (U)_Bedroom	Category 2	100	0.4	18	3	Pass
01	2 Bed Suite 6 (U)_Living/Kitchen	Category 2	100	0.7	12	2	Pass
01	3 Bed Suite 1 (U)_Bedroom	Category 2	100	0.4	20	3	Pass
01	3 Bed Suite 1 (U)_Bedroom	Category 2	100	0.4	18	3	Pass
01	3 Bed Suite 1 (U)_Living/Kitchen	Category 2	100	0.8	18	3	Pass
01	3 Bed Suite 5 (U)_Bedroom	Category 2	100	0.4	17	3	Pass
01	3 Bed Suite 5 (U)_Bedroom	Category 2	100	0.4	15	3	Pass
01	3 Bed Suite 5 (U)_Living/Kitchen	Category 2	100	0.8	18	3	Pass
01	Circulation	Category 3	100	0.6	10	2	Pass
01	Circulation	Category 3	100	0.4	6	1	Pass
01	Circulation	Category 3	100	0.1	3	1	Pass
01	Circulation	Category 3	100	0.6	13	2	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0.1	3	1	Pass
01	Junior Suite 10	Category 3	100	0.3	7	2	Pass
01	Junior Suite 11	Category 3	100	0.3	9	2	Pass
01	Junior Suite 12	Category 3	100	0	0	0	Pass
01	Junior Suite 13	Category 3	100	0	0	0	Pass
01	Junior Suite 14	Category 3	100	0	0	0	Pass
01	Junior Suite 15	Category 3	100	0	0	0	Pass
01	Junior Suite 16	Category 3	100	0	0	0	Pass
01	Junior Suite 17	Category 3	100	0	0	0	Pass

01	Junior Suite 18	Category 3	100	0	0	0	Pass
01	Junior Suite 19	Category 3	100	0	0	0	Pass
01	Junior Suite 2	Category 3	100	0.2	5	1	Pass
01	Junior Suite 20	Category 3	100	0	0	0	Pass
01	Junior Suite 21	Category 3	100	0	0	0	Pass
01	Junior Suite 22	Category 3	100	0	0	0	Pass
01	Junior Suite 24	Category 3	100	0.5	13	2	Pass
01	Junior Suite 25	Category 3	100	0	0	0	Pass
01	Junior Suite 26	Category 3	100	0	0	0	Pass
01	Junior Suite 27	Category 3	100	0	0	0	Pass
01	Junior Suite 28	Category 3	100	0	0	0	Pass
01	Junior Suite 29	Category 3	100	0	0	0	Pass
01	Junior Suite 3	Category 3	100	0.1	3	1	Pass
01	Junior Suite 30	Category 3	100	0	0	0	Pass
01	Junior Suite 4	Category 3	100	0.1	2	1	Pass
01	Junior Suite 5	Category 3	100	0.1	3	1	Pass
01	Junior Suite 6	Category 3	100	0.1	2	1	Pass
01	Junior Suite 7	Category 3	100	0.1	2	1	Pass
01	Junior Suite 8	Category 3	100	0.1	2	1	Pass
01	Junior Suite 9	Category 3	100	0.1	2	1	Pass
02	1 Bed Suite 1_Bedroom	Category 3	100	0.2	6	2	Pass
02	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.7	10	2	Pass
02	Circulation	Category 2	100	0.6	21	4	Pass
02	Circulation	Category 3	100	0.5	7	1	Pass
02	Circulation	Category 3	100	0.5	9	2	Pass
02	Circulation	Category 3	100	0.5	7	1	Pass
02	Circulation	Category 3	100	0.2	6	1	Pass
02	Circulation	Category 3	100	0.4	7	1	Pass
02	Circulation	Category 3	100	0.3	6	1	Pass
02	Junior Suite 5	Category 3	100	0.3	6	2	Pass
02	Junior Suite 9	Category 3	100	0.3	9	2	Pass
02	Junior Suite 10	Category 3	100	0.4	11	2	Pass
02	Junior Suite 11	Category 3	100	0.4	10	2	Pass
02	Junior Suite 12	Category 3	100	0	0	0	Pass
02	Junior Suite 12	Category 3	100	0.1	4	1	Pass
02	Junior Suite 13	Category 2	100	0.4	13	2	Pass
02	Junior Suite 14	Category 2	100	0.4	15	3	Pass
02	Junior Suite 15	Category 2	100	0.4	12	2	Pass
02	Junior Suite 16	Category 2	100	0.4	12	2	Pass
02	Junior Suite 17	Category 2	100	0.4	12	2	Pass
02	Junior Suite 18	Category 2	100	0.4	10	2	Pass
02	Junior Suite 19	Category 2	100	0.4	9	2	Pass
02	Junior Suite 2	Category 3	100	0.2	5	1	Pass
02	Junior Suite 20	Category 2	100	0.4	11	2	Pass
02	Junior Suite 21	Category 2	100	0.4	12	2	Pass
02	Junior Suite 22	Category 3	100	0	0	0	Pass
02	Junior Suite 23	Category 3	100	0	0	0	Pass
02	Junior Suite 24	Category 3	100	0	0	0	Pass
02	Junior Suite 25	Category 3	100	0	0	0	Pass
02	Junior Suite 26	Category 3	100	0.3	8	2	Pass
02	Junior Suite 26	Category 3	100	0.3	8	2	Pass
02	Junior Suite 26	Category 3	100	0.2	5	1	Pass
02	Junior Suite 27	Category 3	100	0.2	4	1	Pass
02	Junior Suite 27	Category 3	100	0.2	4	1	Pass
02	Junior Suite 27	Category 3	100	0.2	4	1	Pass
02	Junior Suite 27	Category 3	100	0.2	4	1	Pass
02	Junior Suite 3	Category 3	100	0.3	6	2	Pass
02	Junior Suite 30	Category 3	100	0.2	4	1	Pass
02	Junior Suite 31	Category 3	100	0.2	4	1	Pass
02	Junior Suite 32	Category 3	100	0.4	9	2	Pass
02	Junior Suite 32	Category 3	100	0.4	10	2	Pass
02	Junior Suite 32	Category 3	100	0.4	9	2	Pass
02	Junior Suite 33	Category 3	100	0.3	5	1	Pass
02	Junior Suite 34	Category 3	100	0	0	0	Pass
02	Junior Suite 35	Category 3	100	0	1	1	Pass
02	Junior Suite 36	Category 3	100	0.1	2	1	Pass
02	Junior Suite 37	Category 3	100	0.1	2	1	Pass
02	Junior Suite 38	Category 3	100	0	1	1	Pass
02	Junior Suite 39	Category 3	100	0	0	0	Pass
02	Junior Suite 4	Category 3	100	0.3	6	2	Pass
02	Junior Suite 6	Category 3	100	0.3	6	2	Pass
02	Junior Suite 7	Category 3	100	0.3	7	2	Pass
02	Junior Suite 8	Category 3	100	0.3	8	2	Pass
03	1 Bed Suite 1_Bedroom	Category 3	100	0.2	6	2	Pass
03	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.7	10	2	Pass
03	Circulation	Category 2	100	0.7	24	4	Pass
03	Circulation	Category 3	100	0.5	7	1	Pass
03	Circulation	Category 3	100	0.5	9	2	Pass

03	Circulation	Category 3	100	0.2	6	1	Pass
03	Circulation	Category 3	100	0.4	6	1	Pass
03	Circulation	Category 3	100	0.6	11	2	Pass
03	Circulation	Category 3	100	0.3	6	1	Pass
03	Junior Suite 5	Category 3	100	0.3	7	2	Pass
03	Junior Suite 9	Category 3	100	0.3	9	2	Pass
03	Junior Suite 10	Category 3	100	0.4	11	2	Pass
03	Junior Suite 11	Category 3	100	0.4	10	2	Pass
03	Junior Suite 12	Category 3	100	0	0	0	Pass
03	Junior Suite 12	Category 3	100	0.1	4	1	Pass
03	Junior Suite 13	Category 2	100	0.4	10	2	Pass
03	Junior Suite 14	Category 2	100	0.4	12	2	Pass
03	Junior Suite 15	Category 2	100	0.4	12	2	Pass
03	Junior Suite 16	Category 2	100	0.4	12	2	Pass
03	Junior Suite 17	Category 2	100	0.4	12	2	Pass
03	Junior Suite 18	Category 2	100	0.4	10	2	Pass
03	Junior Suite 19	Category 2	100	0.4	10	2	Pass
03	Junior Suite 2	Category 3	100	0.2	5	1	Pass
03	Junior Suite 20	Category 2	100	0.4	12	2	Pass
03	Junior Suite 21	Category 2	100	0.4	13	2	Pass
03	Junior Suite 22	Category 3	100	0.1	2	1	Pass
03	Junior Suite 23	Category 3	100	0	1	1	Pass
03	Junior Suite 24	Category 3	100	0	1	1	Pass
03	Junior Suite 25	Category 3	100	0	0	0	Pass
03	Junior Suite 26	Category 3	100	0.3	10	2	Pass
03	Junior Suite 26	Category 3	100	0.3	10	2	Pass
03	Junior Suite 26	Category 3	100	0.3	6	1	Pass
03	Junior Suite 27	Category 3	100	0.2	4	1	Pass
03	Junior Suite 27	Category 3	100	0.2	4	1	Pass
03	Junior Suite 27	Category 3	100	0.2	4	1	Pass
03	Junior Suite 3	Category 3	100	0.3	6	2	Pass
03	Junior Suite 30	Category 3	100	0.2	4	1	Pass
03	Junior Suite 31	Category 3	100	0.3	6	1	Pass
03	Junior Suite 32	Category 3	100	0.4	9	2	Pass
03	Junior Suite 32	Category 3	100	0.4	11	2	Pass
03	Junior Suite 32	Category 3	100	0.4	12	2	Pass
03	Junior Suite 33	Category 3	100	0.2	5	1	Pass
03	Junior Suite 34	Category 3	100	0	0	0	Pass
03	Junior Suite 35	Category 3	100	0	1	1	Pass
03	Junior Suite 36	Category 3	100	0.1	2	1	Pass
03	Junior Suite 37	Category 3	100	0.1	2	1	Pass
03	Junior Suite 38	Category 3	100	0.1	2	1	Pass
03	Junior Suite 39	Category 3	100	0	0	0	Pass
03	Junior Suite 4	Category 3	100	0.3	6	2	Pass
03	Junior Suite 6	Category 3	100	0.3	7	2	Pass
03	Junior Suite 7	Category 3	100	0.3	9	2	Pass
03	Junior Suite 8	Category 3	100	0.3	9	2	Pass
04	1 Bed Suite 1_Bedroom	Category 3	100	0.2	7	2	Pass
04	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.7	10	2	Pass
04	1 Bed Suite 23_Living/Kitchen	Category 3	100	0.8	14	2	Pass
04	1 Bed Suite 31_Bedroom	Category 3	100	0.4	11	2	Pass
04	Acc Suite 24	Category 3	100	0.1	3	1	Pass
04	Acc Suite 25	Category 3	100	0.1	2	1	Pass
04	Circulation	Category 2	100	0.7	26	4	Pass
04	Circulation	Category 3	100	0.4	6	1	Pass
04	Circulation	Category 3	100	0.2	6	1	Pass
04	Circulation	Category 3	100	0.6	11	2	Pass
04	Circulation	Category 3	100	0.5	8	1	Pass
04	Circulation	Category 3	100	0.5	7	1	Pass
04	Circulation	Category 3	100	0.4	6	1	Pass
04	Junior Suite 10	Category 3	100	0.4	12	2	Pass
04	Junior Suite 11	Category 3	100	0.4	10	2	Pass
04	Junior Suite 12	Category 3	100	0	0	0	Pass
04	Junior Suite 13	Category 2	100	0.4	10	2	Pass
04	Junior Suite 14	Category 2	100	0.4	12	2	Pass
04	Junior Suite 15	Category 2	100	0.4	12	2	Pass
04	Junior Suite 16	Category 2	100	0.4	12	2	Pass
04	Junior Suite 17	Category 2	100	0.4	12	2	Pass
04	Junior Suite 18	Category 2	100	0.4	11	2	Pass
04	Junior Suite 19	Category 2	100	0.4	10	2	Pass
04	Junior Suite 2	Category 3	100	0.2	5	1	Pass
04	Junior Suite 20	Category 2	100	0.4	12	2	Pass
04	Junior Suite 21	Category 2	100	0.5	15	2	Pass
04	Junior Suite 22	Category 3	100	0.2	6	2	Pass
04	Junior Suite 22	Category 3	100	0.2	5	1	Pass
04	Junior Suite 23	Category 3	100	0.1	3	1	Pass
04	Junior Suite 26	Category 3	100	0.2	4	1	Pass

04	Junior Suite 27	Category 3	100	0.3	6	1	Pass
04	Junior Suite 28	Category 3	100	0.3	6	1	Pass
04	Junior Suite 29	Category 3	100	0.3	6	1	Pass
04	Junior Suite 3	Category 3	100	0.3	8	2	Pass
04	Junior Suite 30	Category 3	100	0.3	7	1	Pass
04	Junior Suite 32	Category 3	100	0.2	4	1	Pass
04	Junior Suite 33	Category 3	100	0	0	0	Pass
04	Junior Suite 34	Category 3	100	0.1	3	1	Pass
04	Junior Suite 35	Category 3	100	0.1	3	1	Pass
04	Junior Suite 36	Category 3	100	0.1	3	1	Pass
04	Junior Suite 37	Category 3	100	0.1	3	1	Pass
04	Junior Suite 38	Category 3	100	0	1	1	Pass
04	Junior Suite 4	Category 3	100	0.3	8	2	Pass
04	Junior Suite 5	Category 3	100	0.3	7	2	Pass
04	Junior Suite 6	Category 3	100	0.3	7	2	Pass
04	Junior Suite 7	Category 3	100	0.3	9	2	Pass
04	Junior Suite 8	Category 3	100	0.3	9	2	Pass
04	Junior Suite 9	Category 3	100	0.3	9	2	Pass
05	1 Bed Suite 1_Bedroom	Category 3	100	0.3	8	2	Pass
05	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.7	12	2	Pass
05	1 Bed Suite 23_Living/Kitchen	Category 3	100	0.8	14	2	Pass
05	1 Bed Suite 31_Bedroom	Category 3	100	0.4	12	2	Pass
05	Acc Suite 24	Category 3	100	0.1	3	1	Pass
05	Acc Suite 25	Category 3	100	0.1	3	1	Pass
05	Circulation	Category 2	100	0.7	26	4	Pass
05	Circulation	Category 3	100	0.6	13	2	Pass
05	Circulation	Category 3	100	0.5	8	1	Pass
05	Circulation	Category 3	100	0.5	9	2	Pass
05	Circulation	Category 3	100	0.4	6	1	Pass
05	Circulation	Category 3	100	0.2	6	1	Pass
05	Circulation	Category 3	100	0.4	7	1	Pass
05	Junior Suite 10	Category 3	100	0.4	13	3	Pass
05	Junior Suite 11	Category 3	100	0.4	12	2	Pass
05	Junior Suite 12	Category 3	100	0	0	0	Pass
05	Junior Suite 13	Category 2	100	0.4	10	2	Pass
05	Junior Suite 14	Category 2	100	0.4	12	2	Pass
05	Junior Suite 15	Category 2	100	0.4	12	2	Pass
05	Junior Suite 16	Category 2	100	0.4	12	2	Pass
05	Junior Suite 17	Category 2	100	0.4	12	2	Pass
05	Junior Suite 18	Category 2	100	0.4	12	2	Pass
05	Junior Suite 19	Category 2	100	0.4	12	2	Pass
05	Junior Suite 2	Category 3	100	0.2	5	1	Pass
05	Junior Suite 20	Category 2	100	0.4	12	2	Pass
05	Junior Suite 21	Category 2	100	0.5	15	2	Pass
05	Junior Suite 22	Category 3	100	0.2	5	1	Pass
05	Junior Suite 22	Category 3	100	0.3	7	2	Pass
05	Junior Suite 23	Category 3	100	0.2	3	1	Pass
05	Junior Suite 26	Category 3	100	0.3	6	1	Pass
05	Junior Suite 27	Category 3	100	0.3	7	1	Pass
05	Junior Suite 28	Category 3	100	0.3	7	1	Pass
05	Junior Suite 29	Category 3	100	0.3	7	1	Pass
05	Junior Suite 3	Category 3	100	0.3	8	2	Pass
05	Junior Suite 30	Category 3	100	0.3	7	1	Pass
05	Junior Suite 32	Category 3	100	0.2	5	1	Pass
05	Junior Suite 33	Category 3	100	0.1	2	1	Pass
05	Junior Suite 34	Category 3	100	0.1	3	1	Pass
05	Junior Suite 35	Category 3	100	0.2	3	1	Pass
05	Junior Suite 36	Category 3	100	0.1	3	1	Pass
05	Junior Suite 37	Category 3	100	0.1	3	1	Pass
05	Junior Suite 38	Category 3	100	0	1	1	Pass
05	Junior Suite 4	Category 3	100	0.3	8	2	Pass
05	Junior Suite 5	Category 3	100	0.3	7	2	Pass
05	Junior Suite 6	Category 3	100	0.3	7	2	Pass
05	Junior Suite 7	Category 3	100	0.3	9	2	Pass
05	Junior Suite 8	Category 3	100	0.3	9	2	Pass
05	Junior Suite 9	Category 3	100	0.3	10	2	Pass
06	1 Bed Suite 1_Bedroom	Category 3	100	0.3	8	2	Pass
06	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.7	15	3	Pass
06	Acc Suite 13	Category 2	100	0.4	9	2	Pass
06	Acc Suite 14	Category 2	100	0.4	11	2	Pass
06	Acc Suite 23	Category 3	100	0.2	4	1	Pass
06	Acc Suite 24	Category 3	100	0.2	4	1	Pass
06	Circulation	Category 2	100	0.7	24	4	Pass
06	Circulation	Category 3	100	0.2	4	1	Pass
06	Circulation	Category 3	100	0.6	12	2	Pass
06	Circulation	Category 3	100	0.5	11	2	Pass
06	Circulation	Category 3	100	0.5	9	2	Pass

06	Circulation	Category 3	100	0.6	13	2	Pass
06	Circulation	Category 3	100	0.6	13	2	Pass
06	Circulation	Category 3	100	0.6	12	2	Pass
06	Junior Suite 10	Category 3	100	0.4	14	3	Pass
06	Junior Suite 11	Category 3	100	0.4	13	2	Pass
06	Junior Suite 12	Category 3	100	0	0	0	Pass
06	Junior Suite 15	Category 2	100	0.4	12	2	Pass
06	Junior Suite 16	Category 2	100	0.4	12	2	Pass
06	Junior Suite 17	Category 2	100	0.4	12	2	Pass
06	Junior Suite 18	Category 2	100	0.4	11	2	Pass
06	Junior Suite 19	Category 2	100	0.4	13	2	Pass
06	Junior Suite 2	Category 3	100	0.2	5	1	Pass
06	Junior Suite 20	Category 2	100	0.5	16	3	Pass
06	Junior Suite 21	Category 3	100	0.2	4	1	Pass
06	Junior Suite 22	Category 3	100	0.2	4	1	Pass
06	Junior Suite 25	Category 3	100	0.4	11	2	Pass
06	Junior Suite 26	Category 3	100	0.4	11	2	Pass
06	Junior Suite 27	Category 3	100	0.4	11	2	Pass
06	Junior Suite 28	Category 3	100	0.4	11	2	Pass
06	Junior Suite 29	Category 3	100	0.4	11	2	Pass
06	Junior Suite 3	Category 3	100	0.3	8	2	Pass
06	Junior Suite 30	Category 3	100	0.3	8	2	Pass
06	Junior Suite 31	Category 3	100	0.3	10	2	Pass
06	Junior Suite 32	Category 3	100	0.2	5	2	Pass
06	Junior Suite 33	Category 3	100	0.3	8	2	Pass
06	Junior Suite 34	Category 3	100	0.3	8	2	Pass
06	Junior Suite 35	Category 3	100	0.3	8	2	Pass
06	Junior Suite 36	Category 3	100	0.3	5	1	Pass
06	Junior Suite 37	Category 3	100	0.2	5	1	Pass
06	Junior Suite 4	Category 3	100	0.3	8	2	Pass
06	Junior Suite 5	Category 3	100	0.3	8	2	Pass
06	Junior Suite 6	Category 3	100	0.3	8	2	Pass
06	Junior Suite 7	Category 3	100	0.3	9	2	Pass
06	Junior Suite 8	Category 3	100	0.3	9	2	Pass
06	Junior Suite 9	Category 3	100	0.4	11	2	Pass
07	1 Bed Suite 1_Bedroom	Category 3	100	0.4	12	3	Pass
07	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.8	16	3	Pass
07	Acc Suite 14	Category 3	100	0.2	4	1	Pass
07	Acc Suite 15	Category 3	100	0.1	2	1	Pass
07	Circulation	Category 3	100	0.2	6	1	Pass
07	Circulation	Category 3	100	0.6	11	2	Pass
07	Circulation	Category 3	100	0.6	14	2	Pass
07	Junior Suite 10	Category 3	100	0.3	11	2	Pass
07	Junior Suite 11	Category 3	100	0.3	10	2	Pass
07	Junior Suite 12	Category 3	100	0.4	10	2	Pass
07	Junior Suite 13	Category 3	100	0.3	6	1	Pass
07	Junior Suite 2	Category 3	100	0.1	4	1	Pass
07	Junior Suite 3	Category 3	100	0.2	5	1	Pass
07	Junior Suite 4	Category 3	100	0.2	5	1	Pass
07	Junior Suite 5	Category 3	100	0.2	5	1	Pass
07	Junior Suite 6	Category 3	100	0.2	5	1	Pass
07	Junior Suite 7	Category 3	100	0.3	8	2	Pass
07	Junior Suite 8	Category 3	100	0.3	8	2	Pass
07	Junior Suite 9	Category 3	100	0.3	9	2	Pass
08	1 Bed Suite 1_Bedroom	Category 3	100	0.5	26	4	Pass
08	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.9	21	4	Pass
08	Acc Suite 14	Category 3	100	0.4	15	3	Pass
08	Acc Suite 15	Category 3	100	0.4	12	2	Pass
08	Circulation	Category 3	100	0.6	14	2	Pass
08	Circulation	Category 3	100	0.8	24	3	Pass
08	Circulation	Category 3	100	0.7	17	2	Pass
08	Junior Suite 10	Category 3	100	0.9	24	5	Fail
08	Junior Suite 11	Category 3	100	0.9	28	5	Fail
08	Junior Suite 12	Category 3	100	0.5	24	4	Pass
08	Junior Suite 13	Category 3	100	0.4	12	2	Pass
08	Junior Suite 2	Category 3	100	0.5	20	4	Pass
08	Junior Suite 3	Category 3	100	0.4	17	3	Pass
08	Junior Suite 4	Category 3	100	0.4	17	3	Pass
08	Junior Suite 5	Category 3	100	0.4	17	3	Pass
08	Junior Suite 6	Category 3	100	0.4	17	3	Pass
08	Junior Suite 7	Category 3	100	0.5	19	4	Pass
08	Junior Suite 8	Category 3	100	0.5	20	4	Pass
08	Junior Suite 9	Category 3	100	0.5	22	4	Pass

Appendix A-8d

CIBSE TM52 calculation results: Scenario 4



INVESTORS
IN PEOPLE

Scenario 4

Occupied rooms passing the assessment	366
Occupied rooms failing the assessment	0
Unoccupied rooms	5
Total rooms modelled	371

Weather file:	Manchester_DSY3_2020High50_epw
Days data	365 (01-Jan to 31-Dec)
Days (summer)	153 (01-May to 30-Sep)
Data OK?	OK - Full summer

Floor	Room Name	Assessment category	Occupied days (%)	Criteria 1 (%Hrs Top-Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. ΔT)	Result
00	2 Bed Suite 06 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	2 Bed Suite 06 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 01(L)_Bedroom	Category 2	100	0.1	2	1	Pass
00	3 Bed Suite 01(L)_Living/Kitchen	Category 2	100	0	0	0	Pass
00	3 Bed Suite 02 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 2 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	3 Bed Suite 3 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	3 Bed Suite 3 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 4 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	3 Bed Suite 4 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 5 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	3 Bed Suite 5 (L)_Hall	Category 2	0	0	0	0	N/A
00	Business Lounge	Category 3	100	0	0	0	Pass
00	Business Lounge (individual space)	Category 3	100	0	0	0	Pass
00	Business Lounge (individual space)	Category 3	100	0	0	0	Pass
00	Circulation	Category 2	100	0	0	0	Pass
00	Circulation	Category 2	100	0	0	0	Pass
00	Circulation	Category 3	100	3	9	1	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Commercial	Category 3	100	0	0	0	Pass
00	Gym /Yoga Studio	Category 3	100	0	0	0	Pass
00	Junior Suite 10	Category 2	100	0	0	0	Pass
00	Junior Suite 7	Category 2	100	0	0	0	Pass
00	Junior Suite 8	Category 2	100	0	0	0	Pass
00	Junior Suite 9	Category 2	100	0	0	0	Pass
00	Management	Category 3	100	0	0	0	Pass
00	Meeting Room	Category 3	100	0	0	0	Pass
00	Podcast Room	Category 3	100	0	0	0	Pass
00	Reception	Category 3	100	0	0	0	Pass
00	Social Lounge	Category 3	100	0	0	0	Pass
00	Wellfare	Category 3	100	0	0	0	Pass
00	Wellfare	Category 3	100	0	0	0	Pass
01	1 Bed Suite 1_Bedroom	Category 3	100	0	0	0	Pass
01	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.3	2	1	Pass
01	1 Bed Suite 23_Bedroom	Category 3	100	0.1	2	1	Pass
01	1 Bed Suite 23_Living/Kitchen	Category 3	100	0.6	4	1	Pass
01	2 Bed Suite 2 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	2 Bed Suite 2 (U)_Living/Kitchen	Category 2	100	0.3	2	1	Pass
01	2 Bed Suite 3 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	2 Bed Suite 3 (U)_Living/Kitchen	Category 2	100	0.3	2	1	Pass
01	2 Bed Suite 4 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	2 Bed Suite 4 (U)_Living/Kitchen	Category 2	100	0.2	2	1	Pass
01	2 Bed Suite 6 (U)_Bedroom	Category 2	100	0.1	2	1	Pass
01	2 Bed Suite 6 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	3 Bed Suite 1 (U)_Bedroom	Category 2	100	0.1	2	1	Pass
01	3 Bed Suite 1 (U)_Bedroom	Category 2	100	0	1	1	Pass
01	3 Bed Suite 1 (U)_Living/Kitchen	Category 2	100	0.2	1	1	Pass
01	3 Bed Suite 5 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	3 Bed Suite 5 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	3 Bed Suite 5 (U)_Living/Kitchen	Category 2	100	0.1	1	1	Pass
01	Circulation	Category 3	100	0.9	8	1	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	1	8	1	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Junior Suite 10	Category 3	100	0.8	5	2	Pass
01	Junior Suite 11	Category 3	100	0.3	3	1	Pass
01	Junior Suite 12	Category 3	100	0	0	0	Pass
01	Junior Suite 13	Category 3	100	0	0	0	Pass
01	Junior Suite 14	Category 3	100	0	0	0	Pass
01	Junior Suite 15	Category 3	100	0	0	0	Pass
01	Junior Suite 16	Category 3	100	0	0	0	Pass
01	Junior Suite 17	Category 3	100	0	0	0	Pass

01	Junior Suite 18	Category 3	100	0	0	0	Pass
01	Junior Suite 19	Category 3	100	0	0	0	Pass
01	Junior Suite 2	Category 3	100	0	0	0	Pass
01	Junior Suite 20	Category 3	100	0	0	0	Pass
01	Junior Suite 21	Category 3	100	0	0	0	Pass
01	Junior Suite 22	Category 3	100	0	0	0	Pass
01	Junior Suite 24	Category 3	100	0.3	5	1	Pass
01	Junior Suite 25	Category 3	100	0	0	0	Pass
01	Junior Suite 26	Category 3	100	0	0	0	Pass
01	Junior Suite 27	Category 3	100	0	0	0	Pass
01	Junior Suite 28	Category 3	100	0	0	0	Pass
01	Junior Suite 29	Category 3	100	0	0	0	Pass
01	Junior Suite 3	Category 3	100	0.1	2	1	Pass
01	Junior Suite 30	Category 3	100	0	0	0	Pass
01	Junior Suite 4	Category 3	100	0.1	2	1	Pass
01	Junior Suite 5	Category 3	100	0.1	2	1	Pass
01	Junior Suite 6	Category 3	100	0.1	2	1	Pass
01	Junior Suite 7	Category 3	100	0	0	0	Pass
01	Junior Suite 8	Category 3	100	0.1	1	1	Pass
01	Junior Suite 9	Category 3	100	0.2	2	1	Pass
02	1 Bed Suite 1_Bedroom	Category 3	100	0	1	1	Pass
02	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.4	3	1	Pass
02	Circulation	Category 2	100	0.5	5	1	Pass
02	Circulation	Category 3	100	0.2	3	1	Pass
02	Circulation	Category 3	100	0.4	6	1	Pass
02	Circulation	Category 3	100	0.4	5	1	Pass
02	Circulation	Category 3	100	0.2	3	1	Pass
02	Circulation	Category 3	100	0.3	5	1	Pass
02	Circulation	Category 3	100	0	0	0	Pass
02	Junior Suite 5	Category 3	100	0	0	0	Pass
02	Junior Suite 9	Category 3	100	0.1	2	1	Pass
02	Junior Suite 10	Category 3	100	0.2	3	1	Pass
02	Junior Suite 11	Category 3	100	0.1	3	1	Pass
02	Junior Suite 12	Category 3	100	0	0	0	Pass
02	Junior Suite 12	Category 3	100	0.1	2	1	Pass
02	Junior Suite 13	Category 2	100	0	1	1	Pass
02	Junior Suite 14	Category 2	100	0	1	1	Pass
02	Junior Suite 15	Category 2	100	0	0	0	Pass
02	Junior Suite 16	Category 2	100	0	0	0	Pass
02	Junior Suite 17	Category 2	100	0	0	0	Pass
02	Junior Suite 18	Category 2	100	0	0	0	Pass
02	Junior Suite 19	Category 2	100	0	0	0	Pass
02	Junior Suite 2	Category 3	100	0	0	0	Pass
02	Junior Suite 20	Category 2	100	0	0	0	Pass
02	Junior Suite 21	Category 2	100	0	1	1	Pass
02	Junior Suite 22	Category 3	100	0	0	0	Pass
02	Junior Suite 23	Category 3	100	0	0	0	Pass
02	Junior Suite 24	Category 3	100	0	0	0	Pass
02	Junior Suite 25	Category 3	100	0	0	0	Pass
02	Junior Suite 26	Category 3	100	0.3	4	1	Pass
02	Junior Suite 26	Category 3	100	0.3	4	1	Pass
02	Junior Suite 26	Category 3	100	0	0	0	Pass
02	Junior Suite 27	Category 3	100	0	0	0	Pass
02	Junior Suite 27	Category 3	100	0	0	0	Pass
02	Junior Suite 27	Category 3	100	0	0	0	Pass
02	Junior Suite 27	Category 3	100	0	0	0	Pass
02	Junior Suite 3	Category 3	100	0	0	0	Pass
02	Junior Suite 30	Category 3	100	0	0	0	Pass
02	Junior Suite 31	Category 3	100	0	0	0	Pass
02	Junior Suite 32	Category 3	100	0	1	1	Pass
02	Junior Suite 32	Category 3	100	0.3	4	1	Pass
02	Junior Suite 32	Category 3	100	0	1	1	Pass
02	Junior Suite 33	Category 3	100	0	0	0	Pass
02	Junior Suite 34	Category 3	100	0	0	0	Pass
02	Junior Suite 35	Category 3	100	0	0	0	Pass
02	Junior Suite 36	Category 3	100	0	0	0	Pass
02	Junior Suite 37	Category 3	100	0	0	0	Pass
02	Junior Suite 38	Category 3	100	0	0	0	Pass
02	Junior Suite 39	Category 3	100	0	0	0	Pass
02	Junior Suite 4	Category 3	100	0	0	0	Pass
02	Junior Suite 6	Category 3	100	0	0	0	Pass
02	Junior Suite 7	Category 3	100	0	0	0	Pass
02	Junior Suite 8	Category 3	100	0	1	1	Pass
03	1 Bed Suite 1_Bedroom	Category 3	100	0	1	1	Pass
03	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.4	3	1	Pass
03	Circulation	Category 2	100	0.7	5	1	Pass
03	Circulation	Category 3	100	0.5	5	1	Pass
03	Circulation	Category 3	100	0.4	5	1	Pass

03	Circulation	Category 3	100	0.2	3	1	Pass
03	Circulation	Category 3	100	0.2	3	1	Pass
03	Circulation	Category 3	100	0.6	6	1	Pass
03	Circulation	Category 3	100	0	0	0	Pass
03	Junior Suite 5	Category 3	100	0	0	0	Pass
03	Junior Suite 9	Category 3	100	0.1	2	1	Pass
03	Junior Suite 10	Category 3	100	0.2	3	1	Pass
03	Junior Suite 11	Category 3	100	0.2	4	1	Pass
03	Junior Suite 12	Category 3	100	0	0	0	Pass
03	Junior Suite 12	Category 3	100	0.1	3	1	Pass
03	Junior Suite 13	Category 2	100	0	0	0	Pass
03	Junior Suite 14	Category 2	100	0	0	0	Pass
03	Junior Suite 15	Category 2	100	0	0	0	Pass
03	Junior Suite 16	Category 2	100	0	0	0	Pass
03	Junior Suite 17	Category 2	100	0	0	0	Pass
03	Junior Suite 18	Category 2	100	0	0	0	Pass
03	Junior Suite 19	Category 2	100	0	0	0	Pass
03	Junior Suite 2	Category 3	100	0	0	0	Pass
03	Junior Suite 20	Category 2	100	0	0	0	Pass
03	Junior Suite 21	Category 2	100	0.1	2	1	Pass
03	Junior Suite 22	Category 3	100	0	0	0	Pass
03	Junior Suite 23	Category 3	100	0	0	0	Pass
03	Junior Suite 24	Category 3	100	0	0	0	Pass
03	Junior Suite 25	Category 3	100	0	0	0	Pass
03	Junior Suite 26	Category 3	100	0.3	4	1	Pass
03	Junior Suite 26	Category 3	100	0.3	4	1	Pass
03	Junior Suite 26	Category 3	100	0	0	0	Pass
03	Junior Suite 27	Category 3	100	0	0	0	Pass
03	Junior Suite 27	Category 3	100	0	0	0	Pass
03	Junior Suite 27	Category 3	100	0	0	0	Pass
03	Junior Suite 3	Category 3	100	0	0	0	Pass
03	Junior Suite 30	Category 3	100	0	0	0	Pass
03	Junior Suite 31	Category 3	100	0	0	0	Pass
03	Junior Suite 32	Category 3	100	0	1	1	Pass
03	Junior Suite 32	Category 3	100	0	1	1	Pass
03	Junior Suite 32	Category 3	100	0.3	4	1	Pass
03	Junior Suite 33	Category 3	100	0	0	0	Pass
03	Junior Suite 34	Category 3	100	0	0	0	Pass
03	Junior Suite 35	Category 3	100	0	0	0	Pass
03	Junior Suite 36	Category 3	100	0	0	0	Pass
03	Junior Suite 37	Category 3	100	0	0	0	Pass
03	Junior Suite 38	Category 3	100	0	0	0	Pass
03	Junior Suite 39	Category 3	100	0	0	0	Pass
03	Junior Suite 4	Category 3	100	0	0	0	Pass
03	Junior Suite 6	Category 3	100	0	0	0	Pass
03	Junior Suite 7	Category 3	100	0	1	1	Pass
03	Junior Suite 8	Category 3	100	0.1	2	1	Pass
04	1 Bed Suite 1_Bedroom	Category 3	100	0	1	1	Pass
04	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.4	3	1	Pass
04	1 Bed Suite 23_Living/Kitchen	Category 3	100	0.3	2	1	Pass
04	1 Bed Suite 31_Bedroom	Category 3	100	0	1	1	Pass
04	Acc Suite 24	Category 3	100	0	0	0	Pass
04	Acc Suite 25	Category 3	100	0	0	0	Pass
04	Circulation	Category 2	100	0.7	5	1	Pass
04	Circulation	Category 3	100	0.2	2	1	Pass
04	Circulation	Category 3	100	0.1	2	1	Pass
04	Circulation	Category 3	100	0.7	6	1	Pass
04	Circulation	Category 3	100	0.3	5	1	Pass
04	Circulation	Category 3	100	0.6	6	1	Pass
04	Circulation	Category 3	100	0	1	1	Pass
04	Junior Suite 10	Category 3	100	0.2	3	1	Pass
04	Junior Suite 11	Category 3	100	0.2	4	1	Pass
04	Junior Suite 12	Category 3	100	0	0	0	Pass
04	Junior Suite 13	Category 2	100	0	0	0	Pass
04	Junior Suite 14	Category 2	100	0	0	0	Pass
04	Junior Suite 15	Category 2	100	0	0	0	Pass
04	Junior Suite 16	Category 2	100	0	0	0	Pass
04	Junior Suite 17	Category 2	100	0	0	0	Pass
04	Junior Suite 18	Category 2	100	0	0	0	Pass
04	Junior Suite 19	Category 2	100	0	0	0	Pass
04	Junior Suite 2	Category 3	100	0	0	0	Pass
04	Junior Suite 20	Category 2	100	0	0	0	Pass
04	Junior Suite 21	Category 2	100	0.2	5	1	Pass
04	Junior Suite 22	Category 3	100	0.1	2	1	Pass
04	Junior Suite 22	Category 3	100	0	0	0	Pass
04	Junior Suite 23	Category 3	100	0	0	0	Pass
04	Junior Suite 26	Category 3	100	0	0	0	Pass

04	Junior Suite 27	Category 3	100	0	0	0	Pass
04	Junior Suite 28	Category 3	100	0	0	0	Pass
04	Junior Suite 29	Category 3	100	0	0	0	Pass
04	Junior Suite 3	Category 3	100	0	0	0	Pass
04	Junior Suite 30	Category 3	100	0	0	0	Pass
04	Junior Suite 32	Category 3	100	0	0	0	Pass
04	Junior Suite 33	Category 3	100	0	0	0	Pass
04	Junior Suite 34	Category 3	100	0	0	0	Pass
04	Junior Suite 35	Category 3	100	0	0	0	Pass
04	Junior Suite 36	Category 3	100	0	0	0	Pass
04	Junior Suite 37	Category 3	100	0	0	0	Pass
04	Junior Suite 38	Category 3	100	0	0	0	Pass
04	Junior Suite 4	Category 3	100	0	0	0	Pass
04	Junior Suite 5	Category 3	100	0	0	0	Pass
04	Junior Suite 6	Category 3	100	0	0	0	Pass
04	Junior Suite 7	Category 3	100	0	1	1	Pass
04	Junior Suite 8	Category 3	100	0.1	2	1	Pass
04	Junior Suite 9	Category 3	100	0.1	2	1	Pass
05	1 Bed Suite 1_Bedroom	Category 3	100	0.1	2	1	Pass
05	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.5	3	1	Pass
05	1 Bed Suite 23_Living/Kitchen	Category 3	100	0.3	2	1	Pass
05	1 Bed Suite 31_Bedroom	Category 3	100	0	1	1	Pass
05	Acc Suite 24	Category 3	100	0	0	0	Pass
05	Acc Suite 25	Category 3	100	0	0	0	Pass
05	Circulation	Category 2	100	0.8	5	1	Pass
05	Circulation	Category 3	100	0.9	7	1	Pass
05	Circulation	Category 3	100	0.8	7	1	Pass
05	Circulation	Category 3	100	0.3	4	1	Pass
05	Circulation	Category 3	100	0.2	2	1	Pass
05	Circulation	Category 3	100	0.1	2	1	Pass
05	Circulation	Category 3	100	0.1	1	1	Pass
05	Junior Suite 10	Category 3	100	0.2	3	1	Pass
05	Junior Suite 11	Category 3	100	0.2	4	1	Pass
05	Junior Suite 12	Category 3	100	0	0	0	Pass
05	Junior Suite 13	Category 2	100	0	0	0	Pass
05	Junior Suite 14	Category 2	100	0	0	0	Pass
05	Junior Suite 15	Category 2	100	0	0	0	Pass
05	Junior Suite 16	Category 2	100	0	0	0	Pass
05	Junior Suite 17	Category 2	100	0	0	0	Pass
05	Junior Suite 18	Category 2	100	0	0	0	Pass
05	Junior Suite 19	Category 2	100	0	0	0	Pass
05	Junior Suite 2	Category 3	100	0	0	0	Pass
05	Junior Suite 20	Category 2	100	0	1	1	Pass
05	Junior Suite 21	Category 2	100	0.2	5	1	Pass
05	Junior Suite 22	Category 3	100	0	0	0	Pass
05	Junior Suite 22	Category 3	100	0.1	2	1	Pass
05	Junior Suite 23	Category 3	100	0	0	0	Pass
05	Junior Suite 26	Category 3	100	0	0	0	Pass
05	Junior Suite 27	Category 3	100	0	0	0	Pass
05	Junior Suite 28	Category 3	100	0	0	0	Pass
05	Junior Suite 29	Category 3	100	0	0	0	Pass
05	Junior Suite 3	Category 3	100	0	0	0	Pass
05	Junior Suite 30	Category 3	100	0	0	0	Pass
05	Junior Suite 32	Category 3	100	0	0	0	Pass
05	Junior Suite 33	Category 3	100	0	0	0	Pass
05	Junior Suite 34	Category 3	100	0	0	0	Pass
05	Junior Suite 35	Category 3	100	0	0	0	Pass
05	Junior Suite 36	Category 3	100	0	0	0	Pass
05	Junior Suite 37	Category 3	100	0	0	0	Pass
05	Junior Suite 38	Category 3	100	0	0	0	Pass
05	Junior Suite 4	Category 3	100	0	0	0	Pass
05	Junior Suite 5	Category 3	100	0	0	0	Pass
05	Junior Suite 6	Category 3	100	0	0	0	Pass
05	Junior Suite 7	Category 3	100	0.1	2	1	Pass
05	Junior Suite 8	Category 3	100	0.1	2	1	Pass
05	Junior Suite 9	Category 3	100	0.1	2	1	Pass
06	1 Bed Suite 1_Bedroom	Category 3	100	0.1	2	1	Pass
06	1 Bed Suite 1_Living/Kitchen	Category 3	100	1	5	1	Pass
06	Acc Suite 13	Category 2	100	0	0	0	Pass
06	Acc Suite 14	Category 2	100	0	0	0	Pass
06	Acc Suite 23	Category 3	100	0	0	0	Pass
06	Acc Suite 24	Category 3	100	0	0	0	Pass
06	Circulation	Category 2	100	0.9	6	1	Pass
06	Circulation	Category 3	100	0	0	0	Pass
06	Circulation	Category 3	100	0.5	5	1	Pass
06	Circulation	Category 3	100	0.3	4	1	Pass
06	Circulation	Category 3	100	0.1	2	1	Pass

06	Circulation	Category 3	100	1	8	1	Pass
06	Circulation	Category 3	100	0.5	6	1	Pass
06	Circulation	Category 3	100	1	8	1	Pass
06	Junior Suite 10	Category 3	100	0.2	4	1	Pass
06	Junior Suite 11	Category 3	100	0.2	4	1	Pass
06	Junior Suite 12	Category 3	100	0	0	0	Pass
06	Junior Suite 15	Category 2	100	0	0	0	Pass
06	Junior Suite 16	Category 2	100	0	0	0	Pass
06	Junior Suite 17	Category 2	100	0	0	0	Pass
06	Junior Suite 18	Category 2	100	0	0	0	Pass
06	Junior Suite 19	Category 2	100	0	1	1	Pass
06	Junior Suite 2	Category 3	100	0	0	0	Pass
06	Junior Suite 20	Category 2	100	0.2	5	1	Pass
06	Junior Suite 21	Category 3	100	0	0	0	Pass
06	Junior Suite 22	Category 3	100	0	0	0	Pass
06	Junior Suite 25	Category 3	100	0	0	0	Pass
06	Junior Suite 26	Category 3	100	0	0	0	Pass
06	Junior Suite 27	Category 3	100	0	0	0	Pass
06	Junior Suite 28	Category 3	100	0	1	1	Pass
06	Junior Suite 29	Category 3	100	0	1	1	Pass
06	Junior Suite 3	Category 3	100	0	0	0	Pass
06	Junior Suite 30	Category 3	100	0	0	0	Pass
06	Junior Suite 31	Category 3	100	0.1	1	1	Pass
06	Junior Suite 32	Category 3	100	0	0	0	Pass
06	Junior Suite 33	Category 3	100	0	0	0	Pass
06	Junior Suite 34	Category 3	100	0	0	0	Pass
06	Junior Suite 35	Category 3	100	0	0	0	Pass
06	Junior Suite 36	Category 3	100	0	0	0	Pass
06	Junior Suite 37	Category 3	100	0	0	0	Pass
06	Junior Suite 4	Category 3	100	0	0	0	Pass
06	Junior Suite 5	Category 3	100	0	0	0	Pass
06	Junior Suite 6	Category 3	100	0	0	0	Pass
06	Junior Suite 7	Category 3	100	0.1	2	1	Pass
06	Junior Suite 8	Category 3	100	0.1	2	1	Pass
06	Junior Suite 9	Category 3	100	0.1	3	1	Pass
07	1 Bed Suite 1_Bedroom	Category 3	100	0.2	2	1	Pass
07	1 Bed Suite 1_Living/Kitchen	Category 3	100	1	6	2	Pass
07	Acc Suite 14	Category 3	100	0	0	0	Pass
07	Acc Suite 15	Category 3	100	0	0	0	Pass
07	Circulation	Category 3	100	0.1	2	1	Pass
07	Circulation	Category 3	100	1	8	1	Pass
07	Circulation	Category 3	100	0.8	7	1	Pass
07	Junior Suite 10	Category 3	100	0.2	3	1	Pass
07	Junior Suite 11	Category 3	100	0.2	4	1	Pass
07	Junior Suite 12	Category 3	100	0	1	1	Pass
07	Junior Suite 13	Category 3	100	0	0	0	Pass
07	Junior Suite 2	Category 3	100	0	0	0	Pass
07	Junior Suite 3	Category 3	100	0	0	0	Pass
07	Junior Suite 4	Category 3	100	0	0	0	Pass
07	Junior Suite 5	Category 3	100	0	0	0	Pass
07	Junior Suite 6	Category 3	100	0	0	0	Pass
07	Junior Suite 7	Category 3	100	0	0	0	Pass
07	Junior Suite 8	Category 3	100	0	0	0	Pass
07	Junior Suite 9	Category 3	100	0.1	2	1	Pass
08	1 Bed Suite 1_Bedroom	Category 3	100	0.7	5	2	Pass
08	1 Bed Suite 1_Living/Kitchen	Category 3	100	1.8	8	2	Pass
08	Acc Suite 14	Category 3	100	0.1	2	1	Pass
08	Acc Suite 15	Category 3	100	0.1	2	1	Pass
08	Circulation	Category 3	100	0.7	7	1	Pass
08	Circulation	Category 3	100	2.9	19	2	Pass
08	Circulation	Category 3	100	1.4	10	2	Pass
08	Junior Suite 10	Category 3	100	1.7	11	3	Pass
08	Junior Suite 11	Category 3	100	1.9	11	3	Pass
08	Junior Suite 12	Category 3	100	0.4	5	1	Pass
08	Junior Suite 13	Category 3	100	0.1	2	1	Pass
08	Junior Suite 2	Category 3	100	1.3	9	2	Pass
08	Junior Suite 3	Category 3	100	1	7	2	Pass
08	Junior Suite 4	Category 3	100	0.8	6	2	Pass
08	Junior Suite 5	Category 3	100	0.8	6	2	Pass
08	Junior Suite 6	Category 3	100	0.8	6	2	Pass
08	Junior Suite 7	Category 3	100	1	8	2	Pass
08	Junior Suite 8	Category 3	100	1.1	9	2	Pass
08	Junior Suite 9	Category 3	100	1.4	10	2	Pass

Appendix A-8e

CIBSE TM52 calculation results: Scenario 5



INVESTORS
IN PEOPLE

Scenario 5

Occupied rooms passing the assessment	366
Occupied rooms failing the assessment	0
Unoccupied rooms	5
Total rooms modelled	371

Weather file:	Manchester_DSY2_2020High50_epw
Days data	365 (01-Jan to 31-Dec)
Days (summer)	153 (01-May to 30-Sep)
Data OK?	OK - Full summer

Floor	Room Name	Assessment category	Occupied days (%)	Criteria 1 (%Hrs Top-Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. ΔT)	Result
00	2 Bed Suite 06 (L)_Bedroom	Category 2	100	0.3	9	2	Pass
00	2 Bed Suite 06 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 01(L)_Bedroom	Category 2	100	0.4	18	3	Pass
00	3 Bed Suite 01(L)_Living/Kitchen	Category 2	100	0.7	11	2	Pass
00	3 Bed Suite 02 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 2 (L)_Bedroom	Category 2	100	0.3	6	1	Pass
00	3 Bed Suite 3 (L)_Bedroom	Category 2	100	0.3	8	2	Pass
00	3 Bed Suite 3 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 4 (L)_Bedroom	Category 2	100	0.3	6	2	Pass
00	3 Bed Suite 4 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 5 (L)_Bedroom	Category 2	100	0.2	4	1	Pass
00	3 Bed Suite 5 (L)_Hall	Category 2	0	0	0	0	N/A
00	Business Lounge	Category 3	100	0	0	0	Pass
00	Business Lounge (individual space)	Category 3	100	0	0	0	Pass
00	Business Lounge (individual space)	Category 3	100	0	0	0	Pass
00	Circulation	Category 2	100	0.3	5	1	Pass
00	Circulation	Category 2	100	0.3	5	1	Pass
00	Circulation	Category 3	100	1.4	17	2	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Commercial	Category 3	100	0	0	0	Pass
00	Gym /Yoga Studio	Category 3	100	0	0	0	Pass
00	Junior Suite 10	Category 2	100	0.3	8	2	Pass
00	Junior Suite 7	Category 2	100	0.3	6	1	Pass
00	Junior Suite 8	Category 2	100	0.3	5	1	Pass
00	Junior Suite 9	Category 2	100	0.1	3	1	Pass
00	Management	Category 3	100	0	0	0	Pass
00	Meeting Room	Category 3	100	0	0	0	Pass
00	Podcast Room	Category 3	100	0	0	0	Pass
00	Reception	Category 3	100	0	0	0	Pass
00	Social Lounge	Category 3	100	0	0	0	Pass
00	Wellfare	Category 3	100	0	0	0	Pass
00	Wellfare	Category 3	100	0	0	0	Pass
01	1 Bed Suite 1_Bedroom	Category 3	100	0.1	2	1	Pass
01	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.6	8	2	Pass
01	1 Bed Suite 23_Bedroom	Category 3	100	0.1	2	1	Pass
01	1 Bed Suite 23_Living/Kitchen	Category 3	100	0.4	4	1	Pass
01	2 Bed Suite 2 (U)_Bedroom	Category 2	100	0.4	15	3	Pass
01	2 Bed Suite 2 (U)_Living/Kitchen	Category 2	100	0.8	18	3	Pass
01	2 Bed Suite 3 (U)_Bedroom	Category 2	100	0.4	15	3	Pass
01	2 Bed Suite 3 (U)_Living/Kitchen	Category 2	100	0.8	18	3	Pass
01	2 Bed Suite 4 (U)_Bedroom	Category 2	100	0.4	15	3	Pass
01	2 Bed Suite 4 (U)_Living/Kitchen	Category 2	100	0.8	18	3	Pass
01	2 Bed Suite 6 (U)_Bedroom	Category 2	100	0.4	18	3	Pass
01	2 Bed Suite 6 (U)_Living/Kitchen	Category 2	100	0.7	12	2	Pass
01	3 Bed Suite 1 (U)_Bedroom	Category 2	100	0.4	18	3	Pass
01	3 Bed Suite 1 (U)_Bedroom	Category 2	100	0.4	17	3	Pass
01	3 Bed Suite 1 (U)_Living/Kitchen	Category 2	100	0.8	18	3	Pass
01	3 Bed Suite 5 (U)_Bedroom	Category 2	100	0.4	16	3	Pass
01	3 Bed Suite 5 (U)_Bedroom	Category 2	100	0.4	14	3	Pass
01	3 Bed Suite 5 (U)_Living/Kitchen	Category 2	100	0.8	18	3	Pass
01	Circulation	Category 3	100	0.5	8	1	Pass
01	Circulation	Category 3	100	0.3	5	1	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0.6	13	2	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0.1	2	1	Pass
01	Junior Suite 10	Category 3	100	0.1	2	1	Pass
01	Junior Suite 11	Category 3	100	0.2	4	1	Pass
01	Junior Suite 12	Category 3	100	0	0	0	Pass
01	Junior Suite 13	Category 3	100	0	0	0	Pass
01	Junior Suite 14	Category 3	100	0	0	0	Pass
01	Junior Suite 15	Category 3	100	0	0	0	Pass
01	Junior Suite 16	Category 3	100	0	0	0	Pass
01	Junior Suite 17	Category 3	100	0	0	0	Pass

01	Junior Suite 18	Category 3	100	0	0	0	Pass
01	Junior Suite 19	Category 3	100	0	0	0	Pass
01	Junior Suite 2	Category 3	100	0.1	2	1	Pass
01	Junior Suite 20	Category 3	100	0	0	0	Pass
01	Junior Suite 21	Category 3	100	0	0	0	Pass
01	Junior Suite 22	Category 3	100	0	0	0	Pass
01	Junior Suite 24	Category 3	100	0.4	11	2	Pass
01	Junior Suite 25	Category 3	100	0	0	0	Pass
01	Junior Suite 26	Category 3	100	0	0	0	Pass
01	Junior Suite 27	Category 3	100	0	0	0	Pass
01	Junior Suite 28	Category 3	100	0	0	0	Pass
01	Junior Suite 29	Category 3	100	0	0	0	Pass
01	Junior Suite 3	Category 3	100	0	0	0	Pass
01	Junior Suite 30	Category 3	100	0	0	0	Pass
01	Junior Suite 4	Category 3	100	0	0	0	Pass
01	Junior Suite 5	Category 3	100	0	0	0	Pass
01	Junior Suite 6	Category 3	100	0	0	0	Pass
01	Junior Suite 7	Category 3	100	0	0	0	Pass
01	Junior Suite 8	Category 3	100	0	0	0	Pass
01	Junior Suite 9	Category 3	100	0	0	0	Pass
02	1 Bed Suite 1_Bedroom	Category 3	100	0.2	4	1	Pass
02	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.6	10	2	Pass
02	Circulation	Category 2	100	0.6	19	4	Pass
02	Circulation	Category 3	100	0.4	6	1	Pass
02	Circulation	Category 3	100	0.5	8	1	Pass
02	Circulation	Category 3	100	0.5	7	1	Pass
02	Circulation	Category 3	100	0.2	4	1	Pass
02	Circulation	Category 3	100	0.4	6	1	Pass
02	Circulation	Category 3	100	0.2	4	1	Pass
02	Junior Suite 5	Category 3	100	0.2	4	1	Pass
02	Junior Suite 9	Category 3	100	0.3	6	2	Pass
02	Junior Suite 10	Category 3	100	0.3	8	2	Pass
02	Junior Suite 11	Category 3	100	0.2	5	1	Pass
02	Junior Suite 12	Category 3	100	0	0	0	Pass
02	Junior Suite 12	Category 3	100	0.1	2	1	Pass
02	Junior Suite 13	Category 2	100	0.4	12	2	Pass
02	Junior Suite 14	Category 2	100	0.4	13	2	Pass
02	Junior Suite 15	Category 2	100	0.4	11	2	Pass
02	Junior Suite 16	Category 2	100	0.4	9	2	Pass
02	Junior Suite 17	Category 2	100	0.4	9	2	Pass
02	Junior Suite 18	Category 2	100	0.3	8	2	Pass
02	Junior Suite 19	Category 2	100	0.3	7	2	Pass
02	Junior Suite 2	Category 3	100	0.2	4	1	Pass
02	Junior Suite 20	Category 2	100	0.4	9	2	Pass
02	Junior Suite 21	Category 2	100	0.4	11	2	Pass
02	Junior Suite 22	Category 3	100	0	0	0	Pass
02	Junior Suite 23	Category 3	100	0	0	0	Pass
02	Junior Suite 24	Category 3	100	0	0	0	Pass
02	Junior Suite 25	Category 3	100	0	0	0	Pass
02	Junior Suite 26	Category 3	100	0.2	6	2	Pass
02	Junior Suite 26	Category 3	100	0.2	6	2	Pass
02	Junior Suite 26	Category 3	100	0.2	5	1	Pass
02	Junior Suite 27	Category 3	100	0.2	3	1	Pass
02	Junior Suite 27	Category 3	100	0.1	3	1	Pass
02	Junior Suite 27	Category 3	100	0.2	3	1	Pass
02	Junior Suite 3	Category 3	100	0.2	4	1	Pass
02	Junior Suite 30	Category 3	100	0.1	3	1	Pass
02	Junior Suite 31	Category 3	100	0.2	4	1	Pass
02	Junior Suite 32	Category 3	100	0.3	8	2	Pass
02	Junior Suite 32	Category 3	100	0.4	10	2	Pass
02	Junior Suite 32	Category 3	100	0.3	6	1	Pass
02	Junior Suite 33	Category 3	100	0.2	5	1	Pass
02	Junior Suite 34	Category 3	100	0	0	0	Pass
02	Junior Suite 35	Category 3	100	0	0	0	Pass
02	Junior Suite 36	Category 3	100	0	1	1	Pass
02	Junior Suite 37	Category 3	100	0	1	1	Pass
02	Junior Suite 38	Category 3	100	0	0	0	Pass
02	Junior Suite 39	Category 3	100	0	0	0	Pass
02	Junior Suite 4	Category 3	100	0.2	4	1	Pass
02	Junior Suite 6	Category 3	100	0.2	4	1	Pass
02	Junior Suite 7	Category 3	100	0.2	4	1	Pass
02	Junior Suite 8	Category 3	100	0.2	4	1	Pass
03	1 Bed Suite 1_Bedroom	Category 3	100	0.2	4	1	Pass
03	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.6	10	2	Pass
03	Circulation	Category 2	100	0.6	21	4	Pass
03	Circulation	Category 3	100	0.4	7	1	Pass
03	Circulation	Category 3	100	0.5	7	1	Pass

03	Circulation	Category 3	100	0.2	4	1	Pass
03	Circulation	Category 3	100	0.4	6	1	Pass
03	Circulation	Category 3	100	0.5	7	1	Pass
03	Circulation	Category 3	100	0.3	5	1	Pass
03	Junior Suite 5	Category 3	100	0.2	5	1	Pass
03	Junior Suite 9	Category 3	100	0.3	7	2	Pass
03	Junior Suite 10	Category 3	100	0.3	9	2	Pass
03	Junior Suite 11	Category 3	100	0.2	7	2	Pass
03	Junior Suite 12	Category 3	100	0	0	0	Pass
03	Junior Suite 12	Category 3	100	0.1	2	1	Pass
03	Junior Suite 13	Category 2	100	0.3	7	1	Pass
03	Junior Suite 14	Category 2	100	0.4	10	2	Pass
03	Junior Suite 15	Category 2	100	0.4	10	2	Pass
03	Junior Suite 16	Category 2	100	0.4	9	2	Pass
03	Junior Suite 17	Category 2	100	0.4	9	2	Pass
03	Junior Suite 18	Category 2	100	0.3	8	2	Pass
03	Junior Suite 19	Category 2	100	0.3	8	2	Pass
03	Junior Suite 2	Category 3	100	0.1	4	1	Pass
03	Junior Suite 20	Category 2	100	0.4	10	2	Pass
03	Junior Suite 21	Category 2	100	0.4	12	2	Pass
03	Junior Suite 22	Category 3	100	0	1	1	Pass
03	Junior Suite 23	Category 3	100	0	0	0	Pass
03	Junior Suite 24	Category 3	100	0	0	0	Pass
03	Junior Suite 25	Category 3	100	0	0	0	Pass
03	Junior Suite 26	Category 3	100	0.3	8	2	Pass
03	Junior Suite 26	Category 3	100	0.3	8	2	Pass
03	Junior Suite 26	Category 3	100	0.3	6	1	Pass
03	Junior Suite 27	Category 3	100	0.2	4	1	Pass
03	Junior Suite 27	Category 3	100	0.2	4	1	Pass
03	Junior Suite 27	Category 3	100	0.2	4	1	Pass
03	Junior Suite 3	Category 3	100	0.2	4	1	Pass
03	Junior Suite 30	Category 3	100	0.2	4	1	Pass
03	Junior Suite 31	Category 3	100	0.2	4	1	Pass
03	Junior Suite 32	Category 3	100	0.3	7	2	Pass
03	Junior Suite 32	Category 3	100	0.4	9	2	Pass
03	Junior Suite 32	Category 3	100	0.4	10	2	Pass
03	Junior Suite 33	Category 3	100	0.2	4	1	Pass
03	Junior Suite 34	Category 3	100	0	0	0	Pass
03	Junior Suite 35	Category 3	100	0	0	0	Pass
03	Junior Suite 36	Category 3	100	0	1	1	Pass
03	Junior Suite 37	Category 3	100	0	1	1	Pass
03	Junior Suite 38	Category 3	100	0	1	1	Pass
03	Junior Suite 39	Category 3	100	0	0	0	Pass
03	Junior Suite 4	Category 3	100	0.2	4	1	Pass
03	Junior Suite 6	Category 3	100	0.2	4	1	Pass
03	Junior Suite 7	Category 3	100	0.2	5	1	Pass
03	Junior Suite 8	Category 3	100	0.3	5	1	Pass
04	1 Bed Suite 1_Bedroom	Category 3	100	0.2	6	2	Pass
04	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.6	10	2	Pass
04	1 Bed Suite 23_Living/Kitchen	Category 3	100	0.7	12	2	Pass
04	1 Bed Suite 31_Bedroom	Category 3	100	0.4	9	2	Pass
04	Acc Suite 24	Category 3	100	0.1	2	1	Pass
04	Acc Suite 25	Category 3	100	0	1	1	Pass
04	Circulation	Category 2	100	0.6	21	4	Pass
04	Circulation	Category 3	100	0.3	6	1	Pass
04	Circulation	Category 3	100	0.2	4	1	Pass
04	Circulation	Category 3	100	0.5	7	1	Pass
04	Circulation	Category 3	100	0.5	7	1	Pass
04	Circulation	Category 3	100	0.4	7	1	Pass
04	Circulation	Category 3	100	0.4	6	1	Pass
04	Junior Suite 10	Category 3	100	0.3	9	2	Pass
04	Junior Suite 11	Category 3	100	0.2	7	2	Pass
04	Junior Suite 12	Category 3	100	0	0	0	Pass
04	Junior Suite 13	Category 2	100	0.3	8	2	Pass
04	Junior Suite 14	Category 2	100	0.4	10	2	Pass
04	Junior Suite 15	Category 2	100	0.4	10	2	Pass
04	Junior Suite 16	Category 2	100	0.4	10	2	Pass
04	Junior Suite 17	Category 2	100	0.4	10	2	Pass
04	Junior Suite 18	Category 2	100	0.3	9	2	Pass
04	Junior Suite 19	Category 2	100	0.3	9	2	Pass
04	Junior Suite 2	Category 3	100	0.1	4	1	Pass
04	Junior Suite 20	Category 2	100	0.4	11	2	Pass
04	Junior Suite 21	Category 2	100	0.4	13	2	Pass
04	Junior Suite 22	Category 3	100	0.2	6	2	Pass
04	Junior Suite 22	Category 3	100	0.2	4	1	Pass
04	Junior Suite 23	Category 3	100	0.1	2	1	Pass
04	Junior Suite 26	Category 3	100	0.2	4	1	Pass

04	Junior Suite 27	Category 3	100	0.2	4	1	Pass
04	Junior Suite 28	Category 3	100	0.2	4	1	Pass
04	Junior Suite 29	Category 3	100	0.2	4	1	Pass
04	Junior Suite 3	Category 3	100	0.2	5	1	Pass
04	Junior Suite 30	Category 3	100	0.2	5	1	Pass
04	Junior Suite 32	Category 3	100	0.1	3	1	Pass
04	Junior Suite 33	Category 3	100	0	0	0	Pass
04	Junior Suite 34	Category 3	100	0	1	1	Pass
04	Junior Suite 35	Category 3	100	0.1	2	1	Pass
04	Junior Suite 36	Category 3	100	0.1	2	1	Pass
04	Junior Suite 37	Category 3	100	0	1	1	Pass
04	Junior Suite 38	Category 3	100	0	0	0	Pass
04	Junior Suite 4	Category 3	100	0.2	5	1	Pass
04	Junior Suite 5	Category 3	100	0.2	5	1	Pass
04	Junior Suite 6	Category 3	100	0.2	5	1	Pass
04	Junior Suite 7	Category 3	100	0.3	5	1	Pass
04	Junior Suite 8	Category 3	100	0.3	6	2	Pass
04	Junior Suite 9	Category 3	100	0.3	8	2	Pass
05	1 Bed Suite 1_Bedroom	Category 3	100	0.2	6	2	Pass
05	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.7	10	2	Pass
05	1 Bed Suite 23_Living/Kitchen	Category 3	100	0.7	12	2	Pass
05	1 Bed Suite 31_Bedroom	Category 3	100	0.4	9	2	Pass
05	Acc Suite 24	Category 3	100	0.1	3	1	Pass
05	Acc Suite 25	Category 3	100	0	1	1	Pass
05	Circulation	Category 2	100	0.7	23	4	Pass
05	Circulation	Category 3	100	0.6	11	2	Pass
05	Circulation	Category 3	100	0.5	7	1	Pass
05	Circulation	Category 3	100	0.5	8	1	Pass
05	Circulation	Category 3	100	0.3	6	1	Pass
05	Circulation	Category 3	100	0.2	4	1	Pass
05	Circulation	Category 3	100	0.4	6	1	Pass
05	Junior Suite 10	Category 3	100	0.3	9	2	Pass
05	Junior Suite 11	Category 3	100	0.3	7	2	Pass
05	Junior Suite 12	Category 3	100	0	0	0	Pass
05	Junior Suite 13	Category 2	100	0.3	8	2	Pass
05	Junior Suite 14	Category 2	100	0.4	10	2	Pass
05	Junior Suite 15	Category 2	100	0.4	10	2	Pass
05	Junior Suite 16	Category 2	100	0.4	10	2	Pass
05	Junior Suite 17	Category 2	100	0.4	10	2	Pass
05	Junior Suite 18	Category 2	100	0.4	10	2	Pass
05	Junior Suite 19	Category 2	100	0.4	9	2	Pass
05	Junior Suite 2	Category 3	100	0.1	4	1	Pass
05	Junior Suite 20	Category 2	100	0.4	11	2	Pass
05	Junior Suite 21	Category 2	100	0.4	13	2	Pass
05	Junior Suite 22	Category 3	100	0.2	5	1	Pass
05	Junior Suite 22	Category 3	100	0.2	6	2	Pass
05	Junior Suite 23	Category 3	100	0.1	3	1	Pass
05	Junior Suite 26	Category 3	100	0.2	4	1	Pass
05	Junior Suite 27	Category 3	100	0.2	4	1	Pass
05	Junior Suite 28	Category 3	100	0.2	4	1	Pass
05	Junior Suite 29	Category 3	100	0.2	4	1	Pass
05	Junior Suite 3	Category 3	100	0.2	5	1	Pass
05	Junior Suite 30	Category 3	100	0.3	6	1	Pass
05	Junior Suite 32	Category 3	100	0.2	3	1	Pass
05	Junior Suite 33	Category 3	100	0	1	1	Pass
05	Junior Suite 34	Category 3	100	0.1	3	1	Pass
05	Junior Suite 35	Category 3	100	0.1	3	1	Pass
05	Junior Suite 36	Category 3	100	0.1	3	1	Pass
05	Junior Suite 37	Category 3	100	0.1	2	1	Pass
05	Junior Suite 38	Category 3	100	0	1	1	Pass
05	Junior Suite 4	Category 3	100	0.3	5	1	Pass
05	Junior Suite 5	Category 3	100	0.2	5	1	Pass
05	Junior Suite 6	Category 3	100	0.2	5	1	Pass
05	Junior Suite 7	Category 3	100	0.3	6	2	Pass
05	Junior Suite 8	Category 3	100	0.3	7	2	Pass
05	Junior Suite 9	Category 3	100	0.3	8	2	Pass
06	1 Bed Suite 1_Bedroom	Category 3	100	0.2	6	2	Pass
06	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.7	12	2	Pass
06	Acc Suite 13	Category 2	100	0.3	6	1	Pass
06	Acc Suite 14	Category 2	100	0.3	9	2	Pass
06	Acc Suite 23	Category 3	100	0.2	3	1	Pass
06	Acc Suite 24	Category 3	100	0.2	3	1	Pass
06	Circulation	Category 2	100	0.7	22	4	Pass
06	Circulation	Category 3	100	0.1	2	1	Pass
06	Circulation	Category 3	100	0.5	11	2	Pass
06	Circulation	Category 3	100	0.5	9	2	Pass
06	Circulation	Category 3	100	0.5	6	1	Pass

06	Circulation	Category 3	100	0.6	12	2	Pass
06	Circulation	Category 3	100	0.5	12	2	Pass
06	Circulation	Category 3	100	0.5	9	2	Pass
06	Junior Suite 10	Category 3	100	0.4	10	2	Pass
06	Junior Suite 11	Category 3	100	0.3	9	2	Pass
06	Junior Suite 12	Category 3	100	0	0	0	Pass
06	Junior Suite 15	Category 2	100	0.4	9	2	Pass
06	Junior Suite 16	Category 2	100	0.4	9	2	Pass
06	Junior Suite 17	Category 2	100	0.4	9	2	Pass
06	Junior Suite 18	Category 2	100	0.4	9	2	Pass
06	Junior Suite 19	Category 2	100	0.4	11	2	Pass
06	Junior Suite 2	Category 3	100	0.2	4	1	Pass
06	Junior Suite 20	Category 2	100	0.4	13	2	Pass
06	Junior Suite 21	Category 3	100	0.2	4	1	Pass
06	Junior Suite 22	Category 3	100	0.1	3	1	Pass
06	Junior Suite 25	Category 3	100	0.3	8	2	Pass
06	Junior Suite 26	Category 3	100	0.4	8	2	Pass
06	Junior Suite 27	Category 3	100	0.4	8	2	Pass
06	Junior Suite 28	Category 3	100	0.4	8	2	Pass
06	Junior Suite 29	Category 3	100	0.4	8	2	Pass
06	Junior Suite 3	Category 3	100	0.3	5	1	Pass
06	Junior Suite 30	Category 3	100	0.3	6	1	Pass
06	Junior Suite 31	Category 3	100	0.3	9	2	Pass
06	Junior Suite 32	Category 3	100	0.2	4	1	Pass
06	Junior Suite 33	Category 3	100	0.3	6	2	Pass
06	Junior Suite 34	Category 3	100	0.3	8	2	Pass
06	Junior Suite 35	Category 3	100	0.3	6	2	Pass
06	Junior Suite 36	Category 3	100	0.3	5	1	Pass
06	Junior Suite 37	Category 3	100	0.2	4	1	Pass
06	Junior Suite 4	Category 3	100	0.3	5	1	Pass
06	Junior Suite 5	Category 3	100	0.3	5	1	Pass
06	Junior Suite 6	Category 3	100	0.3	5	1	Pass
06	Junior Suite 7	Category 3	100	0.3	7	2	Pass
06	Junior Suite 8	Category 3	100	0.3	7	2	Pass
06	Junior Suite 9	Category 3	100	0.3	8	2	Pass
07	1 Bed Suite 1_Bedroom	Category 3	100	0.3	8	2	Pass
07	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.7	13	3	Pass
07	Acc Suite 14	Category 3	100	0.2	4	1	Pass
07	Acc Suite 15	Category 3	100	0	0	0	Pass
07	Circulation	Category 3	100	0.2	4	1	Pass
07	Circulation	Category 3	100	0.4	7	1	Pass
07	Circulation	Category 3	100	0.6	13	2	Pass
07	Junior Suite 10	Category 3	100	0.3	8	2	Pass
07	Junior Suite 11	Category 3	100	0.2	5	1	Pass
07	Junior Suite 12	Category 3	100	0.3	5	1	Pass
07	Junior Suite 13	Category 3	100	0.2	4	1	Pass
07	Junior Suite 2	Category 3	100	0	0	0	Pass
07	Junior Suite 3	Category 3	100	0.1	4	1	Pass
07	Junior Suite 4	Category 3	100	0.1	4	1	Pass
07	Junior Suite 5	Category 3	100	0.1	4	1	Pass
07	Junior Suite 6	Category 3	100	0.1	4	1	Pass
07	Junior Suite 7	Category 3	100	0.1	4	1	Pass
07	Junior Suite 8	Category 3	100	0.1	4	1	Pass
07	Junior Suite 9	Category 3	100	0.2	4	1	Pass
08	1 Bed Suite 1_Bedroom	Category 3	100	0.4	21	4	Pass
08	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.9	19	3	Pass
08	Acc Suite 14	Category 3	100	0.4	12	2	Pass
08	Acc Suite 15	Category 3	100	0.4	11	2	Pass
08	Circulation	Category 3	100	0.6	12	2	Pass
08	Circulation	Category 3	100	0.7	17	2	Pass
08	Circulation	Category 3	100	0.6	14	2	Pass
08	Junior Suite 10	Category 3	100	0.4	20	4	Pass
08	Junior Suite 11	Category 3	100	0.5	24	4	Pass
08	Junior Suite 12	Category 3	100	0.5	23	4	Pass
08	Junior Suite 13	Category 3	100	0.4	12	2	Pass
08	Junior Suite 2	Category 3	100	0.4	17	3	Pass
08	Junior Suite 3	Category 3	100	0.4	14	3	Pass
08	Junior Suite 4	Category 3	100	0.4	13	3	Pass
08	Junior Suite 5	Category 3	100	0.4	14	3	Pass
08	Junior Suite 6	Category 3	100	0.4	14	3	Pass
08	Junior Suite 7	Category 3	100	0.4	15	3	Pass
08	Junior Suite 8	Category 3	100	0.4	15	3	Pass
08	Junior Suite 9	Category 3	100	0.4	15	3	Pass

Appendix A-8f

CIBSE TM52 calculation results: Scenario 6



INVESTORS
IN PEOPLE

Scenario 6

Occupied rooms passing the assessment	366
Occupied rooms failing the assessment	0
Unoccupied rooms	5
Total rooms modelled	371

Weather file:	Manchester_DSY3_2020High50...epw
Days data	365 (01-Jan to 31-Dec)
Days (summer)	153 (01-May to 30-Sep)
Data OK?	OK - Full summer

Floor	Room Name	Assessment category	Occupied days (%)	Criteria 1 (%Hrs Top-Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. ΔT)	Result
00	2 Bed Suite 06 (L)_Bedroom	Category 2	100	0.2	4	1	Pass
00	2 Bed Suite 06 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 01(L)_Bedroom	Category 2	100	0.6	6	2	Pass
00	3 Bed Suite 01(L)_Living/Kitchen	Category 2	100	0.6	4	1	Pass
00	3 Bed Suite 02 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 2 (L)_Bedroom	Category 2	100	0.2	5	1	Pass
00	3 Bed Suite 3 (L)_Bedroom	Category 2	100	0.3	6	1	Pass
00	3 Bed Suite 3 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 4 (L)_Bedroom	Category 2	100	0.2	4	1	Pass
00	3 Bed Suite 4 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 5 (L)_Bedroom	Category 2	100	0.1	2	1	Pass
00	3 Bed Suite 5 (L)_Hall	Category 2	0	0	0	0	N/A
00	Business Lounge	Category 3	100	0	0	0	Pass
00	Business Lounge (individual space)	Category 3	100	0	0	0	Pass
00	Business Lounge (individual space)	Category 3	100	0	0	0	Pass
00	Circulation	Category 2	100	0.2	3	1	Pass
00	Circulation	Category 2	100	0.4	5	1	Pass
00	Circulation	Category 3	100	2.8	9	1	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Commercial	Category 3	100	0	0	0	Pass
00	Gym /Yoga Studio	Category 3	100	0	0	0	Pass
00	Junior Suite 10	Category 2	100	0.1	2	1	Pass
00	Junior Suite 7	Category 2	100	0.1	2	1	Pass
00	Junior Suite 8	Category 2	100	0.1	3	1	Pass
00	Junior Suite 9	Category 2	100	0	0	0	Pass
00	Management	Category 3	100	0	0	0	Pass
00	Meeting Room	Category 3	100	0	0	0	Pass
00	Podcast Room	Category 3	100	0	0	0	Pass
00	Reception	Category 3	100	0	0	0	Pass
00	Social Lounge	Category 3	100	0	0	0	Pass
00	Wellfare	Category 3	100	0	0	0	Pass
00	Wellfare	Category 3	100	0	0	0	Pass
01	1 Bed Suite 1_Bedroom	Category 3	100	0	0	0	Pass
01	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.2	1	1	Pass
01	1 Bed Suite 23_Bedroom	Category 3	100	0	0	0	Pass
01	1 Bed Suite 23_Living/Kitchen	Category 3	100	0.3	2	1	Pass
01	2 Bed Suite 2 (U)_Bedroom	Category 2	100	0.5	6	1	Pass
01	2 Bed Suite 2 (U)_Living/Kitchen	Category 2	100	1.3	8	2	Pass
01	2 Bed Suite 3 (U)_Bedroom	Category 2	100	0.5	6	1	Pass
01	2 Bed Suite 3 (U)_Living/Kitchen	Category 2	100	1.3	8	2	Pass
01	2 Bed Suite 4 (U)_Bedroom	Category 2	100	0.5	6	1	Pass
01	2 Bed Suite 4 (U)_Living/Kitchen	Category 2	100	1.3	7	2	Pass
01	2 Bed Suite 6 (U)_Bedroom	Category 2	100	0.6	8	2	Pass
01	2 Bed Suite 6 (U)_Living/Kitchen	Category 2	100	0.6	4	1	Pass
01	3 Bed Suite 1 (U)_Bedroom	Category 2	100	0.8	9	2	Pass
01	3 Bed Suite 1 (U)_Bedroom	Category 2	100	0.7	7	2	Pass
01	3 Bed Suite 1 (U)_Living/Kitchen	Category 2	100	1.3	7	2	Pass
01	3 Bed Suite 5 (U)_Bedroom	Category 2	100	0.6	6	1	Pass
01	3 Bed Suite 5 (U)_Bedroom	Category 2	100	0.4	5	1	Pass
01	3 Bed Suite 5 (U)_Living/Kitchen	Category 2	100	1.2	7	2	Pass
01	Circulation	Category 3	100	0.7	7	1	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0.8	8	1	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Junior Suite 10	Category 3	100	0	0	0	Pass
01	Junior Suite 11	Category 3	100	0	0	0	Pass
01	Junior Suite 12	Category 3	100	0	0	0	Pass
01	Junior Suite 13	Category 3	100	0	0	0	Pass
01	Junior Suite 14	Category 3	100	0	0	0	Pass
01	Junior Suite 15	Category 3	100	0	0	0	Pass
01	Junior Suite 16	Category 3	100	0	0	0	Pass
01	Junior Suite 17	Category 3	100	0	0	0	Pass

01	Junior Suite 18	Category 3	100	0	0	0	Pass
01	Junior Suite 19	Category 3	100	0	0	0	Pass
01	Junior Suite 2	Category 3	100	0	0	0	Pass
01	Junior Suite 20	Category 3	100	0	0	0	Pass
01	Junior Suite 21	Category 3	100	0	0	0	Pass
01	Junior Suite 22	Category 3	100	0	0	0	Pass
01	Junior Suite 24	Category 3	100	0.3	5	1	Pass
01	Junior Suite 25	Category 3	100	0	0	0	Pass
01	Junior Suite 26	Category 3	100	0	0	0	Pass
01	Junior Suite 27	Category 3	100	0	0	0	Pass
01	Junior Suite 28	Category 3	100	0	0	0	Pass
01	Junior Suite 29	Category 3	100	0	0	0	Pass
01	Junior Suite 3	Category 3	100	0	0	0	Pass
01	Junior Suite 30	Category 3	100	0	0	0	Pass
01	Junior Suite 4	Category 3	100	0	0	0	Pass
01	Junior Suite 5	Category 3	100	0	0	0	Pass
01	Junior Suite 6	Category 3	100	0	0	0	Pass
01	Junior Suite 7	Category 3	100	0	0	0	Pass
01	Junior Suite 8	Category 3	100	0	0	0	Pass
01	Junior Suite 9	Category 3	100	0	0	0	Pass
02	1 Bed Suite 1_Bedroom	Category 3	100	0	0	0	Pass
02	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.4	3	1	Pass
02	Circulation	Category 2	100	1.8	11	2	Pass
02	Circulation	Category 3	100	0.2	3	1	Pass
02	Circulation	Category 3	100	0.3	5	1	Pass
02	Circulation	Category 3	100	0	0	0	Pass
02	Circulation	Category 3	100	0.2	3	1	Pass
02	Circulation	Category 3	100	0	0	0	Pass
02	Junior Suite 5	Category 3	100	0	0	0	Pass
02	Junior Suite 9	Category 3	100	0	0	0	Pass
02	Junior Suite 10	Category 3	100	0	0	0	Pass
02	Junior Suite 11	Category 3	100	0	0	0	Pass
02	Junior Suite 12	Category 3	100	0	0	0	Pass
02	Junior Suite 12	Category 3	100	0	0	0	Pass
02	Junior Suite 13	Category 2	100	0.5	6	1	Pass
02	Junior Suite 14	Category 2	100	0.6	7	2	Pass
02	Junior Suite 15	Category 2	100	0.4	6	1	Pass
02	Junior Suite 16	Category 2	100	0.2	5	1	Pass
02	Junior Suite 17	Category 2	100	0.2	5	1	Pass
02	Junior Suite 18	Category 2	100	0.2	3	1	Pass
02	Junior Suite 19	Category 2	100	0.2	3	1	Pass
02	Junior Suite 2	Category 3	100	0	0	0	Pass
02	Junior Suite 20	Category 2	100	0.2	5	1	Pass
02	Junior Suite 21	Category 2	100	0.5	6	1	Pass
02	Junior Suite 22	Category 3	100	0	0	0	Pass
02	Junior Suite 23	Category 3	100	0	0	0	Pass
02	Junior Suite 24	Category 3	100	0	0	0	Pass
02	Junior Suite 25	Category 3	100	0	0	0	Pass
02	Junior Suite 26	Category 3	100	0.2	4	1	Pass
02	Junior Suite 26	Category 3	100	0.3	4	1	Pass
02	Junior Suite 26	Category 3	100	0	0	0	Pass
02	Junior Suite 27	Category 3	100	0	0	0	Pass
02	Junior Suite 27	Category 3	100	0	0	0	Pass
02	Junior Suite 27	Category 3	100	0	0	0	Pass
02	Junior Suite 27	Category 3	100	0	0	0	Pass
02	Junior Suite 3	Category 3	100	0	0	0	Pass
02	Junior Suite 30	Category 3	100	0	0	0	Pass
02	Junior Suite 31	Category 3	100	0	0	0	Pass
02	Junior Suite 32	Category 3	100	0	0	0	Pass
02	Junior Suite 32	Category 3	100	0.2	3	1	Pass
02	Junior Suite 32	Category 3	100	0	0	0	Pass
02	Junior Suite 33	Category 3	100	0	0	0	Pass
02	Junior Suite 34	Category 3	100	0	0	0	Pass
02	Junior Suite 35	Category 3	100	0	0	0	Pass
02	Junior Suite 36	Category 3	100	0	0	0	Pass
02	Junior Suite 37	Category 3	100	0	0	0	Pass
02	Junior Suite 38	Category 3	100	0	0	0	Pass
02	Junior Suite 39	Category 3	100	0	0	0	Pass
02	Junior Suite 4	Category 3	100	0	0	0	Pass
02	Junior Suite 6	Category 3	100	0	0	0	Pass
02	Junior Suite 7	Category 3	100	0	0	0	Pass
02	Junior Suite 8	Category 3	100	0	0	0	Pass
03	1 Bed Suite 1_Bedroom	Category 3	100	0	0	0	Pass
03	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.4	3	1	Pass
03	Circulation	Category 2	100	2.1	12	2	Pass
03	Circulation	Category 3	100	0.3	5	1	Pass
03	Circulation	Category 3	100	0.3	4	1	Pass

03	Circulation	Category 3	100	0	0	0	Pass
03	Circulation	Category 3	100	0	1	1	Pass
03	Circulation	Category 3	100	0.3	5	1	Pass
03	Circulation	Category 3	100	0	0	0	Pass
03	Junior Suite 5	Category 3	100	0	0	0	Pass
03	Junior Suite 9	Category 3	100	0	0	0	Pass
03	Junior Suite 10	Category 3	100	0	0	0	Pass
03	Junior Suite 11	Category 3	100	0	0	0	Pass
03	Junior Suite 12	Category 3	100	0	0	0	Pass
03	Junior Suite 12	Category 3	100	0	1	1	Pass
03	Junior Suite 13	Category 2	100	0.3	6	1	Pass
03	Junior Suite 14	Category 2	100	0.3	6	1	Pass
03	Junior Suite 15	Category 2	100	0.3	6	1	Pass
03	Junior Suite 16	Category 2	100	0.3	6	1	Pass
03	Junior Suite 17	Category 2	100	0.3	6	1	Pass
03	Junior Suite 18	Category 2	100	0.2	4	1	Pass
03	Junior Suite 19	Category 2	100	0.2	4	1	Pass
03	Junior Suite 2	Category 3	100	0	0	0	Pass
03	Junior Suite 20	Category 2	100	0.3	6	1	Pass
03	Junior Suite 21	Category 2	100	0.6	8	2	Pass
03	Junior Suite 22	Category 3	100	0	0	0	Pass
03	Junior Suite 23	Category 3	100	0	0	0	Pass
03	Junior Suite 24	Category 3	100	0	0	0	Pass
03	Junior Suite 25	Category 3	100	0	0	0	Pass
03	Junior Suite 26	Category 3	100	0.3	4	1	Pass
03	Junior Suite 26	Category 3	100	0.3	4	1	Pass
03	Junior Suite 26	Category 3	100	0	0	0	Pass
03	Junior Suite 27	Category 3	100	0	0	0	Pass
03	Junior Suite 27	Category 3	100	0	0	0	Pass
03	Junior Suite 27	Category 3	100	0	0	0	Pass
03	Junior Suite 3	Category 3	100	0	0	0	Pass
03	Junior Suite 30	Category 3	100	0	0	0	Pass
03	Junior Suite 31	Category 3	100	0	0	0	Pass
03	Junior Suite 32	Category 3	100	0	0	0	Pass
03	Junior Suite 32	Category 3	100	0	0	0	Pass
03	Junior Suite 32	Category 3	100	0.2	3	1	Pass
03	Junior Suite 33	Category 3	100	0	0	0	Pass
03	Junior Suite 34	Category 3	100	0	0	0	Pass
03	Junior Suite 35	Category 3	100	0	0	0	Pass
03	Junior Suite 36	Category 3	100	0	0	0	Pass
03	Junior Suite 37	Category 3	100	0	0	0	Pass
03	Junior Suite 38	Category 3	100	0	0	0	Pass
03	Junior Suite 39	Category 3	100	0	0	0	Pass
03	Junior Suite 4	Category 3	100	0	0	0	Pass
03	Junior Suite 6	Category 3	100	0	0	0	Pass
03	Junior Suite 7	Category 3	100	0	0	0	Pass
03	Junior Suite 8	Category 3	100	0	0	0	Pass
04	1 Bed Suite 1_Bedroom	Category 3	100	0	0	0	Pass
04	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.4	3	1	Pass
04	1 Bed Suite 23_Living/Kitchen	Category 3	100	0.3	2	1	Pass
04	1 Bed Suite 31_Bedroom	Category 3	100	0	1	1	Pass
04	Acc Suite 24	Category 3	100	0	0	0	Pass
04	Acc Suite 25	Category 3	100	0	0	0	Pass
04	Circulation	Category 2	100	2.2	12	2	Pass
04	Circulation	Category 3	100	0	0	0	Pass
04	Circulation	Category 3	100	0	0	0	Pass
04	Circulation	Category 3	100	0.5	6	1	Pass
04	Circulation	Category 3	100	0.2	4	1	Pass
04	Circulation	Category 3	100	0.5	5	1	Pass
04	Circulation	Category 3	100	0	0	0	Pass
04	Junior Suite 10	Category 3	100	0.1	2	1	Pass
04	Junior Suite 11	Category 3	100	0	0	0	Pass
04	Junior Suite 12	Category 3	100	0	0	0	Pass
04	Junior Suite 13	Category 2	100	0.3	6	1	Pass
04	Junior Suite 14	Category 2	100	0.3	6	1	Pass
04	Junior Suite 15	Category 2	100	0.3	6	1	Pass
04	Junior Suite 16	Category 2	100	0.3	6	1	Pass
04	Junior Suite 17	Category 2	100	0.3	6	1	Pass
04	Junior Suite 18	Category 2	100	0.2	5	1	Pass
04	Junior Suite 19	Category 2	100	0.2	5	1	Pass
04	Junior Suite 2	Category 3	100	0	0	0	Pass
04	Junior Suite 20	Category 2	100	0.4	6	1	Pass
04	Junior Suite 21	Category 2	100	0.8	8	2	Pass
04	Junior Suite 22	Category 3	100	0	1	1	Pass
04	Junior Suite 22	Category 3	100	0	0	0	Pass
04	Junior Suite 23	Category 3	100	0	0	0	Pass
04	Junior Suite 26	Category 3	100	0	0	0	Pass

04	Junior Suite 27	Category 3	100	0	0	0	Pass
04	Junior Suite 28	Category 3	100	0	0	0	Pass
04	Junior Suite 29	Category 3	100	0	0	0	Pass
04	Junior Suite 3	Category 3	100	0	0	0	Pass
04	Junior Suite 30	Category 3	100	0	0	0	Pass
04	Junior Suite 32	Category 3	100	0	0	0	Pass
04	Junior Suite 33	Category 3	100	0	0	0	Pass
04	Junior Suite 34	Category 3	100	0	0	0	Pass
04	Junior Suite 35	Category 3	100	0	0	0	Pass
04	Junior Suite 36	Category 3	100	0	0	0	Pass
04	Junior Suite 37	Category 3	100	0	0	0	Pass
04	Junior Suite 38	Category 3	100	0	0	0	Pass
04	Junior Suite 4	Category 3	100	0	0	0	Pass
04	Junior Suite 5	Category 3	100	0	0	0	Pass
04	Junior Suite 6	Category 3	100	0	0	0	Pass
04	Junior Suite 7	Category 3	100	0	0	0	Pass
04	Junior Suite 8	Category 3	100	0	0	0	Pass
04	Junior Suite 9	Category 3	100	0	0	0	Pass
05	1 Bed Suite 1_Bedroom	Category 3	100	0	0	0	Pass
05	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.4	3	1	Pass
05	1 Bed Suite 23_Living/Kitchen	Category 3	100	0.2	2	1	Pass
05	1 Bed Suite 31_Bedroom	Category 3	100	0	1	1	Pass
05	Acc Suite 24	Category 3	100	0	0	0	Pass
05	Acc Suite 25	Category 3	100	0	0	0	Pass
05	Circulation	Category 2	100	2.3	12	2	Pass
05	Circulation	Category 3	100	0.6	6	1	Pass
05	Circulation	Category 3	100	0.6	6	1	Pass
05	Circulation	Category 3	100	0.2	3	1	Pass
05	Circulation	Category 3	100	0	0	0	Pass
05	Circulation	Category 3	100	0	0	0	Pass
05	Circulation	Category 3	100	0	0	0	Pass
05	Junior Suite 10	Category 3	100	0.1	2	1	Pass
05	Junior Suite 11	Category 3	100	0	0	0	Pass
05	Junior Suite 12	Category 3	100	0	0	0	Pass
05	Junior Suite 13	Category 2	100	0.3	6	1	Pass
05	Junior Suite 14	Category 2	100	0.3	6	1	Pass
05	Junior Suite 15	Category 2	100	0.4	6	1	Pass
05	Junior Suite 16	Category 2	100	0.3	6	1	Pass
05	Junior Suite 17	Category 2	100	0.3	6	1	Pass
05	Junior Suite 18	Category 2	100	0.3	6	1	Pass
05	Junior Suite 19	Category 2	100	0.3	6	1	Pass
05	Junior Suite 2	Category 3	100	0	0	0	Pass
05	Junior Suite 20	Category 2	100	0.4	6	1	Pass
05	Junior Suite 21	Category 2	100	0.8	9	2	Pass
05	Junior Suite 22	Category 3	100	0	0	0	Pass
05	Junior Suite 22	Category 3	100	0.1	1	1	Pass
05	Junior Suite 23	Category 3	100	0	0	0	Pass
05	Junior Suite 26	Category 3	100	0	0	0	Pass
05	Junior Suite 27	Category 3	100	0	0	0	Pass
05	Junior Suite 28	Category 3	100	0	0	0	Pass
05	Junior Suite 29	Category 3	100	0	0	0	Pass
05	Junior Suite 3	Category 3	100	0	0	0	Pass
05	Junior Suite 30	Category 3	100	0	0	0	Pass
05	Junior Suite 32	Category 3	100	0	0	0	Pass
05	Junior Suite 33	Category 3	100	0	0	0	Pass
05	Junior Suite 34	Category 3	100	0	0	0	Pass
05	Junior Suite 35	Category 3	100	0	0	0	Pass
05	Junior Suite 36	Category 3	100	0	0	0	Pass
05	Junior Suite 37	Category 3	100	0	0	0	Pass
05	Junior Suite 38	Category 3	100	0	0	0	Pass
05	Junior Suite 4	Category 3	100	0	0	0	Pass
05	Junior Suite 5	Category 3	100	0	0	0	Pass
05	Junior Suite 6	Category 3	100	0	0	0	Pass
05	Junior Suite 7	Category 3	100	0	0	0	Pass
05	Junior Suite 8	Category 3	100	0	0	0	Pass
05	Junior Suite 9	Category 3	100	0	0	0	Pass
06	1 Bed Suite 1_Bedroom	Category 3	100	0	0	0	Pass
06	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.5	3	1	Pass
06	Acc Suite 13	Category 2	100	0.2	5	1	Pass
06	Acc Suite 14	Category 2	100	0.2	5	1	Pass
06	Acc Suite 23	Category 3	100	0	0	0	Pass
06	Acc Suite 24	Category 3	100	0	0	0	Pass
06	Circulation	Category 2	100	2.4	12	2	Pass
06	Circulation	Category 3	100	0	0	0	Pass
06	Circulation	Category 3	100	0.3	4	1	Pass
06	Circulation	Category 3	100	0.2	3	1	Pass
06	Circulation	Category 3	100	0	0	0	Pass

06	Circulation	Category 3	100	0.7	7	1	Pass
06	Circulation	Category 3	100	0.3	5	1	Pass
06	Circulation	Category 3	100	0.8	7	1	Pass
06	Junior Suite 10	Category 3	100	0.1	2	1	Pass
06	Junior Suite 11	Category 3	100	0	1	1	Pass
06	Junior Suite 12	Category 3	100	0	0	0	Pass
06	Junior Suite 15	Category 2	100	0.3	6	1	Pass
06	Junior Suite 16	Category 2	100	0.3	6	1	Pass
06	Junior Suite 17	Category 2	100	0.3	6	1	Pass
06	Junior Suite 18	Category 2	100	0.3	6	1	Pass
06	Junior Suite 19	Category 2	100	0.4	6	1	Pass
06	Junior Suite 2	Category 3	100	0	0	0	Pass
06	Junior Suite 20	Category 2	100	0.7	9	2	Pass
06	Junior Suite 21	Category 3	100	0	0	0	Pass
06	Junior Suite 22	Category 3	100	0	0	0	Pass
06	Junior Suite 25	Category 3	100	0	0	0	Pass
06	Junior Suite 26	Category 3	100	0	0	0	Pass
06	Junior Suite 27	Category 3	100	0	0	0	Pass
06	Junior Suite 28	Category 3	100	0	0	0	Pass
06	Junior Suite 29	Category 3	100	0	0	0	Pass
06	Junior Suite 3	Category 3	100	0	0	0	Pass
06	Junior Suite 30	Category 3	100	0	0	0	Pass
06	Junior Suite 31	Category 3	100	0	0	0	Pass
06	Junior Suite 32	Category 3	100	0	0	0	Pass
06	Junior Suite 33	Category 3	100	0	0	0	Pass
06	Junior Suite 34	Category 3	100	0	0	0	Pass
06	Junior Suite 35	Category 3	100	0	0	0	Pass
06	Junior Suite 36	Category 3	100	0	0	0	Pass
06	Junior Suite 37	Category 3	100	0	0	0	Pass
06	Junior Suite 4	Category 3	100	0	0	0	Pass
06	Junior Suite 5	Category 3	100	0	0	0	Pass
06	Junior Suite 6	Category 3	100	0	0	0	Pass
06	Junior Suite 7	Category 3	100	0	0	0	Pass
06	Junior Suite 8	Category 3	100	0	0	0	Pass
06	Junior Suite 9	Category 3	100	0	0	0	Pass
07	1 Bed Suite 1_Bedroom	Category 3	100	0.1	1	1	Pass
07	1 Bed Suite 1_Living/Kitchen	Category 3	100	0.7	4	1	Pass
07	Acc Suite 14	Category 3	100	0	0	0	Pass
07	Acc Suite 15	Category 3	100	0	0	0	Pass
07	Circulation	Category 3	100	0	0	0	Pass
07	Circulation	Category 3	100	0.7	7	1	Pass
07	Circulation	Category 3	100	0.5	6	1	Pass
07	Junior Suite 10	Category 3	100	0	0	0	Pass
07	Junior Suite 11	Category 3	100	0	0	0	Pass
07	Junior Suite 12	Category 3	100	0	0	0	Pass
07	Junior Suite 13	Category 3	100	0	0	0	Pass
07	Junior Suite 2	Category 3	100	0	0	0	Pass
07	Junior Suite 3	Category 3	100	0	0	0	Pass
07	Junior Suite 4	Category 3	100	0	0	0	Pass
07	Junior Suite 5	Category 3	100	0	0	0	Pass
07	Junior Suite 6	Category 3	100	0	0	0	Pass
07	Junior Suite 7	Category 3	100	0	0	0	Pass
07	Junior Suite 8	Category 3	100	0	0	0	Pass
07	Junior Suite 9	Category 3	100	0	0	0	Pass
08	1 Bed Suite 1_Bedroom	Category 3	100	0.5	5	1	Pass
08	1 Bed Suite 1_Living/Kitchen	Category 3	100	1.4	6	2	Pass
08	Acc Suite 14	Category 3	100	0	1	1	Pass
08	Acc Suite 15	Category 3	100	0	1	1	Pass
08	Circulation	Category 3	100	0.3	4	1	Pass
08	Circulation	Category 3	100	1.8	13	2	Pass
08	Circulation	Category 3	100	0.7	7	1	Pass
08	Junior Suite 10	Category 3	100	1	8	2	Pass
08	Junior Suite 11	Category 3	100	1.1	8	2	Pass
08	Junior Suite 12	Category 3	100	0.2	4	1	Pass
08	Junior Suite 13	Category 3	100	0	1	1	Pass
08	Junior Suite 2	Category 3	100	0.4	4	1	Pass
08	Junior Suite 3	Category 3	100	0.3	4	1	Pass
08	Junior Suite 4	Category 3	100	0.2	4	1	Pass
08	Junior Suite 5	Category 3	100	0.2	4	1	Pass
08	Junior Suite 6	Category 3	100	0.2	4	1	Pass
08	Junior Suite 7	Category 3	100	0.4	4	1	Pass
08	Junior Suite 8	Category 3	100	0.4	4	1	Pass
08	Junior Suite 9	Category 3	100	0.5	5	2	Pass

Appendix A-8g

CIBSE TM52 calculation results: Scenario 7



INVESTORS
IN PEOPLE

Scenario 7

Occupied rooms passing the assessment	366
Occupied rooms failing the assessment	0
Unoccupied rooms	5
Total rooms modelled	371

Weather file:	Manchester_DSY1_2020High50...epw
Days data	365 (01-Jan to 31-Dec)
Days (summer)	153 (01-May to 30-Sep)
Data OK?	OK - Full summer

Floor	Room Name	Assessment category	Occupied days (%)	Criteria 1 (%Hrs Top-Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. ΔT)	Result
00	2 Bed Suite 06 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	2 Bed Suite 06 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 01(L)_Bedroom	Category 2	100	0	0	0	Pass
00	3 Bed Suite 01(L)_Living/Kitchen	Category 2	100	0	0	0	Pass
00	3 Bed Suite 02 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 2 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	3 Bed Suite 3 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	3 Bed Suite 3 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 4 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	3 Bed Suite 4 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 5 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	3 Bed Suite 5 (L)_Hall	Category 2	0	0	0	0	N/A
00	Business Lounge	Category 3	100	0	0	0	Pass
00	Business Lounge (individual space)	Category 3	100	0	0	0	Pass
00	Business Lounge (individual space)	Category 3	100	0	0	0	Pass
00	Circulation	Category 2	100	0	0	0	Pass
00	Circulation	Category 2	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Commercial	Category 3	100	0	0	0	Pass
00	Gym /Yoga Studio	Category 3	100	0	0	0	Pass
00	Junior Suite 10	Category 2	100	0	0	0	Pass
00	Junior Suite 7	Category 2	100	0	0	0	Pass
00	Junior Suite 8	Category 2	100	0	0	0	Pass
00	Junior Suite 9	Category 2	100	0	0	0	Pass
00	Management	Category 3	100	0	0	0	Pass
00	Meeting Room	Category 3	100	0	0	0	Pass
00	Podcast Room	Category 3	100	0	0	0	Pass
00	Reception	Category 3	100	0	0	0	Pass
00	Social Lounge	Category 3	100	0	0	0	Pass
00	Wellfare	Category 3	100	0	0	0	Pass
00	Wellfare	Category 3	100	0	0	0	Pass
01	1 Bed Suite 1_Bedroom	Category 3	100	0	0	0	Pass
01	1 Bed Suite 1_Living/Kitchen	Category 3	100	0	0	0	Pass
01	1 Bed Suite 23_Bedroom	Category 3	100	0	0	0	Pass
01	1 Bed Suite 23_Living/Kitchen	Category 3	100	0	0	0	Pass
01	2 Bed Suite 2 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	2 Bed Suite 2 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	2 Bed Suite 3 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	2 Bed Suite 3 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	2 Bed Suite 4 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	2 Bed Suite 4 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	2 Bed Suite 6 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	2 Bed Suite 6 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	3 Bed Suite 1 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	3 Bed Suite 1 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	3 Bed Suite 1 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	3 Bed Suite 5 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	3 Bed Suite 5 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	3 Bed Suite 5 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Junior Suite 10	Category 3	100	0	0	0	Pass
01	Junior Suite 11	Category 3	100	0	0	0	Pass
01	Junior Suite 12	Category 3	100	0	0	0	Pass
01	Junior Suite 13	Category 3	100	0	0	0	Pass
01	Junior Suite 14	Category 3	100	0	0	0	Pass
01	Junior Suite 15	Category 3	100	0	0	0	Pass
01	Junior Suite 16	Category 3	100	0	0	0	Pass
01	Junior Suite 17	Category 3	100	0	0	0	Pass

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Appendix A-8h

CIBSE TM52 calculation results: Scenario 8



INVESTORS
IN PEOPLE

Scenario 8

Occupied rooms passing the assessment	366
Occupied rooms failing the assessment	0
Unoccupied rooms	5
Total rooms modelled	371

Weather file:	Manchester_DSY2_2020High50...epw
Days data	365 (01-Jan to 31-Dec)
Days (summer)	153 (01-May to 30-Sep)
Data OK?	OK - Full summer

Floor	Room Name	Assessment category	Occupied days (%)	Criteria 1 (%Hrs Top-Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. ΔT)	Result
00	2 Bed Suite 06 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	2 Bed Suite 06 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 01(L)_Bedroom	Category 2	100	0	0	0	Pass
00	3 Bed Suite 01(L)_Living/Kitchen	Category 2	100	0	0	0	Pass
00	3 Bed Suite 02 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 2 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	3 Bed Suite 3 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	3 Bed Suite 3 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 4 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	3 Bed Suite 4 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 5 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	3 Bed Suite 5 (L)_Hall	Category 2	0	0	0	0	N/A
00	Business Lounge	Category 3	100	0	0	0	Pass
00	Business Lounge (individual space)	Category 3	100	0	0	0	Pass
00	Business Lounge (individual space)	Category 3	100	0	0	0	Pass
00	Circulation	Category 2	100	0	0	0	Pass
00	Circulation	Category 2	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Commercial	Category 3	100	0	0	0	Pass
00	Gym /Yoga Studio	Category 3	100	0	0	0	Pass
00	Junior Suite 10	Category 2	100	0	0	0	Pass
00	Junior Suite 7	Category 2	100	0	0	0	Pass
00	Junior Suite 8	Category 2	100	0	0	0	Pass
00	Junior Suite 9	Category 2	100	0	0	0	Pass
00	Management	Category 3	100	0	0	0	Pass
00	Meeting Room	Category 3	100	0	0	0	Pass
00	Podcast Room	Category 3	100	0	0	0	Pass
00	Reception	Category 3	100	0	0	0	Pass
00	Social Lounge	Category 3	100	0	0	0	Pass
00	Wellfare	Category 3	100	0	0	0	Pass
00	Wellfare	Category 3	100	0	0	0	Pass
01	1 Bed Suite 1_Bedroom	Category 3	100	0	0	0	Pass
01	1 Bed Suite 1_Living/Kitchen	Category 3	100	0	0	0	Pass
01	1 Bed Suite 23_Bedroom	Category 3	100	0	0	0	Pass
01	1 Bed Suite 23_Living/Kitchen	Category 3	100	0	0	0	Pass
01	2 Bed Suite 2 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	2 Bed Suite 2 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	2 Bed Suite 3 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	2 Bed Suite 3 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	2 Bed Suite 4 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	2 Bed Suite 4 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	2 Bed Suite 6 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	2 Bed Suite 6 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	3 Bed Suite 1 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	3 Bed Suite 1 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	3 Bed Suite 1 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	3 Bed Suite 5 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	3 Bed Suite 5 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	3 Bed Suite 5 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Junior Suite 10	Category 3	100	0	0	0	Pass
01	Junior Suite 11	Category 3	100	0	0	0	Pass
01	Junior Suite 12	Category 3	100	0	0	0	Pass
01	Junior Suite 13	Category 3	100	0	0	0	Pass
01	Junior Suite 14	Category 3	100	0	0	0	Pass
01	Junior Suite 15	Category 3	100	0	0	0	Pass
01	Junior Suite 16	Category 3	100	0	0	0	Pass
01	Junior Suite 17	Category 3	100	0	0	0	Pass

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Appendix A-8i

CIBSE TM52 calculation results: Scenario 9



INVESTORS
IN PEOPLE

Scenario 9

Occupied rooms passing the assessment	366
Occupied rooms failing the assessment	0
Unoccupied rooms	5
Total rooms modelled	371

Weather file:	Manchester_DSY3_2020High50...epw
Days data	365 (01-Jan to 31-Dec)
Days (summer)	153 (01-May to 30-Sep)
Data OK?	OK - Full summer

Floor	Room Name	Assessment category	Occupied days (%)	Criteria 1 (%Hrs Top-Tmax>=1K)	Criteria 2 (Max. Daily Deg.Hrs)	Criteria 3 (Max. ΔT)	Result
00	2 Bed Suite 06 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	2 Bed Suite 06 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 01(L)_Bedroom	Category 2	100	0	0	0	Pass
00	3 Bed Suite 01(L)_Living/Kitchen	Category 2	100	0	0	0	Pass
00	3 Bed Suite 02 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 2 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	3 Bed Suite 3 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	3 Bed Suite 3 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 4 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	3 Bed Suite 4 (L)_Hall	Category 2	0	0	0	0	N/A
00	3 Bed Suite 5 (L)_Bedroom	Category 2	100	0	0	0	Pass
00	3 Bed Suite 5 (L)_Hall	Category 2	0	0	0	0	N/A
00	Business Lounge	Category 3	100	0	0	0	Pass
00	Business Lounge (individual space)	Category 3	100	0	0	0	Pass
00	Business Lounge (individual space)	Category 3	100	0	0	0	Pass
00	Circulation	Category 2	100	0	0	0	Pass
00	Circulation	Category 2	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Circulation	Category 3	100	0	0	0	Pass
00	Commercial	Category 3	100	0	0	0	Pass
00	Gym /Yoga Studio	Category 3	100	0	0	0	Pass
00	Junior Suite 10	Category 2	100	0	0	0	Pass
00	Junior Suite 7	Category 2	100	0	0	0	Pass
00	Junior Suite 8	Category 2	100	0	0	0	Pass
00	Junior Suite 9	Category 2	100	0	0	0	Pass
00	Management	Category 3	100	0	0	0	Pass
00	Meeting Room	Category 3	100	0	0	0	Pass
00	Podcast Room	Category 3	100	0	0	0	Pass
00	Reception	Category 3	100	0	0	0	Pass
00	Social Lounge	Category 3	100	0	0	0	Pass
00	Wellfare	Category 3	100	0	0	0	Pass
00	Wellfare	Category 3	100	0	0	0	Pass
01	1 Bed Suite 1_Bedroom	Category 3	100	0	0	0	Pass
01	1 Bed Suite 1_Living/Kitchen	Category 3	100	0	0	0	Pass
01	1 Bed Suite 23_Bedroom	Category 3	100	0	0	0	Pass
01	1 Bed Suite 23_Living/Kitchen	Category 3	100	0	0	0	Pass
01	2 Bed Suite 2 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	2 Bed Suite 2 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	2 Bed Suite 3 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	2 Bed Suite 3 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	2 Bed Suite 4 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	2 Bed Suite 4 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	2 Bed Suite 6 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	2 Bed Suite 6 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	3 Bed Suite 1 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	3 Bed Suite 1 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	3 Bed Suite 1 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	3 Bed Suite 5 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	3 Bed Suite 5 (U)_Bedroom	Category 2	100	0	0	0	Pass
01	3 Bed Suite 5 (U)_Living/Kitchen	Category 2	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Circulation	Category 3	100	0	0	0	Pass
01	Junior Suite 10	Category 3	100	0	0	0	Pass
01	Junior Suite 11	Category 3	100	0	0	0	Pass
01	Junior Suite 12	Category 3	100	0	0	0	Pass
01	Junior Suite 13	Category 3	100	0	0	0	Pass
01	Junior Suite 14	Category 3	100	0	0	0	Pass
01	Junior Suite 15	Category 3	100	0	0	0	Pass
01	Junior Suite 16	Category 3	100	0	0	0	Pass
01	Junior Suite 17	Category 3	100	0	0	0	Pass

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