

Environmental Standards Statement

Premier House, Renaissance

August 2022



Turley
Sustainability

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Client

Property Alliance Group and Starwood Capital Group

Turley Reference

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1. Introduction

1.1 Introduction

This Environmental Standards Statement has been prepared by Turley on behalf of Deansgate SOF Alliance LeaseCo Limited, a joint venture between Property Alliance Group (PAG) and an affiliate of Starwood Capital (SCG), to support a full planning application for the development of new office space on the site of the former Premier House building. The development will deliver high quality new workspace with retail/ leisure uses at ground floor level, fronting Deansgate.

This Statement provides detail of the various measures incorporated into the development proposals to ensure suitable levels of sustainability performance in accordance with local and national planning policy. It should be read alongside supporting documents such as the Design and Access Statement, Planning Statement, and Circular Economy Statement.

1.2 Site Context

The application site forms part of the wider Renaissance hotel complex, which is located at the northern end of Deansgate in Manchester City Centre. The wider site fronts onto Deansgate, Blackfriars Street, Victoria Bridge Street, and the River Irwell.

The Renaissance complex comprised of a vacant 15-storey, 203-bedroom hotel building, a multi-storey car park, a restaurant, and a dilapidated former office building (Premier House) which had been vacant for a significant number of years. This application relates to/ proposes the development of a new office building on the site of Premier House. A separate prior approval planning application has

been submitted for the full demolition of Premier House.

The extent of the application site is shown on the Location Plan submitted with the planning application, illustrated in **Figure 1** overleaf.

1.3 Proposed Development

The proposal is for a new office-led development on the site of the former Premier House building, to create a new five-storey building providing high quality business space with new retail/leisure floorspace at ground level fronting Deansgate.

In terms of public realm and landscape, the current application for Premier House includes the landscape proposals to the back of pavement along Blackfriars and Deansgate, which is within the Applicant's ownership. The Applicant is proposing further public realm as part of the wider Masterplan vision, including aspirations to transform Deansgate and the frontage to the River Irwell. However, these wider public realm proposals are subject to ongoing discussions with key stakeholders including Manchester City Council Highways and may therefore need to be applied for under a separate planning application.

The planning description for the proposed development is as follows:

"Full planning application for erection of 5-storey office-led mixed use development at site of former Premier House office building (following demolition of the existing structure with the exception of structural elements that tie in with the Renaissance Hotel) comprising new office space (Use Class E) (floors 1-4) with ground floor reception area and commercial units x 4 (retail/ food and beverage floorspace (Class E/ Sui Generis Drinking Establishment Use), amendments to existing

servicing arrangements including new service yard entrance, new rooftop amenity space for use of occupiers of floors 1-4, new roof top plant, new public realm and landscaping and supporting infrastructure and ancillary facilities including changing and shower facilities, refuse store, plant areas, cycle store and other ancillary facilities within lower ground floor.”

An illustration of the proposed redevelopment is shown in **Figure 2** overleaf.

1.4 Document Structure

Chapter 2 of this report provides an overview of relevant national and local legislation, planning policy and guidance.

Chapter 3 provides detail of the sustainability and energy strategy of the proposed development, in line with local Planning Policy.

Chapter 4 provides details of the BREEAM strategy, credits targeted and how the criteria will be met.

Please note the terms “carbon”, “carbon dioxide (CO₂)” and “greenhouse gases (GHGs)” are used interchangeably in this Statement depending on the terminology of referenced documents etc.

Figure 1: Site Location [Jon Matthews Architects]

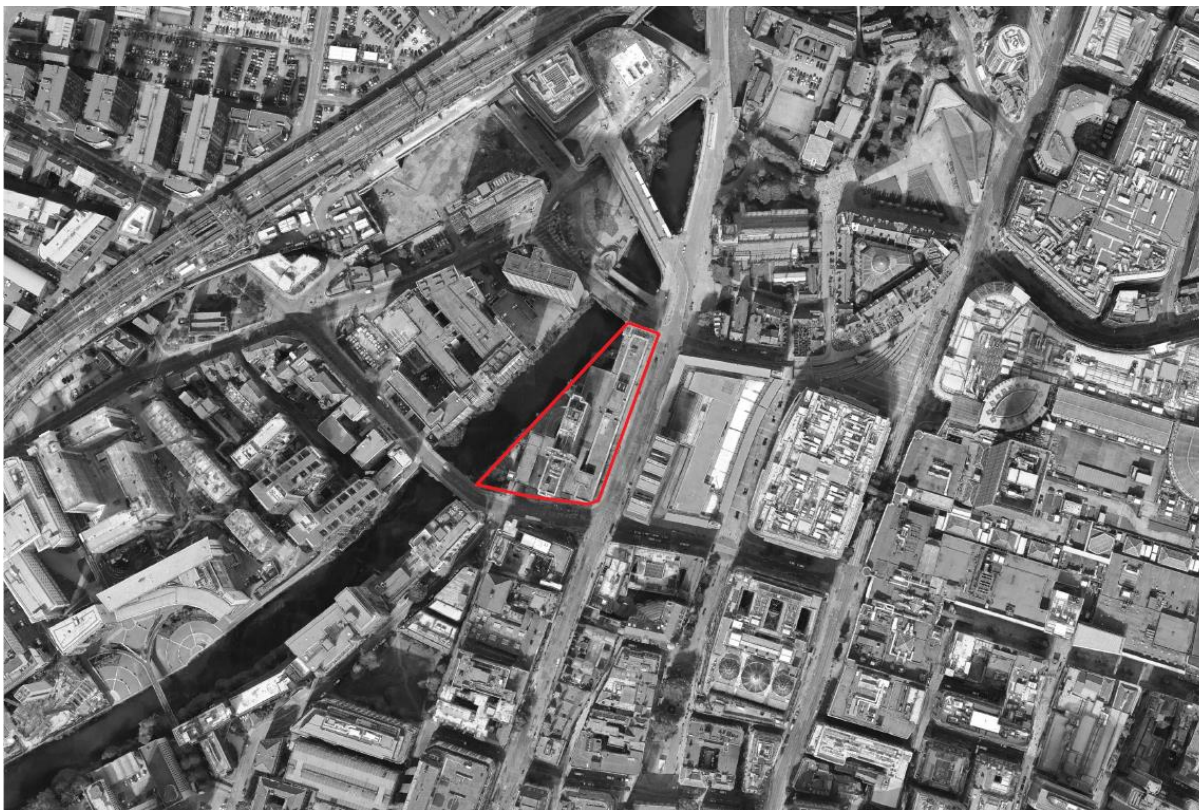


Figure 2: Illustration of the Proposed Development [Jon Matthews Architects]



2. Policy Context

This chapter provides an overview of the relevant sustainability planning policy and guidance from a national and local perspective.

2.1 National Policy

This section sets out a summary of current national guidance and policy in relation to sustainable development.

2.1.1 National Planning Policy Framework

The National Planning Policy Framework¹ (NPPF) provides a framework for the development of locally prepared plans and the government's planning policies for England and how these are expected to be applied.

Paragraph 7 of the NPPF states that: *'the purpose of the planning system is to contribute to the achievement of sustainable development'*.

Paragraph 8 explains that, to deliver sustainable development, the planning system has three overarching objectives which are interdependent and must be pursued in mutually supportive ways.



An **economic** objective to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure.



A **social** objective supporting strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and



An **environmental** objective contributing to protecting and enhancing our natural, built and historic environment; including, making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low economy.

These objectives are key to the development of plans and the NPPF sets out a number of key themes for consideration which guide the preparation of local plans and policies, ensuring the delivery of sustainable development.

The July 2021 update to the NPPF recognises the role planning has to play in support of the UK's pursuit of the United Nations Sustainable Development Goals (UNSDGs) which address social progress, economic wellbeing and environmental

¹ [UK Government | NPPF](#)

protection². Example UNSDGs are presented in **Figure 3**.

Figure 3: Example UN SDGs



2.1.2 Planning Practice Guidance

Planning Practice Guidance (PPG) provides further advice on various planning issues associated with development, including those linked to sustainability and renewable energy and underpins the policies within the NPPF.

PPG is a material consideration in planning decisions and should generally be followed unless there are clear reasons not to. It sets out how local authorities should include policies that protect the local environment and strategies to mitigate and adapt to climate change and supports developments that are functional and adaptable for the future.

The March 2019 PPG update confirmed that Local Authorities have the option to set technical requirements exceeding the minimum requirements of the Building Regulations in respect of access, water and space where sufficient evidence is produced to justify the target.

2.1.3 National Design Guide

The National Design Guide is based on the national planning policy practice guidance and objective for good design as set out in the NPPF. The Guide introduces ten characteristics of well-designed places which work together to create developments Character and Community, while positively addressing environmental issues affecting climate.

2.1.4 Building Regulations

Whilst not planning policy, the Building Regulations (and specifically Approved Document Part L: Conservation of Fuel and Power) set out the requirements for energy and carbon performance in new buildings.

Periodic updates to these national regulations will drive energy efficiency and carbon reduction improvements. Government has stated that developers will continue to have flexibility in how they meet carbon reduction targets; but that the emphasis is on using a “fabric first” approach.

On 15th June 2022, the Building Regulations were updated as an interim step towards part of the roadmap to the ‘full’ Future Homes and Buildings Standard, which comes into effect in 2025. The regulations aim to deliver buildings that are of a higher quality, with lower energy bills and reduce GHG emissions by around 30% for new homes and 27% for non-domestic buildings. There is a transition period of one year from this date; this will allow any new building, where plans have been submitted before 15th June, one year to make a meaningful start and be allowed to comply with the previous regulations. These transitions apply at a plot level, not at a site level.

In addition, the UK government has now updated the Building Regulations with a new Approved Document, Part O: Overheating. As of 15th June 2022, this standard is now in place. However, these regulations do not apply to this project as building notice was submitted prior to the 15th June 2022

² [UN Sustainable Development Goals](#)

deadline, and work on site is scheduled to commence prior to the 15th June 2023 cut off.

Part O sets out new requirements for mitigating overheating, specifying that residential developments must limit unwanted solar gains in the summer and provide means to remove heat. Compliance with Part O can be demonstrated using two methods to demonstrate the risk of overheating from rising summer temperatures has been mitigated:

- Following a simplified prescribed glazing and free area ratio; or,
- Use of a Dynamic Simulation Modelling.

2.2 Local Planning Policy

Current and emerging Manchester City Council planning policy relating to sustainable development, energy and climate change is summarised below.

2.2.1 Manchester Core Strategy Development Plan Document (2012)

Manchester's Core Strategy (2012)³, is the key document in the Manchester Local Plan. It sets out the long-term strategic policies for Manchester's future development and forms the framework against which planning applications are assessed. The following Core Strategy policies are of greatest relevance to sustainable development and the focus of this Statement.

Policy EN4 – Reducing CO₂ emissions by enabling low and zero Carbon Development – Development should be designed in accordance with the energy hierarchy to reduce energy demand through active and passive design measures meeting residual requirements through the use of zero carbon, renewable energy technologies. Developments are encouraged to take into account the following principles:

- Located and designed in a manner that allows advantage to be taken of opportunities for low

and zero carbon energy supplies where possible.

- Where possible new development and retrofit projects will be used as a mechanism to help improve the energy efficiency and where possible provide low and zero carbon energy to existing buildings.
- Where appropriate, new development and retrofit projects are encouraged to connect to and/or make commitments to low or zero carbon energy schemes and/or to incorporate provision to enable future connection to any existing/potential decentralised energy networks.

Policy EN6 – Target framework for CO₂ reductions from low or zero carbon energy supplies – Applications for development over 10 dwellings or 1,000m² floor area are expected to meet sustainability targets which vary depending on the scale of the development, where feasible.

Development that meets the criteria above is required to be accompanied by an energy statement which sets out the projected regulated energy demand and associated carbon emissions and how the following targets will be met. Development below the above thresholds is expected to meet the targets but does not need to have an accompanying energy statement.

For the purpose of this policy, development is split into three target categories:

Target 1 - Network development areas: Locations where the proximity of new buildings, the mix of use and density of development provides the right conditions to support district heating.

Target 2 - Electricity intense areas: Locations where the predominant building type has all electric fit out, such as retail units and leisure complexes.

³ https://secure.manchester.gov.uk/downloads/download/5672/core_strategy

Target 3 – Micro-generation areas: Locations where lower densities and fragmented mix of uses tend to mean that only building scale solutions are practical.

An Energy Assessment is required to be submitted, and developers are permitted to use green infrastructure elements to contribute to the carbon reduction requirements provided adequate evidence is provided.

Table 1: Manchester Core Strategy CO₂ Targets

Target	CO ₂ Reduction
1	CHP/district heating or connection or where not feasible 15% increase on Part L 2010
2	10% increase on Part L 2010
3	15% increase on Part L 2010

Policy EN8 – Adaptation to Climate Change – All new development is expected to be adaptable to climate change and developments should have consideration of adaptation measures including:

- Minimising flood risk through sustainable drainage systems.
- Reducing the urban heat island effect through green infrastructure.
- Minimising overheating through passive design.
- The opportunity to provide linked and diverse green space to enhance natural habitats which will assist species adaptation.

Policy DM1 - Development Management – All new development should have regard to a range of sustainability issues including site location, accessibility, waste management, biodiversity and flood risk, as well as incorporating sustainable construction techniques which includes the application of BREEAM.

Policy CC5 – Transport – Developers should work to ensure that all users are able to access development by sustainable means, especially taking account of times when developments are likely to be busiest.

Policy EN9 - Green Infrastructure – New development is expected to maintain existing green infrastructure in terms of its quantity, quality and multiple function. Developers are also encouraged to enhance existing green infrastructure where possible.

Policy EN 14 - Flood Risk – Development should be directed away from sites at the greatest risk of flooding, and towards sites with little or no risk of flooding.

Policy EN 17 - Water Quality – development should avoid adverse impact on water quality, including during the construction phase, and minimise surface run-off.

Policy EN 19 Waste – requires all developers to demonstrate the proposal's consistency with the principles of the waste hierarchy.

Policy DM 1 - Development Management – New development should have regard to the following specific issues:

- Appropriate siting, layout, scale, form, massing, materials and detail.
- Impact on the surrounding areas in terms of the design, scale and appearance of the proposed development.
- Development should have regard to the character of the surrounding area.
- Accessibility: buildings and neighbourhoods fully accessible to disabled people, access to new development by sustainable transport modes.
- Design for health.
- Refuse storage and collection.

2.2.2 Guide to Development in Manchester Supplementary Planning Document (SPD) (2007)

This Guide to Development Supplementary Planning Document (SPD) (2007)⁴ provides guidance to develop and enhance environments within Manchester which are visually attractive, have a unique and positive sense of place and where properly caters for the functions which it accommodates, both now and in the future.

Chapter 4 of the SPD sets out Manchester City Council's expectations on the content of Environmental Standards Statements.

2.2.3 Places for Everyone

Until December 2020 a joint development plan document of the ten Greater Manchester local authorities was being prepared, known as the Greater Manchester Spatial Framework (GMSF). However, progression of the GMSF ceased following the decision by Stockport Council to withdraw.

Instead, a joint committee formed by the nine other boroughs has been formed to prepare 'Places for Everyone' (PfE), a joint development plan for jobs, new homes and sustainable growth across these boroughs.

Places for Everyone: Publication Plan⁵ was published in July 2021, with a period for representations taking place between 9th August and 3rd October 2021. The Greater Manchester Combined Authority submitted the plan to the Secretary of State for examination on 14th February 2022

PfE sets out a number of ambitious sustainability policies, accounting for climate mitigation and adaptation, social value, economic growth and the natural environment.

Policies include a requirement for new commercial development to achieve at least BREEAM 'Excellent'

standard for the Ene 01 Reduction of Energy Use and Carbon emissions credit issue, rising to 'Outstanding' from 2038.

Development will be expected to adopt a net zero carbon approach to operational carbon up to 2028, and incorporate construction carbon from then onwards. However, the practicalities of this policy including carbon calculation method and offset payments have not been fully confirmed yet.

Development should also achieve a net gain in biodiversity of at least 10%.

The policies within PfE are not considered further within this statement, due to its current stage of publication. However, the aspiration of Greater Manchester to become net zero carbon by 2038 is supported by the Applicants.

2.2.4 Local Plan Issues Consultation

Manchester City Council Local Plan Issues Consultation (February 2020)⁶ explains how the new Local Plan will contribute to a zero carbon city by providing the spatial expression in support of the Council's intention to move towards a zero carbon Manchester by 2038 at the latest. The Issues Consultation covers a range of issues that will have a direct bearing on successfully meeting the zero carbon challenge by 2038.

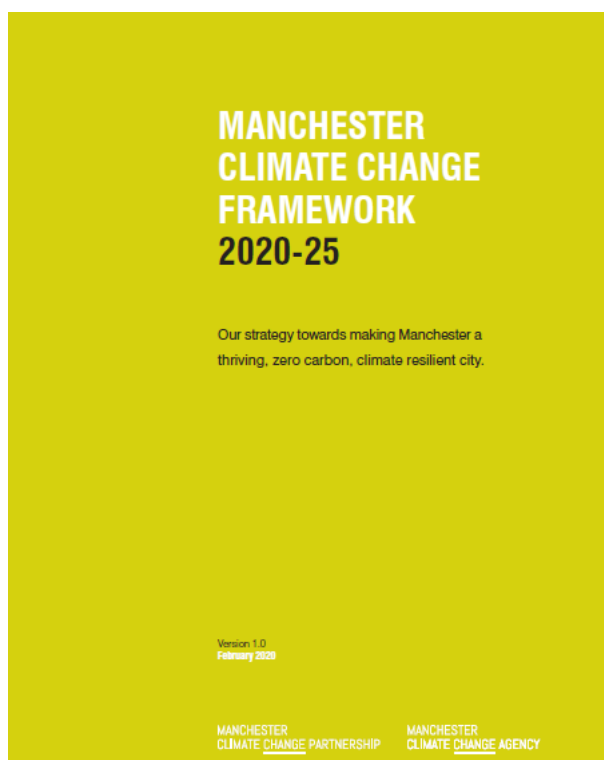
⁴ https://secure.manchester.gov.uk/site/scripts/download_info.php?downloadID=644&fileID=1424

⁵ <https://www.greatermanchester-ca.gov.uk/media/4682/places-for-everyone-compressed.pdf>

⁶ https://manchester-consult.objective.co.uk/portal/planning/issues_and_options_2020/lpi?pointId=5581804

2.2.5 Manchester Climate Change Framework 2020-25

The Manchester Climate Change Framework 2020-25 (February 2020)⁷ builds on the Draft Manchester Zero Carbon Framework 2020-38 (published February 2019) and Manchester City Council's declaration of a climate emergency in July 2019.



The Framework sets the following objectives to be met by 2025:

Objective 1: Staying within our carbon budgets – including reducing CO₂ emission from our homes, workplaces and ground transport by at least 50% during 2020-25.

Objective 2: Climate adaptation and resilience – adapting the city's buildings, infrastructure and natural environment to the changing climate.

Objective 3: Health and wellbeing – improving the health and wellbeing of everyone in Manchester

through actions that also contribute to our climate change mitigation and adaption objectives.

Objective 4: Inclusive, zero carbon and climate resilient economy – ensuring Manchester establishes an inclusive, zero carbon and climate resilient economy where everyone can benefit.

2.2.6 Validation Requirements

Manchester City Council's Validation Checklist (2018)⁸ requires applications for major new development to be accompanied by an Environmental Standards Statement to address the sustainability of the development proposals and demonstrate a 20% carbon reduction.

2.2.7 Pre-app Consultation

During pre-application discussions, Manchester City Council requested the production of a Sustainability and Circular Economy Statement. It was requested that this statement should *"detail at a high level the strategy for the approach to whole life carbon within the development. This high level strategy should then form the basis for the submission of a final statement"*.

The Officer also referenced the following resources:

- RIBA Sustainable Outcomes Guide (2019)⁹; and,
- The Mayor of London's Design for a Circular Economy Primer¹⁰.

A Circular Economy Statement has been issued separately.

2.3 Planning Policy Summary

There are several consistent themes across national and local sustainability policy which are relevant to the Premier House proposals.

A minimum 15% reduction in CO₂ emission beyond Building Regulations Part L 2010 is required through

⁷ <http://www.manchesterclimate.com/sites/default/files/Manchester%20Climate%20Change%20Framework%202020-25.pdf>

⁸ https://secure.manchester.gov.uk/downloads/download/6914/planning_validation_checklists_2018

⁹ <https://www.architecture.com/-/media/GatherContent/Test-resources-page/Additional-Documents/RIBASustainableOutcomesGuide2019pdf.pdf>

¹⁰ https://www.london.gov.uk/sites/default/files/design_for_a_circular_economy_primer_ggbd_web2.pdf

a combination of building envelope performance, energy efficiency and on-site zero / low carbon energy technology. This performance is equivalent to a circa 9% CO2 reduction on Part L 2013.

Ensuring the development is resilient to a changing climate is a further key requirement at both national and local levels, particularly in relation to increased risk of floods and summertime overheating.

A minimum BREEAM 'Very Good' rating is required given the proposals comprise commercial office development.

It is clear from the declaration of climate emergency and ambitious target to achieve carbon neutrality by 2038, that the council and Greater Manchester expect new development to contribute to a carbon neutral future.

The following chapter details the approach proposed to address these policy requirements.

3. Sustainability and Energy Strategy

3.1 Introduction

This chapter summarises the various sustainability, energy and climate change measures that are proposed for the Premier House redevelopment. It follows the topic headings of Chapter 4 ‘Environmental Standards’ of the Guide to Development in Manchester SPD (2007) as follows:

- Energy efficiency (incorporating renewable energy).
- Environmental design.
- Water management & weather resilience.
- Waste management.
- Construction management.
- Waterways.

3.2 Energy Efficiency

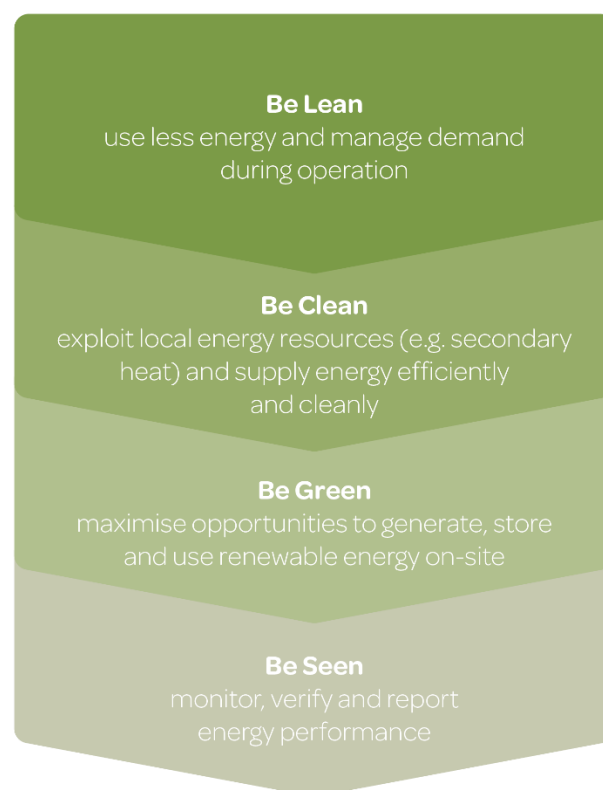
Minimising GHG emissions is key to mitigating the effects of development on climate change.

A key aspect of the recently introduced and future regulations is the continuing decarbonisation of the national electricity network. The phasing out of coal fired power stations and increasing generation of energy from renewable sources is rapidly reducing the carbon intensity of the electricity network.

Through decarbonisation of the national electricity grid and introduction of the new SAP10 carbon factors, electric heating systems deliver a higher carbon saving than gas alternatives.

Taking these considerations into account the development aims to reduce energy consumption and carbon emissions in accordance with the energy hierarchy (**Figure 3**) and current carbon factors.

Figure 4: The Energy Hierarchy



Kings Associates carried out energy modelling against Part L 2013 to determine the most suitable and efficient building services strategy. The following sections set out the proposed measures incorporated within the design to deliver an energy efficient, low carbon development.

Part L 2021 regulations do not apply to this project as building notice was submitted prior to the 15th June 2022 deadline, and work on site is scheduled to commence prior to the 15th June 2023 cut off.

3.2.1 Be Lean – Reducing Energy Use

Central to the delivery of low carbon and energy efficient buildings is the ‘fabric first’ principle which recognises the most effective way of minimising carbon emissions is to reduce the demand for heat

and power through a well-insulated, energy efficient building fabric and services.

Reducing the primary energy demand of a building through the use of an efficient fabric and services is widely regarded as best practice and is therefore the first and most important step to reducing carbon emissions.

This 'fabric first' approach has a number of distinct benefits including:

- Carbon savings delivered are 'locked-in' for the lifetime of the building (60 years or more) rather than the much shorter lifespan (around 25 years) of a renewable energy technology.
- Virtually no maintenance and/or replacement costs to maintain carbon reductions through improved fabric.
- No reliance on an occupier's behaviour to deliver carbon reductions. Achieving carbon savings from renewable energy technologies require education, awareness and often, behavioural changes from occupants.

The following measures implemented within the design of Premier House reduce energy use and carbon emissions:

- Specification of thermal insulation and air permeability standards to exceed the minimum standards contained within Part L 2013.
- Specification of performance glazing with internal blinds (where necessary) to limit summertime solar gains and overheating.
- Incorporating high efficiency lighting targeting 100% of all light fittings as LED.
- Consideration of 'smart controls' on heating systems to reduce usage when occupants not present.
- Use of a Building Energy Management System (BEMS) to monitor energy usage and reduce the performance gap through detection of high energy usage.

The design of the proposed development will exceed the requirements of Building Regulations Part L 2013 through a range of enhanced fabric and energy efficiency measures.

3.2.2 Be Clean – Efficient Energy

The next stage of the energy hierarchy is the provision of energy efficiently, i.e., from a decentralised energy system such as a Heat Network.

District Heating Networks (DHN) comprise a centralised heat generator, typically a gas fired Combined Heat and Power (CHP) engine. CHP systems generate electricity and waste heat which can be fed into a network of insulated pipes which deliver low carbon heat to buildings to provide heating and hot water via individual heat transfer units.

DHNs are suited to development with high thermal demand, typically provided by sufficient density or a large anchor load, i.e., high density flats, hotels or care homes. They are not typically suited to office spaces which generally have a relatively low thermal demand.

As summarised earlier, the continued decarbonisation of the national electricity network means that the carbon emission benefits of traditional CHP systems will diminish during their life cycle.

Furthermore, an all-electric building services strategy as proposed will not adversely affect the local air quality in Manchester, as there will be no on-site combustion.

CHP and DHN are therefore not considered further as carbon emissions associated with electricity are expected to continue to reduce as the grid decarbonises, leading to greater savings in carbon emissions over the lifetime of the development.

3.2.3 Be Green – Low Carbon Renewable Energy

The final stage of the energy hierarchy is the generation of on-site low carbon renewable energy.

An initial review of potential low carbon renewable energy technologies which may be suitable for inclusion in the building's design has been completed. A summary of technologies reviewed is provided below.

Wind Turbines

Wind turbines have been ruled out for this development as they would not be feasible in the city centre location.

Solar Photovoltaics (PV)

Solar photovoltaic (PV) systems generate zero carbon electricity from sunlight and are well suited to most developments, particularly where the electricity load is high and consistent during daylight hours. Furthermore, they require minimal maintenance once installed.

Solar PV could be appropriate for this development, however there is extensive shading from nearby buildings such as the former Renaissance hotel, which could affect power generated on site. Furthermore, roof space is limited due to the proposed roof garden amenity area.

Solar Thermal

Solar thermal systems generate zero carbon hot water from sunlight in a similar manner to Solar PV. They require insulated tanks to store the hot water and have greater maintenance demands than solar PV given the need to ensure anti-freeze in the pipework is topped up every few years.

As hot water demand within offices is low, it is unlikely that solar thermal would provide a significant saving in electricity and reduction in carbon emissions. Therefore, it is not considered further.

Heat Pumps

Heat pumps provide low carbon heat sourced either from the ground (Ground Source Heat Pumps - GSHP) or air (Air Source Heat Pumps - ASHP). They require main electricity to operate but typically

generate at around three units of heat for every unit of electricity that is consumed.

The limited footprint of the site means that GSHPs are not feasible, however ASHPs are proposed as part of the all-electric building services strategy and will contribute to a reduction in operational carbon emissions.

Biomass

Biomass provides useable heat from a range of solid fuels including wood and straw. The installation of a biomass boiler, flue and associated fuel store require significant space and regular deliveries and is therefore not considered appropriate for the development.

Furthermore, the impact of onsite combustion on the air quality within an urban environment is not favourable.

3.2.4 Energy Strategy Summary

Table 2 demonstrates the anticipated energy performance of the development, and carbon reduction achieved, as modelled by King Associates. The BRUKL output document has been included within **Appendix 2**.

Table 2: Energy Modelling Results

Parameter	Performance
Target Emission Rate (TER) kgCO ₂ /m ² /year	16
Building Emission Rate (BER) kgCO ₂ /m ² /year	12.8
CO ₂ Improvement (%)	20%

As shown within **Table 2**, Premier House achieves a 20% reduction in carbon emissions from Part L 2013 requirements through building fabric improvements and implementation of ASHPs. This reduction exceeds the requirements of Policy EN6.

The 'true' carbon reduction achieved will be higher given that Part L 2013 compliance is calculated using

outdated SAP2012 carbon factors. These carbon factors do not reflect the decarbonisation of national grid and SAP10 carbon factors which significantly reduces the carbon impact of electric based space heating and hot water systems.

The proposed energy strategy is further future-proofed by being 'all electric' and will benefit from the significant further decarbonisation of the UK electricity grid that is forecast by Government. Therefore, the development will contribute to Manchester City Council's ambition to become carbon neutral by 2038.

In addition to the low carbon energy strategy, the location of the site provides an opportunity to maximise sustainable travel options including walking / cycling and public transport in preference to the private car. This approach will deliver further carbon emission reductions whilst promoting the health and wellbeing of building occupants.

The development does not propose any changes to the existing underground car park, with the car park to continue operation by Manchester City Council. Therefore, the office can effectively be promoted as a car free development.

3.3 Environmental Design

Premier House has been registered under the latest BREEAM scheme version – New Construction 2018. In line with Manchester City Council's Guide to Development SPD, at least a 'Very Good' rating will be achieved. This commitment supports Manchester's declaration of climate emergency and journey to net zero carbon.

Chapter 5 of this Statement reports the proposed BREEAM strategy as established via a pre-assessment and team workshops that have been undertaken to demonstrate that the 'Very Good' target is on track.

3.4 Water Management & Weather Resilience

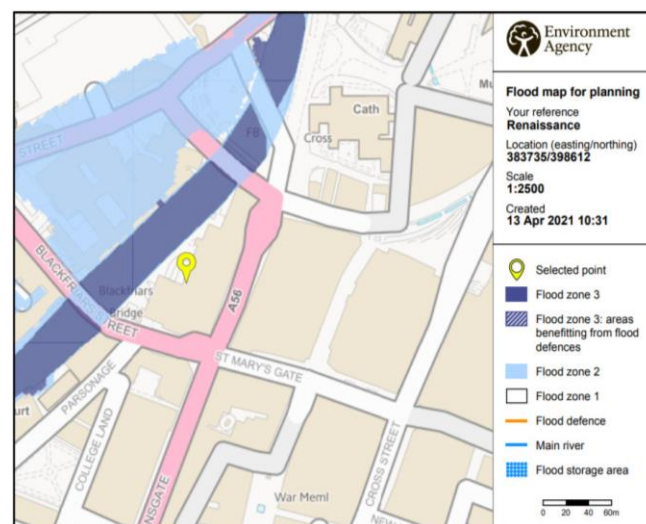
Water management and weather resilience issues in new development are becoming increasingly important as a result of climate change, with effects such as increased winter rainfall, decreased summer rainfall and increased summer temperatures already being experienced.

The Met Office's latest UK Climate Projections (UKCP18)¹¹ include significant changes to climatic conditions in Manchester by the 2050s, including increased summer and annual temperatures, increased winter rainfall and reduced summer rainfall.

3.4.1 Flood Risk & Drainage

A Flood Risk Assessment (FRA) previously commissioned by the applicant confirms that the site is within Flood Zone 1 according to the Environment Agency Flood Map (**Figure 5**). Some surrounding areas adjacent to the river are in Flood Zone 2 and 3.

Figure 5: EA Flood Map [Shepherd Gilmore]



However, the Strategic Flood Risk Assessment produced for Manchester in 2010 identified the site and being located within Flood Zone 1 and 2 due to the River Irwell which forms the western boundary of the site.

¹¹ <https://www.metoffice.gov.uk/pub/data/weather/uk/ukcp18/science-reports/UKCP18-Overview-report.pdf>

Flooding from other sources have also been considered within the FRA. The closest canals to the site are the Rochdale Canal approximately 1.1km to the south east, and the Manchester Ship Canal which forms a section of the River Irwell (effects of which have been summarised above). The Rochdale Canal does not pose any flood risk to the site.

Flooding from groundwater, the sewer network and pluvial sources is considered to be low risk. The site is on the boundary of the maximum extent of reservoir flood risk. However, it should be noted that the probability of a catastrophic dam failure occurring is relatively low. Furthermore, as it is on the boundary of the maximum extent of flooding, the reservoir would have to release all water held at its maximum level, which is a worst-case scenario of a highly unlikely event and therefore should not be used towards planning considerations.

As Premier House will reuse the substructure of the existing building, there are no significant changes proposed to the drainage design. However, reduction of the office floor plate to allow for the proposed residential new build tower, which is the subject of a separate pending planning application (ref: 132088/FO/2021), presents opportunities to reduce the surface water run-off from the site.

3.4.2 Potable Water Efficiency

Potable water is an increasingly important natural resource and with the majority of the UK classed as being in an area of moderate or severe water stress the conservation of water is becoming a more significant sustainability metric.

To ensure water efficiency, Premier House will be designed to achieve a 25% reduction in mains water consumption which equates to achieving two credits under BREEAM issue Wat 01 Water Consumption (see **Section 5.3.5**). Water saving measures will be incorporated into the design of the office to achieve these credits and will be confirmed at detailed design.

Furthermore, soft landscaping will be reliant on rainwater or manual watering only.

These measures will help ensure the development reduces demand on local potable water supplies and therefore promote resilience to potential water constraints such as summer droughts.

3.4.3 Building Overheating Risk

Overheating has been limited through careful specification of u-values, glazing g-values, and external shading. Additionally, the building services strategy offers comfort cooling in the form of an all-electric VRF system.

An overheating analysis in line with CIBSE TM52 and BREEAM Hea 04 Thermal Comfort credit requirements for both current and future climatic scenarios will be undertaken during detailed design.

3.5 Waste Management

Regarding operational waste, sufficient storage for recyclable and non-recyclable waste will be provided in accordance with Manchester City Council's Waste Storage & Collection Guidance for New Developments GD04 (Version 6, September 2017)¹². This guidance provides minimum standards for the storage and collection of refuse and for recycling facilities in new domestic and commercial development.

Waste storage facilities provided at Premier House will reflect the various waste streams that are generated and collected by the local waste authority. By making it clear and convenient for building users to separate waste at source, a reduction of waste sent to landfill will be encouraged.

3.6 Construction Management

The proposed development will ensure that construction is undertaken in a way which minimises waste and impact on the surrounding area. The main contractor will register with the Considerate Constructors Scheme and target a

¹² https://www.manchester.gov.uk/downloads/download/6048/waste_management_strategy

score of at least 4.5 stars to achieve compliance significantly beyond best practice.

The Circular Economy Statement issued separately outlines how the redevelopment of Premier House has implemented circular economy principles, through commitments made and measures taken throughout design and construction. The report includes details with respect to material and waste minimisation, use of sustainable materials, and protection of natural resource.

3.7 Biodiversity

Penny Anderson Associates has undertaken a Phase 1 Habitat Survey and building inspection for roosting bats. The assessment was conducted during the appropriate season for these types of survey and the results are representative of the site before the commencement of initial site preparation.

The proposed site is dominated by the existing buildings, with no features of significant nature conservation interest. The plant species on site were limited to species that are common and typical of early successional communities of urban sites at the time of the survey.

An evening bat survey confirmed that there were no roosting bats present on site. Furthermore, no active or disused birds' nests were observed during the survey. The site was not considered suitable for use by nesting black redstart as there were no sheltered, high ledges for nesting.

The ecologist has recommended enhancement measures to be incorporated into the design of the wider site, these include:

- Use of native and wildlife attracting planting.
- Inclusion of bat roosting features.
- Incorporation of bird nest boxes where possible.

The landscaping proposals will therefore aim to enhance biodiversity on site, provide green

infrastructure at ground level, and create new habitats for local priority species.

3.8 Waterways

The closest watercourse to the site is the River Irwell which also forms part of the Manchester Ship Canal. The river is located on the western boundary of the site.

Furthermore, there is a culverted watercourse identified within Cateaton Street that has been identified within the FRA as having the potential to encroach into the development boundary. Further investigations will be undertaken on this watercourse to determine its impacts on the site, and any impacts site activities may have on it.

A Demolition and Construction Environmental Management Plan (DCEMP) will be developed to ensure that measures are in place to reduce water pollution in line with best practice.

4. BREEAM Strategy

This Chapter introduces BREEAM and sets out the strategy proposed to achieve a 'Very Good' rating as a minimum.

4.1 BREEAM

BREEAM is the world's leading sustainability assessment tool for new buildings. The scheme is operated by the Building Research Establishment (BRE) and includes a range of criteria against which the sustainability performance of new buildings is assessed.



Since its launch in 1990, BREEAM has been used to certify over 560,000 assessments of buildings across 82 countries. BREEAM has a number of schemes which can be applied to new buildings, refurbishments and existing buildings. Additionally, each scheme regularly updated to ensure it continues to recognise and reward developments that go beyond minimum practice and requirements, for example those set out by Building Regulations.

4.2 BREEAM Strategy

Manchester City Council's Guide to Development SPD sets out a requirement for the achievement of a BREEAM 'Very Good' rating on all new non-domestic development.

The current BREEAM New Construction standard is the 2018 Version 3.0 under which the 'Office' sub-scheme is applicable to the development.

The BREEAM assessment will not apply to the retail/leisure areas, as they only form approximately 657sq.m of the net internal area. The BRE's publication "BREEAM, Home Quality Mark and CEEQUAL Practitioner Guidance for Planning Professionals"¹³, provides a guide to incorporating BREEAM within planning policy and suggests 1,000m² as a suitable threshold.

These retail/leisure areas therefore fall below the appropriate threshold to undertake an assessment and would not be an effective way to demonstrate the sustainability credentials of the building and would instead cause additional constraints and detract from the office assessment.

Turley Sustainability (BREEAM Accredited Professional and Licenced Assessor) has undertaken a pre-assessment of the building (see **Appendix 1**) using the New Construction 2018 'Office' methodology.

A target of 62.12% has been deemed possible for Premier House, which provides an ample contingency over the 55% required for Very Good. **Table 3** sets out a potential route to BREEAM Very Good, demonstrating the target score for each section.

¹³ <https://www.breeam.com/engage/research-and-development/consultation-engagement/local-government/>

Table 3: BREEAM Pre-assessment Results

Category	Percentage Targeted
Management	7.33%
Health & Wellbeing	4.67%
Energy	8.35%
Transport	9.17%
Water	4.67%
Materials	8.57%
Waste	4.36%
Land Use & Ecology	9.00%
Pollution	4.00%
Exemplary	2.00%
Score	62.12% (Very Good)

It should be noted that the route to BREEAM Very Good compliance, as set out in the pre-assessment, may be subject to change during ongoing detailed design and construction.

A summary of credits targeted within each category, and the value that meeting the criteria brings to the development, is discussed in the following sections. A full breakdown of each credit targeted is provided within **Appendix 1**.

4.2.1 Management

The management category encourages the adoption of sustainable management practices in connection with design, construction, commissioning, handover and aftercare.

The credits within this category are awarded to project and design teams who consider and incorporate sustainability measures, involving key stakeholders from project brief through to occupation.

Sustainability practices targeted include seasonal commissioning, consideration of construction site impacts including use of natural resources and continued support from a BREEAM AP.

4.2.2 Health and Wellbeing

The Health and Wellbeing category of the BREEAM schemes has been aligned with the 'WELL' Standard, bringing the comfort of building occupiers to the forefront of the design.

The visual comfort and thermal comfort of the internal environment is key in the building design to ensure a high quality, productive working environment. Furthermore, security of the site will be prioritised within the design through implementation of the recommendations made in the Crime Impact Statement.

The occupants of Premier House will have ample access to outside space, including the inclusion of a new roof terrace, to contribute towards their health and wellbeing.

4.2.3 Energy

The Energy category encourages the specification and design of energy efficient solutions, systems and equipment. The credit requirements support the reduction of carbon emissions throughout the operational phase of the office through specification of thermally efficient building fabric, energy efficient heating systems, and low energy internal and external lighting and controls as discussed within **Section 3.2**.

Unregulated energy will be reduced through careful specification of new large energy consuming systems such as lifts.

Extensive sub-metering will allow the building user to monitor energy performance to establish possible efficiencies during operation.

4.2.4 Transport

A Transport Assessment has been undertaken to assess the effect of the development on local transport infrastructure. A Travel Plan has also been produced to recommend sustainable transport measures to reduce private car travel to and from site.

Credits are awarded on the basis of number of transport options available to the site pre-development and as a result of the development.

Premier House is located in an excellent area for public transport, benefitting from Manchester Victoria and Salford Central train stations which are less than 10 minutes' walk away and connect to neighbouring residential areas such as Bolton, Blackburn and Wigan, and further afield cities such as Liverpool, York and Newcastle. These stations are also served by the free Metroshuttle bus service which operates around the city centre and stops on Deansgate within close proximity to the site.

The closest tram stop to Premier House is Exchange Square, which provides ongoing services to the commuter areas of Rochdale and Didsbury. The site has a Greater Manchester Accessibility Level Score of 73.44, which demonstrates that the accessibility to site via public transport is very high.

Premier House will be providing new amenities for building occupiers, including a roof terrace. Furthermore, the occupants will benefit from the extensive local amenities nearby within the Arndale Centre, and on Deansgate and Market Street.

A new cycle store is proposed to serve Premier House, providing parking for 40 cycles. Associated staff shower and changing facilities will also be provided.

4.2.5 Water

The aim of the Water category is to reduce the consumption of internal and external potable water over the lifetime of the building and minimising losses through leakage.

To reduce water consumption through sanitary uses and achieve a minimum 25% reduction of the baseline water use defined by the BRE, the following measures will be implemented:

- Low flush WCs.
- Flow restricted showers and taps.
- Water efficient kitchenette equipment.



The detailed design will confirm the final measures incorporated to reduce internal water usage.

Water usage will also be monitored through water meters and a leak detection system.

4.2.6 Materials

The Materials category encourages development to take a 'whole life cycle' approach to construction products, considering impacts of the supply chain from raw material, to end-of-life.

An LCA of the office's new build elements including superstructure (external walls, frame, roof etc.), sub structure (foundations and ground floor slab), hard landscaping and building services has been undertaken, to model the environmental impact, including carbon emissions, associated with construction and materials. An options appraisal has also been undertaken to identify carbon 'hotspots', and any measures which could reduce these emissions.

The development has achieved a reduction in construction carbon and associated environmental impacts through the specification of hard landscaping from local sources, and the re-use of existing substructure.

To reduce material wastage associated with maintenance and replacement, protection measures will be incorporated into the detailed design to protect from damage that may arise from building occupants and visitors, such as protecting internal areas from trolley movement, pedestrian traffic or external areas from parking and/or delivery vehicles.

The design team will also consider the effect of environmental factors such as water ingress, solar radiation and temperature variation on the building.

Manufacturers with responsible sourcing accreditation, for example, BES6001, ISO14001, FSC and CARES certification will be prioritised during construction.

4.2.7 Waste

The Waste category encourages the reduction of waste associated with construction methods through measures implemented during the design and on-site management. The category also rewards design measures encouraging the building users to recycle waste during building operation.

The proposed development will minimise demolition, strip out, construction and operational waste in line with the measures set out within the waste (**section 3.6**) of this report.

Additionally, the design is flexible and adaptable to climate change, change in use and refurbishment to reduce the environmental impacts of excess material usage and waste in the future.

4.2.8 Land Use and Ecology

The aim of the Land Use and Ecology category is to encourage sustainable land use, habitat protection and creation and improvement of long-term biodiversity.

As discussed within **Section 3.5**, a Phase 1 Habitat Survey has been undertaken by Penny Anderson Associates, confirming that the site is dominated by existing buildings and does not have features of ecological value. The Survey also provided a number of enhancement measures which will be quantified in line with the DEFRA metric to confirm the BREEAM credits targeted.

4.2.9 Pollution

The aim of the Pollution category is to address the prevention and control of pollution and surface water run-off associated with the building's location and use.

Pollution issues covered within the credit requirements include light, noise, flooding and emissions to air, land and water.

Premier House has specified an all-electric building services strategy to limit any adverse impact on local air quality and pollution.

Furthermore, pollution impacts associated with light and noise will be reduced and managed appropriately.

An FRA has been undertaken which classifies the site as within Flood Zones 1 and 2, and at low risk of flooding from other sources, as set out in **Section 3.4.1**. Mitigation measures are being incorporated into the design to ensure surface water run-off is appropriately managed.

4.3 Summary

The above sections summarise the credits targeted by the proposed office redevelopment to achieve a Very Good rating. The credits targeted equate to a score of between 62.12% which would achieve the required score (55%) with a margin of safety.

It should be noted that this Environmental Standards Statement does not guarantee the award of these credits and may not reflect the final route to achieve a Very Good rating. Credits may be removed and replaced with others which may be more viable over the course of the design and construction.

5. Conclusion

This Environmental Standards Statement demonstrates how the proposed new office development at the former Premier House site responds positively to national and local sustainable policy requirements.

Social and Economic Benefits

The development aims to provide a range of social and economic benefits to Manchester City Centre, through:

- Redevelopment of a vacant eyesore, to provide a high quality office space.
- Support to the local community through increased jobs during construction.
- Incorporation of sustainable transport measures to encourage active travel in the form of walking and cycling, through provision of cycle storage and facilities.
- Provision of a Travel Plan to provide staff with sustainable and safe transport options.
- Provision of a healthy and comfortable indoor and outdoor environment in line with the requirements of BREEAM Health and Wellbeing.

Environmental Protection and Enhancement

Through a range of design measures the development aims to protect and enhance the local environment, including:

- Reuse of a brownfield site to protect greenfield land.
- Provision of green infrastructure to provide multi-functional benefits including creation of habitats, climate resilience and recreation.
- Provision of measures through construction and operation of the site to reduce pollution, minimise waste and encourage recycling.

Mitigating and Adapting to Climate Change

In recognition of climate emergency, the development will incorporate a range of measures to reduce carbon emissions, mitigate the effects of climate change, and to ensure the long term resilience of the development to the effects of climate change. Measures include:

- Implementation of circular economy principles throughout design, construction and operation.
- Targeting BREEAM Very Good rating.
- Retention of the existing building substructure and minimisation of new build materials to significantly reduce the embodied carbon emissions associated with new development.
- Reduced carbon emissions through the use of energy hierarchy, using a fabric first approach to design to reduce energy demand, helping mitigate the effects of climate change.

- Specification of an all-electric building services strategy with ASHPs, which in future, will deliver a zero carbon building in operation with the decarbonisation of the national grid, contributing to Manchester's net zero carbon ambitions.
- Targeting two credits under BREEAM Wat 01 by reducing flow rates, flush volumes, and specifying water efficient kitchenette equipment.

The joint venture between PAG and SCG is committed to the delivery of a sustainable office development which provides visual improvement to a key city centre site, and contributes to Manchester's net zero carbon aim of 2038 through circular economy, minimisation of embodied carbon and implementation of an all-electric building services strategy.

Appendix 1 – BREEAM Pre-assessment



Premier House

BREEAM New Construction 2018 (Office - Fully Fitted)

Pre-assessment for Full Planning Submission

August 2022

Key

Mandatory Credit for 'Very Good'



TARGET (>55%)	62.12%	Very Good			
Credit Summary BREEAM 2018: Office - Fully Fitted			Credit Ref.	Credits Available	Target
MANAGEMENT					
Credit Value 0.52%	Project Brief and Design	Project Delivery Planning	Man 01	1	1
		Stakeholder Consultation		1	1
		BREEAM Advisory Professional		1	1
				1	1
	Life Cycle Costing (LCC) and Service Life Planning	Elemental Life Cycle Cost	Man 02	2	0
		Component Life Cycle Cost		1	0
		Capital Cost Reporting		1	1
	Responsible Construction Practices	Legally harvested and traded timber - Pre-requisite	Man 03	-	Y
		Environmental Management		1	1
		Sustainability Champion		1	1
		Responsible Construction Management		2	2
		Monitoring of Construction Site Impacts		2	2
	Commissioning and Handover	Commissioning and Testing Schedule and Responsibilities	Man 04	1	1
		Commissioning Building Services		1	1
		Testing and Inspecting Building Fabric		1	0
		Handover (Building User Guide mandatory)		1	1
	Aftercare	Aftercare Support	Man 05	1	0
		Commissioning - Implementation		1	0
		Post Occupancy Evaluation		1	0
Section Credit Total				21	14
Weighted Section Total				11%	7.33%

HEALTH & WELLBEING						
Credit Value 0.78%	Visual Comfort	Glare control		Hea 01	1	1
		Daylight factors			2	0
		View Out			1	0
		Internal and External Lighting Levels			1	1
	Indoor Air Quality	Indoor Air Quality Pre-Requisite		Hea 02	-	-
		Ventilation			1	0
		Emissions from Construction Products			2	0
		Post Construction Indoor Air Quality Management			1	0
	Thermal Comfort	Thermal modelling		Hea 04	1	1
		Adaptability for projected climate change scenario			1	0
		Thermal Zoning and Controls			1	1
	Acoustic Performance			Hea 05	3	0
	Security			Hea 06	1	1
	Safe and Healthy Surroundings	Safe access		Hea 07	1	0
		Outside Space			1	1
Section Credit Total					18	6
Weighted Section Total					14%	4.67%
ENERGY						
Credit Value 0.70%	Reduction of Energy Use and CO ₂ Emissions	Energy Performance Ratio		Ene 01	9	4
		Prediction of Operational Energy Consumption			4	0
	Energy Monitoring	Sub-metering End-Use Categories		Ene 02	1	1
		Sub-metering of High Energy Load and Tenancy Areas			1	1
	External Lighting			Ene 03	1	1
	Low Carbon Design	Passive Design Analysis		Ene 04	1	1
		Free Cooling			1	0
		Low and Zero Carbon Feasibility Study			1	0
	Energy Efficient Transportation Systems	Energy Consumption		Ene 06	1	1
		Energy Efficient Features			1	1
	Energy Efficient Equipment			Ene 08	2	2
	Section Credit Total					23
Weighted Section Total					16%	8.35%

TRANSPORT					
Credit Value 0.83%	Transport Assessment and Travel Plan		Tra 01	2	2
	Sustainable Transport Measures		Tra 02	10	9
Section Credit Total				12	11
Weighted Section Total				10.0%	9.17%
WATER					
Credit Value 0.78%	Water Consumption (1 credit mandatory for Excellent)		Wat 01	5	2
	Water Monitoring		Wat 02	1	1
	Water Leak Detection & Prevention	Leak Detection System	Wat 03	1	1
		Flow Control Devices		1	1
	Water Efficient Equipment		Wat 04	1	1
Section Credit Total				9	6
Weighted Section Total				7%	4.67%
MATERIALS					
Credit Value 1.07%	Environmental Impacts from Construction Products - Building Life Cycle Assessment (LCA)		Mat 01	7	5
	Environmental Impacts from Construction Products - Environmental Product Declarations (EPD)		Mat 02	1	0
	Responsible Sourcing of Construction Products	Pre-requisite - Legal and Sustainable Timber	Mat 03	-	Y
		Enabling Sustainable Procurement		1	1
		Measuring Responsible Sourcing		3	1
	Designing for Durability and Resilience		Mat 05	1	1
	Material Efficiency		Mat 06	1	0
Section Credit Total				14	8
Weighted Section Total				15.0%	8.57%
WASTE					
Credit Value 0.55%	Construction Waste Management	Pre-Demolition Audit	Wst 01	1	1
		Construction Resource Efficiency		3	1
		Diversion of Resources from Landfill		1	1
	Use of Recycled and Sustainably Sourced Aggregates		Wst 02	1	0
	Operational Waste		Wst 03	1	1
	Speculative Floor Finishes		Wst 04	1	1
	Adaptation to Climate Change		Wst 05	1	1
	Design for Disassembly and Adaptability		Wst 06	2	2
Section Credit Total				11	8
Weighted Section Total				6.0%	4.36%

LAND USE & ECOLOGY					
Credit Value 1.00%	Site Selection	Previously Developed Land	LE 01	1	1
		Contaminated Land		1	0
	Ecological Risks and Opportunities (Route 1)	Survey and Evaluation	LE 02	1	1
		Determining Ecological Outcomes		1	1
	Managing Negative Impacts on Ecology	Prerequisite - Ecological risks and Opportunities	LE 03	-	-
		Planning and Measures On-site		1	1
		Managing Negative Impacts		2	1
	Ecological Change and Enhancement	Prerequisite - Managing Negative Impacts on Ecology	LE 04	-	Y
		Ecological Enhancement		1	1
		Change and Enhancement of Ecology		3	1
	Long Term Ecological Management and Maintenance	Prerequisite - Statutory Obligations, Planning and Site Implementation	LE 05	-	Y
		Management and Maintenance throughout the Project		1	1
		Landscape and Ecology Management Plan		1	1
Section Credit Total				13	9
Weighted Section Total				13%	9.00%
POLLUTION					
Credit Value 0.67%		Prerequisite		-	Y
		Impact of Refrigerants		2	0
		Leak Detection		1	1
	Local Air Quality		Pol 02	2	2
	Surface Water Run Off	Low Flood Risk	Pol 03	2	1
		Surface Water Run-Off - Rate		1	0
		Surface water Run-Off - Volume		1	0
		Minimise watercourse pollution		1	0
	Reduction of Night Time Light Pollution		Pol 04	1	1
	Reduction of Noise Pollution		Pol 05	1	1
Section Credit Total				12	6
Weighted Section Total				8%	4.00%

INNOVATION			
Credit Value 1.00%	Man 03 Responsible Construction Practices	1	0
	Hea 01 Visual Comfort	1	0
	Hea 06 Security	1	0
	Ene 01 Beyond Zero Net Regulated Carbon	3	0
	Wat 01 Water Consumption	1	0
	Mat 01 Life Cycle Impacts	3	2
	Mat 03 Responsible Sourcing of Materials	1	0
	Wst 01 Construction Waste Management	1	0
	Wst 02 Recycled Aggregates	1	0
	Wst 05 Adaptation to climate change	1	0
	LE 02 Ecological Risks and Opportunities	1	0
	LE 04 Ecological Change and Enhancement	1	0
Section Credit Total		16	2
Weighted Section Total		16%	2%
TARGET RATING			62.12%

Appendix 2 – BRUKL Output Document

Project name

Renaissance Manchester, offices**As designed****Date:** Tue Apr 13 15:18:05 2021**Administrative information****Building Details****Address:** Renaissance Manchester, offices,
MANCHESTER,**Certification tool****Calculation engine:** TAS**Calculation engine version:** "v9.5.1"**Interface to calculation engine:** TAS**Interface to calculation engine version:** v9.5.1**BRUKL compliance check version:** v5.6.b.0**Certifier details****Name:** Dr Nick May**Telephone number:** 01234 376088**Address:** Manor Croft, School Lane, Bolnhurst, Bedford,
MK44 2EN**Criterion 1: The calculated CO₂ emission rate for the building must not exceed the target**

CO ₂ emission rate from the notional building, kgCO ₂ /m ² .annum	16
Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	16
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	12.8
Are emissions from the building less than or equal to the target?	BER =< TER
Are as built details the same as used in the BER calculations?	Separate submission

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

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

Building fabric

Element	U _a -Limit	U _a -Calc	U _i -Calc	Surface where the maximum value occurs*
Wall**	0.35	0.31	0.31	LG External Wall
Floor	0.25	0.23	0.23	Exposed Floor
Roof	0.25	0.22	0.22	Roof
Windows***, roof windows, and rooflights	2.2	1.9	1.9	curtain walling
Personnel doors	2.2	-	-	No personal doors in project
Vehicle access & similar large doors	1.5	-	-	No vehicle doors in project
High usage entrance doors	3.5	-	-	No high usage entrance doors in project
U _a -Limit = Limiting area-weighted average U-values [W/(m ² K)] U _a -Calc = Calculated area-weighted average U-values [W/(m ² K)] U _i -Calc = Calculated maximum individual element U-values [W/(m ² K)]				
* There might be more than one surface where the maximum U-value occurs. ** Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows. *** Display windows and similar glazing are excluded from the U-value check. N.B.: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.				

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

Building services

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

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	NO
Whole building electric power factor achieved by power factor correction	<0.9

1- NAT VENT

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards.					

2- EXTRACT (11 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3	-	-	0.4	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards.					

3- VRF+MV (25 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.5	4	-	1.7	0.75
Standard value	2.5*	2.6	N/A	N/A	0.5
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards.					

1- New HWS Circuit

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	3	0
Standard value	2*	N/A
* Standard shown is for all types except absorption and gas engine heat pumps.		

Local mechanical ventilation, exhaust, and terminal units

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

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		Zone	Standard
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1			
mezz 1	-	-	-	1.7	-	-	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard	
mezz 2	-	-	-	1.7	-	-	-	-	-	-	N/A	
mezz 3	-	-	-	1.7	-	-	-	-	-	-	N/A	
mezz 4	-	-	-	1.7	-	-	-	-	-	-	N/A	
mezz 5	-	-	-	1.7	-	-	-	-	-	-	N/A	
mezz 6 (internal)	-	-	-	1.7	-	-	-	-	-	-	N/A	
1st 1	-	-	-	1.7	-	-	-	-	-	-	N/A	
1st 2	-	-	-	1.7	-	-	-	-	-	-	N/A	
1st 3	-	-	-	1.7	-	-	-	-	-	-	N/A	
1st 4	-	-	-	1.7	-	-	-	-	-	-	N/A	
1st 5	-	-	-	1.7	-	-	-	-	-	-	N/A	
1st 6 (internal)	-	-	-	1.7	-	-	-	-	-	-	N/A	
2nd 1	-	-	-	1.7	-	-	-	-	-	-	N/A	
2nd 2	-	-	-	1.7	-	-	-	-	-	-	N/A	
2nd 3	-	-	-	1.7	-	-	-	-	-	-	N/A	
2nd 4	-	-	-	1.7	-	-	-	-	-	-	N/A	
2nd 5	-	-	-	1.7	-	-	-	-	-	-	N/A	
2nd 6 (internal)	-	-	-	1.7	-	-	-	-	-	-	N/A	
office entrance int	-	-	-	1.7	-	-	-	-	-	-	N/A	
office entrance perim1	-	-	-	1.7	-	-	-	-	-	-	N/A	
office entrance perim2	-	-	-	1.7	-	-	-	-	-	-	N/A	
office entrance perim3	-	-	-	1.7	-	-	-	-	-	-	N/A	
reception office/amenity	-	-	-	1.7	-	-	-	-	-	-	N/A	
small WC 1	-	-	0.4	-	-	-	-	-	-	-	N/A	
small WC 2	-	-	0.4	-	-	-	-	-	-	-	N/A	
small WC 3	-	-	0.4	-	-	-	-	-	-	-	N/A	
small WC 4	-	-	0.4	-	-	-	-	-	-	-	N/A	
small WC 5	-	-	0.4	-	-	-	-	-	-	-	N/A	
small WC 6	-	-	0.4	-	-	-	-	-	-	-	N/A	
small WC 7	-	-	0.4	-	-	-	-	-	-	-	N/A	
large WC 1	-	-	0.4	-	-	-	-	-	-	-	N/A	
large WC 2	-	-	0.4	-	-	-	-	-	-	-	N/A	
large WC 3	-	-	0.4	-	-	-	-	-	-	-	N/A	
small WC 8	-	-	0.4	-	-	-	-	-	-	-	N/A	
roof zone 1	-	-	-	1.7	-	-	-	-	-	-	N/A	
roof zone 2	-	-	-	1.7	-	-	-	-	-	-	N/A	

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
mezz 1		95	-	-	417
mezz 2		95	-	-	320
mezz 3		95	-	-	1847
mezz 4		95	-	-	286

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
mezz 5		95	-	-	1622
mezz 6 (internal)		95	-	-	1205
1st 1		95	-	-	301
1st 2		95	-	-	337
1st 3		95	-	-	2036
1st 4		95	-	-	338
1st 5		95	-	-	1156
1st 6 (internal)		95	-	-	1189
2nd 1		95	-	-	303
2nd 2		95	-	-	338
2nd 3		95	-	-	1830
2nd 4		95	-	-	339
2nd 5		95	-	-	1159
2nd 6 (internal)		95	-	-	1190
west stairs 1		-	95	-	13
west stairs 2		-	95	-	17
west stairs 3		-	95	-	19
west stairs 4		-	95	-	14
west stairs 5		-	95	-	14
west stairs 6		-	95	-	14
north stairs 1		-	95	-	21
north stairs 2		-	95	-	35
north stairs 3		-	95	-	24
north stairs 4		-	95	-	25
office amenity/cycle storage		95	-	-	279
office entrance int		95	-	-	491
office entrance perim1		95	-	-	326
office entrance perim2		95	-	-	222
office entrance perim3		95	-	-	625
reception office/amenity		95	-	-	179
retail unitA perim		-	95	22	640
retail unitA int		-	95	22	606
retail unitB perim		-	95	22	659
retail unitB int		-	95	22	627
retail unitC perim		-	95	22	966
retail unitC int		-	95	22	752
retail unitA stair		-	95	-	33
retail unitB stair		-	95	-	33
retail unitC stair		-	95	-	36
small WC 1		-	95	-	31
small WC 2		-	95	-	40
small WC 3		-	95	-	23
small WC 4		-	95	-	25

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
small WC 5		-	95	-	24
small WC 6		-	95	-	39
small WC 7		-	95	-	22
large WC 1		-	95	-	259
large WC 2		-	95	-	229
large WC 3		-	95	-	232
small WC 8		-	95	-	24
roof zone 1		95	-	-	1011
mezz rear entrance 1		-	95	-	34
roof zone 2		95	-	-	363

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

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
mezz 1	NO (-34%)	NO
mezz 2	NO (-3%)	NO
mezz 3	NO (-24%)	NO
mezz 4	NO (-13%)	NO
mezz 5	NO (-89%)	NO
mezz 6 (internal)	NO (-66%)	NO
1st 1	NO (-35%)	NO
1st 2	NO (-50%)	NO
1st 3	NO (-69%)	NO
1st 4	NO (-48%)	NO
1st 5	NO (-49%)	NO
1st 6 (internal)	NO (-82%)	NO
2nd 1	NO (-34%)	NO
2nd 2	NO (-48%)	NO
2nd 3	NO (-43%)	NO
2nd 4	NO (-43%)	NO
2nd 5	NO (-43%)	NO
2nd 6 (internal)	NO (-74%)	NO
office entrance int	NO (-66%)	NO
office entrance perim1	NO (-39%)	NO
office entrance perim2	NO (-30%)	NO
office entrance perim3	NO (-36%)	NO
reception office/amenity	N/A	N/A
retail unitA perim	N/A	N/A
retail unitA int	N/A	N/A
retail unitB perim	NO (-23%)	NO
retail unitB int	NO (-71%)	NO
retail unitC perim	N/A	N/A
retail unitC int	N/A	N/A
retail unitB stair	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
roof zone 1	NO (-41%)	NO
roof zone 2	NO (-51%)	NO

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

Separate submission

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

Separate submission

EPBD (Recast): Consideration of alternative energy systems

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

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Area [m ²]	3822	3822
External area [m ²]	5266	5266
Weather	MAN	MAN
Infiltration [m ³ /hm ² @ 50Pa]	5	3
Average conductance [W/K]	3439	2071
Average U-value [W/m ² K]	0.65	0.39
Alpha value* [%]	9.13	9.13

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

Building Use

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

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	3	1.74
Cooling	2.8	7.05
Auxiliary	5.68	3.55
Lighting	12.26	18.47
Hot water	0.88	0.87
Equipment*	35.28	35.28
TOTAL **	24.62	31.68

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

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

Energy Production by Technology [kWh/m²]

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

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	76.39	112.21
Primary energy* [kWh/m ²]	75.59	94.84
Total emissions [kg/m ²]	12.8	16

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

HVAC Systems Performance										
System Type	Heat dem MJ/m2	Cool dem MJ/m2	Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEEF	Cool SSEER	Heat gen SEFF	Cool gen SEER	
[ST] Central heating using water: floor heating, [HS] LTHW boiler, [HFT] Electricity, [CFT] Electricity										
Actual	274.6	0	26.8	0	1.1	2.85	0	3	0	
Notional	209.4	0	23.9	0	1.1	2.43	0	----	----	
[ST] Central heating using water: floor heating, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	44.4	0	4.3	0	8.1	2.85	0	3	0	
Notional	29.4	0	3.4	0	11.6	2.43	0	----	----	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	31.7	49.4	2.7	3.6	6.7	3.33	3.8	3.5	4	
Notional	10.4	117.9	1.2	9.1	3.7	2.43	3.6	----	----	

Key to terms

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

Key Features

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

Building fabric

Element	U _{i-Typ}	U _{i-Min}	Surface where the minimum value occurs*
Wall	0.23	0.31	External Wall
Floor	0.2	0.22	Ground Floor
Roof	0.15	0.22	Roof
Windows, roof windows, and rooflights	1.5	1.9	EW panel 0.8
Personnel doors	1.5	-	No personal doors in project
Vehicle access & similar large doors	1.5	-	No vehicle doors in project
High usage entrance doors	1.5	-	No high usage entrance doors in project
U _{i-Typ} = Typical individual element U-values [W/(m²K)]		U _{i-Min} = Minimum individual element U-values [W/(m²K)]	
* There might be more than one surface where the minimum U-value occurs.			

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

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