
Holiday Inn Express, Manchester

Sustainable Design and Construction Statement

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Executive Summary

This Sustainable Design and Construction Statement has been prepared to demonstrate how the proposed development responds positively to national and local sustainable policy requirements.

The proposed project is to extend the existing hotel adding additional floors retaining most of the plant on the existing roof, constructing 2 additional storeys above the plant deck. The existing plant deck will become the 11th floor and will have an open façade all around its periphery. The new 12th and 13th floors will have an additional 24 guest bedrooms between them.

The proposed development supports the sustainability objectives of both local and national policy, including a range of sustainable design measures to respond positively to the policies of the Manchester Local Plan.

Sustainable design and construction measures incorporated into the development proposals for the Holiday Inn Express include:

- Development in a **sustainable location**
- **CO₂ Emissions & Primary Energy reductions** of new dwellings beyond 2021 Part L Targets.
- Design measures to **adapt for climate change**.
- Specification of **sustainable materials**.
- **Minimising construction material waste** through responsible design.
- **Recycling** and management of operational waste.

By implementing these sustainable design and construction measures the development will provide occupants with a high quality, sustainable building and lifestyle, with a range of social and economic benefits while incorporating measures which protect and enhance the environment.

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1. Description of the Development

The development is for the proposed extension of the Holiday Inn Express on Oxford Road, Manchester consisting two new floors created over the existing plant deck, relocation of some plant equipment to a new roof top plant deck.

2. Development Plans and Policies

This section of the report provides an overview of the relevant national and local legislation, planning policy and guidance relating to sustainable design and construction for new developments.

The following is a summary of current national guidance and policy in relation to sustainable development.

2.1 UK Sustainable Development Strategy

In 2005, the Government published an updated strategy for implementing sustainable development across the UK.

This strategy acts as an umbrella document from which a range of specific policies and legislation have been derived. Published in 2005, the strategy has taken a recently renewed focus in light of the government's definition of sustainable development in the National Planning Policy Framework (NPPF).

One of the main aims of this strategy is to recognise the threat of climate change and ensure that the UK develop appropriate strategies to mitigate and adapt to this worldwide problem.

The document established five key principles that will underpin the national sustainable development strategy:

- Living within environmental limits.
- Ensuring a strong, healthy, and just society
- Achieving a sustainable economy
- Promoting good governance
- Using sound science responsibly.

The strategy is and will be implemented at a national level through the development of more specific strategies at a government department or sector levels.

With regards, specifically to planning and the built environment, this document sets the basis for the development of plans and policies that promote development while mitigating and adapting to climate change.

2.2 Climate Change Act

The Climate Change Act (2008) sets a legally binding target for reducing UK CO₂ emissions by at least 80% on 1990 levels by 2050.

At the end of June 2016, the Government published the Fifth Carbon Budget. The budget sets a target for emission cuts of 57% from 1990 levels by 2030.

The House of Lords passed the Carbon Budget Order 2016 on 19th July, making the budget and its target law.

2.3 UK Carbon Plan

In 2011, the Government published an updated Carbon Plan establishing how the UK will achieve decarbonisation and make the transition to a low carbon economy. It sets these objectives within a framework of mitigating and adapting to climate change and maintaining energy security in a way that also minimises costs and maximises the net benefits to the UK economy.

With regards to development, the Carbon Plan presented the Government's approach to promoting their intended delivery of low carbon, resilient and adaptive buildings and enabling sustainable transportation as positive contributions to aid national carbon reduction targets.

In 2015, the Green Construction Board published the Low Carbon Route map for the Built Environment. This was updated as the Low Carbon Route map for the Built Environment, prepared in 2013, aimed at delivering an 80% cut in UK built environment carbon emissions by 2050 compared to 1990 levels.

It found that annual emissions in the UK had actually increased since 2009, primarily due to an increase in gas consumption from heating. The report states "*There has been a growing divergence occurring over just a few years (2009 through 2013)*". Given the wrong direction in travel in emissions required to meet the ambition for built environment carbon reductions (and statutory targets for the UK as a whole), a significant transformation from the ongoing status quo trajectory was needed.

2.4 Building Regulations

While the Building Regulations are not planning policy, but statutory instruments, they have been used to support the required outcome that the policy required. Specifically, Building Regulations Approved Document Part L: Conservation of Fuel and Power set out the requirements for energy and carbon performance in existing buildings.

Periodic updates to these national regulations will drive energy efficiency and carbon reduction improvements. The 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.

The latest (2021) Building Regulations Part L came into effect on 15th June 2022 and incorporates changes to the metrics used to demonstrate the efficiency of buildings.

2.5 Fixing the Foundations

In 2015 the elected government produced a number of policy documents including “Fixing the Foundations” published in July.

The document set out the Government’s plan for future carbon reduction requirements in new development with the intention to no longer continue with the Allowable Solutions scheme and postpone any increases in on-site energy efficiency standards in 2016, which were planned as part of the national zero carbon buildings policy.

It is understood that the Government aims to keep energy efficiency standards under review, recognising that existing measures to increase energy efficiency of new buildings should be allowed time to become established.

2.6 National Planning Policy Framework

Updated in February 2019, the NPPF provides a framework for the development of locally prepared plans under 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”.

It clearly states that in order to deliver sustainable development, the planning system must perform three distinct objectives, aligned to the three pillars of sustainability, which must not be taken in isolation and should be pursued jointly:

- **An economic objective** to contributing to building 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 providing the supply of housing required to meet the needs of present and future generations and by creating a high-quality built environment, with accessible local services that reflect the community’s needs and support its health, social and cultural well-being.
- **An environmental objective** contributing to protecting and enhancing our natural, built, and historic environment and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.

These objectives are key to the preparation of local 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.

2.7 Planning Practice Guidance

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

The PPG is an important material consideration in planning decisions and should generally be followed unless there are clear reasons not to do so. It outlines 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 PPG reiterates that local authorities should set sustainability policies for new housing that are in line with the government's Housing Standards Review. The latest update to the PPG in April 2016 confirms 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.

The PPG also states that the distribution and design of new development, and the potential for servicing sites through sustainable transport solutions, are particularly important considerations.

2.8 The Local Development Plan

The Manchester Local Plan was adopted in July 2012 and contains the following sustainability policies and targets.

- **Policy DM1, Development Management** – new commercial developments are to demonstrate best practice which will include the application of the BREEAM (Building Research Establishment Environmental Assessment Method) standards. Provisions similar to the Code for Sustainable Homes will also apply to all new non-domestic buildings.
- **Policy EN4, Reducing CO₂ Emission by Enabling Low and Zero Development** – Wherever possible new development and retrofit projects, including energy generation plant, must be located and designed in a manner that allows advantage to be taken of opportunities for low and zero carbon energy supplies.
- **Policy EN5, Strategic Areas for low and zero carbon decentralised energy infrastructure** - it is considered that the Oxford Road Corridor, will have a major role to play in achieving an increase in the level of decentralised, low and zero carbon energy supplies available.
 - New development, regeneration and retrofit projects, will be expected to take place in the context of more detailed proposals for decentralised low and zero carbon energy infrastructure in the form of energy proposals plans.
- **Policy EN6, Target Framework for CO₂ reductions from low or zero carbon energy supplies** - Developments over 1,000 sq m will be expected as a minimum to meet the target shown in Tables 12.1 or 12.2, unless this can be shown not to be viable. This should be demonstrated through an energy statement, submitted as part of the Design and Access Statement. Such a statement will be expected to set out the projected regulated energy demand and associated CO₂ emissions for all phases of the development.

- **Policy EN8, Adaptation to climate change** - All new development will be expected to be adaptable to climate change in terms of the design, layout, siting and function of both buildings and associated external spaces.
- **Policy EN15, Biodiversity and Geological Conservation** - The Council will seek to maintain or enhance sites of biodiversity and geological value throughout the City.

2.9. Validation Requirements

Manchester City Council requires developments to provide details of the sustainability measures incorporated into the development through the provision of the following documents:

- **Sustainable Design and Construction Statement** – Demonstrating how the development will meet the highest standards of sustainable design and construction addressing the requirements of Policy DM1.
- **Energy Statement** – Demonstrating how development proposals meet the requirements of Policy EN6 including calculations of the estimated energy demand and carbon dioxide emissions, and design proposals to reduce this in line with the energy hierarchy for efficient design, decentralised energy, and on-site renewable energy technologies. Targets are set out within tables 12.1 and 12.2.

2.10 Planning Policy Summary

Both local and national policy aims to ensure the delivery of sustainable and well-designed homes and other buildings which mitigate and adapt to the potential impacts of climate change.

The Manchester Local Plan confirms the Council's commitment to the creation of sustainable new developments in the city.

Latest national planning policy and guidance confirms the Government's approach to sustainable development is being driven through the updates to the Building Regulations to ensure that new homes are well designed and reduce emissions in line with the UK's national carbon targets.

The Manchester Local Plan requires developments to consider a range of sustainable design measures to ensure the development is resilient to climate change, including sustainable construction measures, incorporating low carbon renewable energy systems, considering measures to reduce carbon emissions, as well as measures to enhance biodiversity value.

In support of the Council's policies, it is recommended that developments provide a Sustainable Design & Construction Statement and an Energy Statement to demonstrate how the development responds to these policies.

3. Sustainable Design Principles

The following is a summary of the sustainable design measures that will be incorporated into the design of the development to deliver a sustainable, low carbon new development.

This section outlines the Sustainable Design and Energy Strategy for the proposed development demonstrating how the buildings will respond to both national and local planning policy, namely the requirements of Policies DM1, EN4, EN5, EN6, EN8 and EN15.

The Council's validation requirements have been used to structure the statement to assist in highlighting various economic, social, and environmental benefits delivered:

- 3.1 Energy and Carbon Emissions** - How the building is designed to operate efficiently and how energy is to be supplied to the building.
- 3.2 Adaptation to Climate Change** - How the building incorporates adaptation measures.
- 3.3 Materials** – How the design has considered the procurement of materials which promote sustainability, including by use of low impact, sustainably sourced, re-used and recycled materials and when there are no alternatives but to use carbon enriched materials, what emphasis is placed on design quality to reduce the amount deployed.
- 3.4 Waste and Recycling** – How the development incorporates waste and recycling measures.
- 3.5 Adaptation to Future Needs** – How the development design is flexible and adaptable to future occupier needs.
- 3.6 Biodiversity** - How the development incorporates measures that support, and where possible, enhance biodiversity.

3.1.1. Energy and CO₂ Emissions

Developing energy efficient, low carbon buildings is a key objective of national policy and recent changes to the Building Regulations support the reduction of energy demand through efficient building design.

The development will be designed with a fabric first approach, utilising lifetime passive design measures, before applying low and zero carbon technologies to those consumed energies. With the latter it recognises the errors in the gas energy strategy previously pursued by the UK government and the substantial advances now made in reducing the electrical supply carbon footprint.

Before immediately amending the design to incorporate a raft of renewable technology to reduce the development's CO₂ emissions it is important to ensure the design has optimised the development's energy performance by considering the following energy hierarchy:

- 1. Be lean** – use less energy through energy efficient design.
- 2. Be clean** – supply energy efficiently through use of decentralised energy
- 3. Be green** – use on-site renewable energy technologies.

Be Lean – Energy Efficiency

Building Fabric

The emphasis on reducing energy demand starts first with the building fabric by improving insulation levels to minimise heat losses. This will be harder within the existing building, but insulation will be upgraded wherever it is permissible. It is proposed that the buildings are designed by the architect, with U-values for external walls, floors, roof areas, windows, and doors in excess of the existing building fabric.

High performing levels of air tightness will reduce heat loss through infiltration. As the U-values are optimised the significance of thermal bridging increases. Comprehensive consideration of construction details will reduce cold bridging to further minimise heat losses.

The façade design will be used to optimise daylight levels to all residences by varying g-values and the size of glazing dependent on orientation.

In turn this will aid in reducing the risk of summer overheating to southern elevations whilst accessing useful solar gains to the northern elevations during the winter months.

Lighting

Lighting has a major and direct impact on carbon emissions and is one area where they can be reduced effectively through considered design. Therefore, there is more incentive to examine lighting design and specifically with this building, emphasis shall be given to:

- **Prevention of Overlighting** - Areas with high levels of natural daylight will be zoned separately and a control strategy implemented to allow more consistent lighting levels across rooms.
- **Lighting Efficacy** - Installed lighting efficacy will have an efficacy in excess of 90 lm/W, 20% greater than the current Building Regulations minimum standards.
- **Control** - All store rooms and “back of house” areas shall employ occupancy detection to switch lighting. Lighting to communal corridors shall be controlled by occupancy detection, with lighting levels being reduced by half when not occupied.

Heat Recovery Technology

Local guest room ventilation is provided by a mechanical ventilation heat recovery (MVHR) system which has supply and exhaust fans, cross flow heat exchanger and filters. The recuperation process reduces heat losses and improves energy efficiencies.

Unregulated Energy

Whilst planning policies and 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 guest rooms together with the implementation of smart control systems where appropriate will reduce energy usage.

Decentralised Energy

A feasibility study into the installation of Combined Heat and Power to the development will be conducted in line with the requirements of Planning Policy EN6. However, the gradual decarbonisation of the electricity network will reduce the viability of CHP as an effective technology to reduce carbon in the future.

There is no district heat network within the immediate vicinity, but provision will be made to connect to any future network that may become available.

Be Green – Renewable Energy Technology

Within the framework of the energy hierarchy, major developments should reduce regulated CO₂ emissions through the use of energy efficiency measures, decentralised technology, and on-site renewable energy generation.

The design of new developments should consider the use of renewable energy technologies such as: biomass heating; renewable energy from waste; photovoltaic; solar water heating and heat pumps. Planning Policy encourages the use of a full range of renewable energy technologies, which should be incorporated wherever site conditions make them feasible and where they contribute to the highest overall and most cost-effective CO₂ emissions savings for a development proposal.

Those renewable technologies considered have been found to be unfeasible and discounted due to factors such as lack of space and impact on other aspects of the design, and the nature of the development being an extension to an existing building.

Reducing Transport Emissions

The proposed location of the development ensures that the occupants have access to a wide range of services and amenities reducing the need to travel. In addition, being centrally located the development has easy access to a range of sustainable and low carbon transport options.

Local Amenities

The development is located close to several local amenities, including shops, restaurants, theatres and student accommodation. The Arndale shopping centre is located with 1 mile of the development and there are a plethora of bars and restaurants also nearby in areas like Deansgate and the Northern Quarter. There are also cultural opportunities with Manchester Central, The Palace Theatre and Odeon Cinema all close by.

Walking and Cycling

Located close to the city centre, the site is within easy walking distance of local sustainable transport links, the city centre retail area and employment opportunities.

To facilitate cycling, the Manchester Oxford Road Cycle Hub is less than 200 yards away with ample cycle storage to aid and promote the use of bicycles as an environmentally sustainable transport option within the city centre.

Public Transport

In addition to the local walking and cycling links, the site benefits from a number of sustainable transport modes within a few minutes walking distance of the site, so fully supporting and encouraging sustainable modes of transport and reducing the reliance on private cars. The development has excellent transport links with nearby stops for both bus and tram networks and Manchester Oxford Road Station located close by, providing local and national rail links.

Through these measures, the development will encourage the use of sustainable transport and reduce emissions associated with travel.

3.1.2. Adapting to Climate Change

One of the main challenges facing the World, UK and any new development is the need to mitigate and adapt to a changing climate.

Adapting to a changing climate will impact on the design, construction, location, cost, and operation of all developments. This is why NPPF's core planning principles is to encourage developments to consider climate change adaptation.

The following sections outlines the key climate change adaptation measures considered appropriate for this development based on the latest national guidance under the following headings:

Overheating

The issue of overheating and the effect it has on the cooling requirements within buildings has been highlighted for several years. The current trend for increasing summer temperatures and the projected further increases due to climate change puts even further emphasis on minimising the risks of overheating.

This development will be designed to reduce the use of comfort cooling by providing control over unwanted solar gains through good design. Solar treatment of glazing to reduce the g-value to southern elevations will reduce the influence of solar gains.

Water Efficiency

Conservation of water is a major focus in sustainable design with potable water supplies edging ever closer to being insufficient to cope with the current national demand.

The development will adopt a range of efficiency measures to reduce the building's water consumption. Most water usage in this building will be within the bathrooms and as such water efficient sanitaryware will be utilised to these areas in particular. This will include the provision of aerators to taps and showers together with dual flush toilets.



The development will be designed to exceed the Building Regulations standard water efficiency rate of 125 litres/person/day.

Drainage

The hotel extension will utilise the existing drainage systems.

3.2. Materials

The detailed proposals for the development have been developed in response to the specific constraints and opportunities of the site, responding positively to its local context.

The development will aim to use a range of sustainable materials and strategies regarding material including:

- **Provision of sustainable materials**, taking account of life cycle assessment and the embodied carbon of production and transport of materials.
- **Use of sustainably sourced timber** from Forest Stewardship Council (FSC or equivalent) sources.
- **Use of Accredited Construction Details** to minimise thermal bridging.
- **Avoidance of harmful insulation materials** containing substances known to contribute to stratospheric ozone depletion or with the potential to contribute to global warming.
- **High design quality** leading to a reduction or minimal use of materials throughout.
- **External walls** will be lightweight construction formed of anodised aluminium rainscreen cladding, fixed to an SFS external wall system, filled with mineral wool insulation, plasterboard lining to the room side. Windows will be aluminium double glazed, the new roof will be inverted with hot melt, rigid insulation and concrete pavers / ballast.
- **The building will achieve the U-values** in table 4.1 of the Approved Document Part L2.

The final design and specification of major building elements will be determined during the detailed design of the development though these will be in accordance with the baseline assumptions made with respect to U-values and less is more, along with the aims listed above.

3.2.1. Waste and Recycling

Construction and Demolition Waste Management

Prior to the commencement of works on site, a Pre-Demolition Audit and Construction Environmental Management Plan (CEMP) will be developed by the principal contractor to ensure the use of measures to minimise waste during the demolition and construction phases of the development.

Where feasible, material from demolition will be re-used on site in the first instance or diverted from landfill when re-use is not appropriate.

The reduction, re-use and recycling of construction waste is to be prioritised through measures such as avoidance of over-ordering, supervision of deliveries and use of secure materials storage facilities.

In addition, the development will be registered with the Considerate Constructors Scheme and achieve certification against the Code of Considerate Practice.

Operational Waste Management

In accordance with the principles of the waste hierarchy, the development will make provision for the storage of non-recyclable waste and recyclable waste including dedicated storage for waste in the new homes to encourage guests' behaviour to recycle waste materials.

The development proposals include ease of access to the refuse store for all occupants, and the store is managed on a day-to-day basis to ensure that waste storage space is maximised.

Full consideration will be given to the Council's waste management infrastructure and services to ensure that the occupiers have the necessary infrastructure to participate in any kerbside recycling services.

3.5 Adaptation to Future Needs

Creating a development design that is flexible and adaptable to future occupier needs requires careful consideration of how the environment and building function may alter over its lifetime.

Measures to be incorporated to facilitate future adaptation for occupants include:

- Open span frame structure and generous floor to slab height allowing **maximum flexibility for change of use** in the future
- **Nearby dedicated cycle parking** to encourage the use of sustainable transport modes
- Promotion of **links to extensive sustainable transport** options

These measures aim to ensure guests have access to services and facilities which enable a flexible, adaptable lifestyle fit for the future.

3.2.2. Biodiversity

This city centre location would not typically be a site for increased biodiversity. However, where feasible, the proposed development will incorporate measures to support and enhance the environment through consideration of the existing site, including measures to mitigate the impact of the development and enhance site biodiversity.

Holiday Inn Express, Manchester

4. Conclusion

This Sustainable Design and Construction Statement has been prepared to demonstrate how the proposed development responds positively to national and local sustainable policy requirements.

The proposed development supports the sustainability objectives of both local and national policy, including a range of sustainable design measures to respond positively to the policies of the Manchester Local Plan requirements.

Sustainable design and construction measures incorporated into the development proposals for the Holiday Inn Express include:

- Development in a sustainable location close to a range of key local services, amenities and employment opportunities accessible via walking, cycling and public transport.
- Design that includes a range of fabric and energy efficiency enhancements, which reduce energy consumption and carbon emissions of new dwellings in excess of the 2021 Building Regulations.
- Provision of high efficiency electricity powered heating systems which will ensure the development benefits from continued decarbonisation of the UK electricity grid.
- Design which includes measures to adapt to the effects of climate change including overheating assessment, and the use of water efficiency measures.
- Design which will include the specification of sustainably and responsibly sourced materials e.g., FSC certified timber.
- High quality design reducing the material waste deployed within the design and therefore the carbon footprint associated with the not required material.
- The provision of waste storage facilities to enable recycling and the management of waste that maximise waste storage space
- The design of the development provides guests with an visitor experience with easy access to services and amenities.
- Provision of measures to protect onsite ecology and enhancement measures to increase site biodiversity.

Through these sustainable design and construction measures it is considered the development will provide occupants with a high quality, sustainable building and lifestyle, with a range of social and economic benefits while incorporating measures which protect and enhance the environment.