RIDGE

WIGAN TOWN CENTRE
GALLERIES SHOPPING CENTRE
SUSTAINABILITY STATEMENT

15/06/2021

5013049 – WIGAN TOWN CENTRE GALLERIES SHOPPING CENTRE

15th June 2021

Prepared for

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VERSION CONTROL

VERSION	DATE	DESCRIPTION	CREATED BY	REVIEWED BY
1.0	04.06.2021	Draft For Comment	LP/WB	WB/SS
2.0	11.06.2921	Updated with Unregulated Energy & Air Quality	WB	CB
3.0	15.06.21	Description updated	WB	

CONTENTS

1. INTRODUCTION

Ridge & Partners LLP have been appointed by Cityheart to prepare a sustainability statement in support of the hybrid planning application in respect of Wigan Market and The Galleries Shopping Centre.

Description

Full planning application for the demolition of the existing Wigan Market and The Galleries Shopping Centre buildings and structures and the erection of four residential blocks (F, G, H and J) totalling circa 218 units (Use Class C3); two commercial units (Use Class E); a 4/6 storey Hotel (Use Class C1); a Pavilion to include a food and beverage establishment and events space (Use Class Sui Generis); and a new Market Hall with market stalls, food and beverage stalls, coworking space and ancillary facilities within the existing Marketgate Shopping Centre site (Use Class E) together with associated highways works, works to basement, car parking, outdoor events space, public realm and ancillary works.

Outline planning application for the erection of four plots (Plot 1: Multi-Media Centre, Plot 2: Blocks A, B and C, Plot 3: Block E and Plot 4: Block D) of up to 8 storeys to include a maximum of 265 residential units (Use Class C3); 1,000sqm maximum commercial floorspace (Use Class E) and a Multi-Media Centre including a multiscreen cinema, multi-purpose event space, bowling alley, indoor mini golf, food and beverage units up to a maximum 9,250sqm (Use Class E / Sui Generis) with associated access, parking, servicing and public realm, all matters apart from access reserved.

This report seeks to demonstrate how the proposals meet with the relevant development plan policy objectives for new build developments. This statement should be read in conjunction with other documents which make up the planning application submission. The report has been produced in collaboration with the design team for the project and is based on correspondence with the team.

2. POLICY CONTEXT

2.1. National Planning Policy Framework

A revised National Planning Policy Framework (NPPF) was published in February 2019 which sets out the government's planning policies for England and how they are expected to be applied. This framework confirms on page 5 that:

'*the purpose of the planning system is to contribute to the achievement of sustainable development.*'

This highlights sustainability as a critical issue that runs throughout all of the planning policies. The National Planning Policy Framework (NPPF) defines sustainable development in agreement with the U.N. definition of "meeting the needs of the present without compromising the ability of future generations to meet their own needs". The NPPF outlines how three overarching objectives need to be pursued in mutually supportive ways in order to achieve sustainable development. These objectives are outlined below:

- An **economic objective** – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types 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** – to support 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 a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being.

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

2.2. Climate Change Act

The Climate Change Act 2008 committed the UK to an 80% reduction in carbon emissions relative to the levels in 1990, to be achieved by 2050. In June 2019, secondary legislation was passed that extended that target to require that the UK reduce 100% greenhouse gas emissions to net zero by 2050 relative to 1990 levels.

2.3. Wigan Local Plan

The Wigan Local Plan (September 2013) is the Adopted Development Plan. The following policies from the current adopted plan are relevant:

Policy SD 1 - Presumption in favour of sustainable development

In considering development proposals the council will take a positive approach that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. Wigan council will work proactively with applicants to find solutions which mean that proposals can be approved wherever possible, and to secure development that improves the economic, social and environmental conditions in the area.

Planning applications that accord with the policies in this Core Strategy and subsequent plans will be approved without delay, unless material considerations indicate otherwise.

Policy CP 7 – Accessibility

The local plan identifies the following opportunities to improve accessibility to key destinations for people and goods within and outside the borough:

1. Seeking to maximise use of the existing bus and rail network and improve opportunities for bus travel and interchange, particularly in town centres and at rail stations.
2. Developing and enhancing on and off-road networks for walking and cycling, to connect local residents to employment and community facilities as well as for leisure purposes.
3. Ensuring the provision of appropriate, well designed, convenient, safe and secure parking for cycles, motorcycles, cars, coaches and vans / lorries, including as part of new development.
4. Enabling 'equality of access' to our transport networks and facilities for disabled people and other vulnerable groups.
5. Supporting the appropriate provision of infrastructure for the charging of electric vehicles.

Policy CP 9 – Strategic landscape and green infrastructure

The local plan aims to improve natural environments and open spaces within and between towns and settlements by:

1. Incorporating measures to help to reduce the extent of climate change and/or adapt to a changing climate.
2. Requiring all new major development proposals to incorporate new green infrastructure in larger areas of new development, to help secure regeneration and/or economic development.
3. Greening the urban environment by developing and improving networks of smaller scale, urban green infrastructure including parks, gardens, allotments, trees and green roofs.
4. Protecting trees and woodlands of value to amenity.

Policy CP 10 – Design

Wigan council intend to improve the built environment of the borough and help make it a better place to live, visit and for businesses to locate and thrive by ensuring that, as appropriate, new development: Includes measures to minimise the impact of and adapt to climate change and conserve natural resources and meets established national standards for sustainability and national carbon reduction targets.

Policy CP 12 - Wildlife Habitats and species

The local plan proposes to safeguard important geological features by:

1. Requiring reasonable provision to be made for wildlife habitats and features beneficial to geological conservation as part of new development.
2. Taking account of the impact of climate change in the enhancement of existing and the creation of new wildlife habitats.
3. Enabling more people to appreciate, enjoy and learn about wildlife and geo-diversity in the borough.

Policy CP 13 - Low-carbon development

This policy aims to reduce the emissions of carbon dioxide arising from new development and help reduce the impacts of climate change on our environment, economy and quality of life by:

1. Encouraging all development, where relevant, to conform to the energy hierarchy by:
   a) minimising the demand for energy, before
   b) maximising the efficiency of energy use, before
   c) implementing low-carbon dioxide and renewable energy technologies.
2. Encouraging proposed residential development of 10 units or more and/or non-residential development of more than 700 square metres to produce and submit a carbon reduction strategy setting out how the development will incorporate or make provision for, subject to viability, decentralised, renewable or low carbon energy sources to reduce the carbon dioxide emissions of energy use by at least 15%.
3. Encouraging new development to be designed, orientated and constructed so that it can maximise energy efficiency, reduce reliance on fossil fuel energy and take advantage of opportunities for renewable or low carbon dioxide technologies.
4. Encouraging reasonable improvements to be made to the energy performance of the existing building when an extension or other change to a building is proposed.

Policy CP14 – Waste

This policy will ensure greater efficiency in the use of resources by:

1. Requiring proposals for the development of waste management facilities to demonstrate that they will enable the waste that they will handle to be dealt with as far up the waste hierarchy as practicable, namely:
   a) preparing for re-use, before
   b) recycling, before
   c) other recovery, before
   d) disposal, as a last resort.
2. Encouraging provision for recycling, including innovative community recycling schemes, within appropriate large residential developments.
3. Requiring the preparation of site waste management plans for major developments and waste management plans for other developments as appropriate.

Policy CP 15 – Minerals

This policy seeks to meet the need for minerals whilst minimising the adverse impacts on the environment by promoting and, where possible, requiring efficiency in the use of minerals in development, including by encouraging the reuse of materials and the use of recycled and secondary materials as alternatives to primary aggregates.

Policy CP 16 – Flooding

Applications will be supported by Flood Risk Assessments (FRA) where appropriate that demonstrate the development will be safe and not increase flood risk elsewhere.

The developments will follow a sequential approach in accordance with national planning policy and incorporates appropriate mitigation and/or management measures to achieve, where possible, a reduction in flood risk overall.

Developments on greenfield sites should not increase the rate of surface water run-off and developments on previously developed land should provide a reduction of at least 30%, rising to a minimum of 50% in critical drainage areas.

Policy CP 17 - Environmental Protection

This policy encourages:

1. Actively seeking the reclamation and re-use of derelict and other previously-developed sites to bring land back into positive use.
2. Managing air quality, particularly in our Air Quality Management Areas, including by minimising the air pollution (and carbon dioxide emissions) likely to arise from new development.
3. Ensuring that new development does not give rise to the pollution of any watercourse, groundwater or mossland or result in the transfer of contaminated run-off to surface water sewers.
4. Ensuring that new development is planned and designed so that it does not have an unacceptable adverse impact on amenity and quality of life and/or that it will not itself be impacted upon in such a way by existing uses or activities in the area.

2.4. Wigan Council Outline Climate Change Strategy

Wigan Council declared a Climate Emergency on 17th July 2019 in a bid to acknowledge the urgency surrounding this complex and vital issue. Wigan Council has committed to display strong leadership and work collaboratively with communities, partners, and organisations to ensure our Council reaches the target of net zero carbon by 2038.

The Climate Change Strategy works alongside the Wigan Local Plan and aligns with the 5-Year Environment Plan for Greater Manchester 2019-2024

2.5. 5 Year Environment Plan for Greater Manchester

The 5 Year Environment Plan for Greater Manchester (2019-2024):

Our Energy Supply
The policy aims to reduce CO2 emissions that are produced by the energy consumption, shifting from fossil fuels to renewables via the following priorities:

- Increasing local renewable electricity generation, adding at least a further 45MW by 2024
- Decarbonising how we heat out buildings, adding at least a further 10TWh of low carbon heating by 2024

Our Transport and Travel
This policy intends to improve air quality and reduce CO2 emissions by changing the way goods and people use travel within the city by applying the following priorities:

- Increasing the use of public transport and active travel modes
- Phasing out fossil fuelled private vehicles and replacing them with zero emission alternatives

Our Homes, Workspaces and Public Buildings
This policy recognises the need to reduce CO2 emissions relating to operational energy of heating homes and commercial and public buildings. The plan summarises the priorities:

- Reducing the heat demand from existing homes, focusing on initiating a fundamental shift to whole house retrofit
- Reducing the heat demand from existing commercial and public buildings
- Reducing the heat demand in new buildings

Our Natural Environment
Greater Manchester seeks to protect, maintain, and enhance key natural assets and the benefits they provide with the following priorities:

- Managing land sustainably
- Managing water and its environment sustainably
- Achieving a net gain in biodiversity for new development

Our Resilience and Adaptation to Climate Change
This policy's priorities are:

- Embedding climate change resilience and adaptation in all policies.
- Increasing resilience and investment in all our critical infrastructure
- Implementing a prioritised programme of nature-based climate adaptation action.

3. CARBON REDUCTION STRATEGY

3.1. Introduction

Carbon reduction is key to tackling climate change. When discussing carbon in relation to climate change, this is a term used to cover all greenhouse gas emissions and is measured in terms of CO_2 equivalent. The carbon emissions associated with the development include embodied carbon, construction related carbon, and operational carbon, associated with the energy demand and transport needs of the occupants.

Buildings emit greenhouse gas emissions throughout their operation; this is associated with the energy used to heat, cool, light and ventilate the building, and also energy associated with any other systems used within the building (e.g. plug-in equipment). There are also more indirect operational carbon emissions associated with people's transport to, from and within the development and significant carbon emissions associated with the construction of the building, and embodied carbon within the materials from which the building is built.

Local Plan policy CP 13, Low-carbon development, requires Wigan council to improve carbon emissions of new developments. This requires provision of sustainable transport infrastructure, reducing energy demand and providing renewable energy. This Sustainability Statement shows how the proposed scheme would meet the requirements of Policy CP 13 and work towards the local plan objective.

The UK Climate Change Act targets a 100% reduction in greenhouse gas emissions by 2050 relative to 1990 levels. The Wigan Council Outline Climate Change Strategy commits to the target of net zero carbon by 2038. The Wigan Climate Change Strategy aspires for a betterment of the UK Climate Change Act goal and also aligns with Wigan Local Plan and the 5-Year Environment Plan for Greater Manchester 2019-2024.

3.2. Embodied Carbon

While operational carbon occurs gradually over the life of a building, embodied carbon emissions occur predominantly in the construction product supply chain during or just before construction of the building and therefore are emitted immediately. Once the building is constructed, they cannot be reduced further, as opposed to operational carbon emissions which could be reduced over the life cycle of the building through, for example, increased renewables in the national grid and improvements to the efficiency of building services. Reduction of embodied carbon emissions therefore plays an essential part in achieving net zero target set out in the UK Climate Change Act and the 2038 target outlined in the Wigan council Climate Change Strategy.

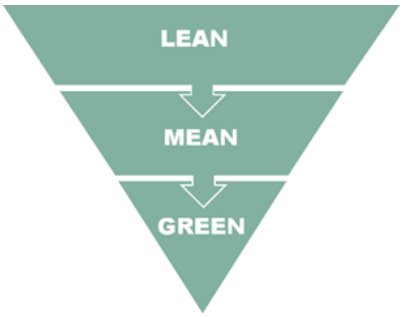
Major savings in embodied carbon can be achieved by reusing existing building elements and materials. Wigan council are looking to retain and reuse as much of the existing market hall as possible as well as reusing the existing basement and foundations. This saves on vehicle deliveries and new materials required. The developments contractors will also be encouraged to use sustainable construction methodologies including reducing carbon in construction for example using low carbon concrete mixes and smart building techniques to reduce wastage and fuel usage.

Each element of the Wigan Town Centre development intends to carry out a high-level whole life carbon assessment to inform material selection and reduce the developments embodied carbon footprint ($kgCO_2eq$) This High-level result will be compared to the RIBA target emissions. Alternative solutions include introducing cement replacements to foundations and ground floor slab concrete, optimising steel frame solutions to minimise required steel, and the optimisation of construction equipment use to reduce emissions. The proposal to reuse the frame and foundations for the Market Hall has the potential to save a significant amount of embodied carbon. This efficient use of materials aligns with the requirements of policy CP15 Minerals.

3.3. Operational Carbon and Energy

3.3.1. Energy Reduction Strategy

The strategy for reducing energy consumption within the development will follow the energy hierarchy below.



Lean - Use advanced building modelling and passive construction techniques as far as is cost effective.

Mean - Incorporate high efficiency systems and effective controls throughout the design.

Green - Incorporate renewable energy sources where necessary and economically viable to achieve targets or provide desirable benefits.

3.3.2. Passive Design Measures

Passive measures included within the design of the development to reduce energy use and the associated CO_2 emissions, in line with local plan policy CP 10, CP 13 & SD 1 are:

- Enhanced insulation to the building envelope which exceeds Building Regulation requirements
- Engineered facade design
- Reduced air permeability standard

Enhanced insulation to the building envelope: Limiting heat losses across the entire building envelope will future proof the energy efficiency of the development over its whole life. To achieve this, the fabric thermal U-Value requirements as detailed within Approved Document L2A 2013 of the Building Regulations will be improved upon.

The targeted values will be confirmed during the detailed design stage of the buildings in conjunction with finalisation of the energy efficiency measures included to meet the CO2 emission rates and on-site renewable energy generation target required by Planning requirements and Building Regulations.

Engineered Facade Design: The glazed proportion of the building façades and the glazing location will be designed to maximise the use of natural daylight to offset demand for artificial lighting. At the same time as being designed to maximise passive solar gains, the façade will be designed to minimise thermal losses through the use of high-performance glazing, optimising the glazed to opaque proportion of the façade and enhanced insulation levels above the minimum set down by Building Regulations.

Reduced Air Permeability: A significant percentage of heat loss from buildings is due to air infiltration associated with poor air tightness. By improving on the air tightness of the building it is possible to reduce infiltrations rates and thus reduce the heat losses, energy use and the associated CO_2 emissions.

The development will be constructed to improved building air tightness criteria significantly beyond the level required to comply with the Building Regulations. The development target is 3.0 m3/h/m2 @ 50 Pa air permeability against the allowable maximum limit of 10.0 m3/h/m2 @ 50 Pa set within Approved Document L2A of the Building Regulations. For further details please see Ridge & Partners, Wigan Galleries Energy Statement

3.3.3. High Efficiency Systems, Plant and Controls

High efficiency systems, plant, controls and equipment will be incorporated as follows: -

Low Energy Fit Out: All goods and appliances will be highly energy efficient to reduce energy demand. For example, internal lighting fittings will incorporate energy efficient LED lighting where practicable.

BMS Optimisation: The commercial buildings will be provided with an intelligent building management system that will learn how the building operates and optimise the function of the ventilation, heating and cooling systems to minimise energy use.

Sub-metering: Power, lighting, plant and separate tenancy areas will be metered to allow energy consumption to be pinpointed and reviewed if it is excessive. Baselines and targets will also be set to help reduce energy use.

Demand Operated Systems: Where ventilation, heating and cooling is provided to a space that may not always be in use, occupancy sensors will be used. These will shut down the systems serving the spaces when they are not required and turn them back on when instantly when they are required. This will utilise presence sensors in areas like toilets, and CO2 sensors in other spaces.

Variable speed drives: Variable speed drives shall be installed on circulation pumps and ventilation fans to allow the speed of the respective motors to be amended by the automatic controls to suit changing load of the building. This will ensure energy usage matches demand requirements.

Inclusion of heat recovery on ventilation systems: The ventilation systems installed within the development will also incorporate heat recovery within the air handling plant to recover heat from the air exhausted to heat the incoming fresh air and therefore reduce energy usage. The air handling plant will have a low specific fan power to minimise the energy used by the fans. The Ridge & Partners, Wigan Galleries Energy Statement identifies that 85% of heat from extracted warm air will be recycled to warm incoming air.

3.3.4. Low Carbon and Renewable Technologies

To complement the energy savings previously detailed and to meet the requirements of local plan policies CP 10 Design and CP 13 Low Carbon Development, the following renewable and low carbon technologies have been considered for use within the scheme design:

- Solar Water Heating
- Ground, Air or Water Source Heat Pumps
- District Heating
- Biomass
- Wind Power
- Photovoltaic Panels
- Combined Heat and Power
- Battery Storage

The Ridge & Partners Energy Statement provides further details on the feasibility of each technology.

Feasible Technologies: The preferred solution applies ground source heat pumps, PV arrays and battery storage. These technologies provide low carbon solutions to energy demand as well as being compatible with future decarbonisation of the national grid.

Ground Source Heat pumps: The ground source heat pump network proposed will absorb energy from the ground using boreholes. The holes are in the region of 200m deep holes cored into the ground with pipework

feeding down to the bottom and then returning to the surface in a loop. This pipework will absorb energy from the ground and then circulate it to the heat pumps. These borefieds will provide heating, cooling and hot water to the buildings to which they are connected. Although heat pumps require energy, in the form of electricity, they are considered highly efficient and clean because they utilise heat from the external environment to convert 1kW of electrical energy into 4kW of heat energy. There are in the region of 170 No boreholes predicted to generate between 2,000 and 3,000 Kw

Photovoltaic Panels: An extensive array of photovoltaic rooftop panels is proposed, with arrays on most of the buildings covering a total area of approximately 4,534m2 which can generate up to 685,517 kWhpa.

Battery Storage: A 1.5 Megawatt battery storage system is proposed to be housed in the basement car park. The principal of the battery storage system will be to store low cost and low carbon intensive electricity at off peak periods and then utilise this stored energy to offset higher cost/ carbon intense electricity at peak periods.

3.4. Predicted Carbon Emissions

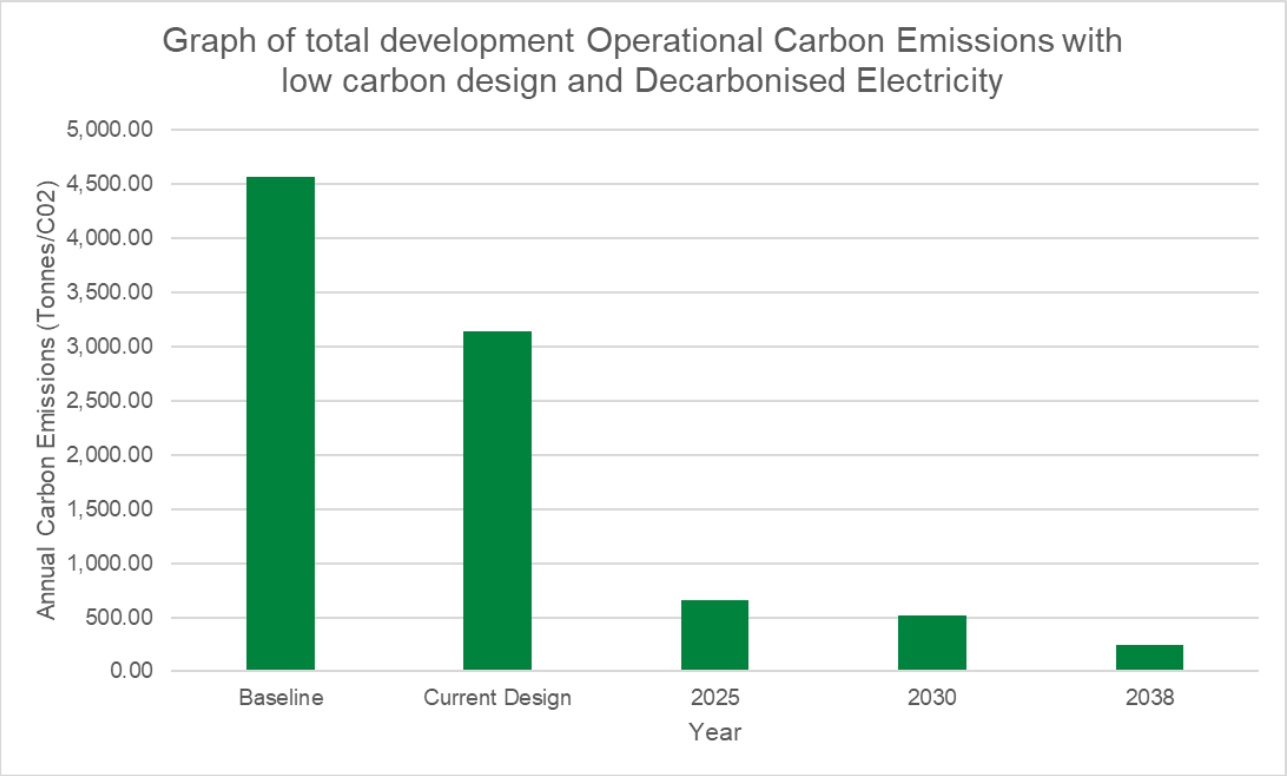
Wigan Council declared a Climate Emergency in 2019 and aim to reach the target of net zero carbon by 2038. As well as Local plan policies such as CP 13 low carbon development and the Greater Manchester 5 year Environment Plan priorities of resilience and adaptation to climate change, new developments have a responsibility to help reduce the impacts of climate change.

Ridge and Partners Energy Statement provides detailed results of energy modelling carried out on the proposed buildings for the regulated energy emissions against the current Approved Document 2013 part L. Dynamic detailed models have been used for those elements of the scheme being submitted as detailed applications and benchmark figures for those submitted in outline. Unregulated energy use within the commercial and residential elements has also been taken from the modelling/baselines outlined above. Emissions from the electric vehicle charging has not been estimated within the figures provided below.

Results show that, for regulated operational carbon emissions, an overall predicted improvement over the current target emissions of 18% for the commercial element and 70% for the residential buildings, with a total predicted development emission of 1,950 tonnes CO2 per annum (See section 7.8 Ridge Energy Statement). This figure is likely to reduce once detailed design modelling has been undertaken on the elements within the outline application which as included in the above as baseline estimates.

In addition to the regulated operational emissions, it has been estimated that the overall predicted unregulated operational emissions of the development would be a further 1,611 tonnes CO2 per annum. The inclusion of a 1,500 KVa battery storage facility which will capture, and store low carbon electricity is predicted to further reduce the total carbon emissions by 426 tonnes CO2 per annum (assuming a 50% utilization factor and charging for 3 hours per day). This results in an overall residual predicted operational development carbon emissions of 3,135 tonnes C)2 per annum. When compared to the Approved Document's Notional targets this indicates an overall improvement of 31.3%. This exceeds the requirements of CP13 (15% improvement)

Analysis has also been carried out to look at the impact of decarbonisation of the National Grid (figures taken from the Department of Business, Energy & Industrial Strategy (BEIS) 'Updated Energy and Emissions Projections 2018). This indicates that by 2038 the total predicted development operational emissions should have fallen from 3,135 tCo2 to 242 tCo2 per annum (a 94.7% reduction from the 'notional').



Whilst the above does not show a carbon neutral solution by 2038, it is expected that together with an improved grid decarbonisation factor and a mix of further infrastructure improvements or carbon offsetting, the development is predicted to be able to be carbon neutral or net carbon zero by 2038.

4. SUSTAINABILITY STRATEGY

4.1. Climate Change Resilience

Flexibility is inherent in the design of the development's spaces to provide maximum flexibility for all potential occupiers. The development will be designed to adapt to the climate changes expected in the future. This will minimise the need for carrying out works to adapt the building in future (and therefore reducing wastage).

Climate change adaptation measures included within the proposals include:

- Implementation of measures recommended by the drainage consultant will ensure that the site is not at significant risk of flooding.
- Building drainage infrastructure will be designed to accommodate a 40% increase due to Climate Change
- Building fabric and external finishes to be designed to withstand wetter winters, warmer summers, more precipitation, ground movements associated with wetter or dryer substrate and higher solar radiation.
- Building services to be designed to accommodate more extreme heat and cold event, greater temperature variation, warmer summers and increased solar radiation.
- Measures to reduce water consumption to account for decreased amounts of water available in the future (for details see Section 4.5).

- The design employing functional and adaptability measures for projected future scenarios will ensure waste is reduced if required to adapt to future solutions.
- Landscaping planting to accommodate future weather scenarios including coping with extremes of temperature and precipitation

The above aligns with Policy CP 10 – Designing for climate change and the Resilience and Adaptation to Climate Change priorities within the 5 Year Environment Plan for Greater Manchester.

4.2. Transport

A Transport Statement has been prepared for the planning application, which includes a review of the existing situation with regards to transport to and from the site, including by car, public transport, walking and cycling. A Travel Plan has been prepared for the site which includes measures proposed to further encourage the use of sustainable modes of transport, these include:

- Reserved parking space on site for Enterprise Car Club vehicle.
- At least 10% of residential car parking and 5% of public car parking to be fitted with EV charging facilities – the remainder of spaces to be provided with the infrastructure to increase supply when needed.
- Quality signage around the site indicating direction and distance to local cycling and walking routes.
- Provision of at least 1 cycle space per residential unit for residents in a secure and covered location; and provision of 90 staff/visitor cycle spaces.
- Provision of active travel information to residents and commercial users on cycle available pedestrian, cycle and public transport provisions, health benefits and available discount and green transport initiatives.
- Promotion of onsite Car share and Car Clubs

Additional measures to reduce the carbon emissions associated with transport include:

- Social Media site transport communication channel and sustainable travel incentive opportunities.
- Encourage commercial units to promote sustainable travel and encourage the opportunities for reducing o-ordinate and minimise waste collection trips.
- Promote the use of home delivery services

Cycle storage will enable cycles to be conveniently and securely stored. Racks will be covered and appropriately lit. The provision of appropriate cycle storage and cyclist facilities prioritises the sustainable transport method, as specified in CP 7 Accessibility.

Electric vehicle charging infrastructure will be provided as above which aligns with the Transport and Travel priorities within the 5 Year Environment Plan for Greater Manchester.

The Transport Assessment predicts that the proposed development will result in reduction in carbon emissions against the full occupation of existing uses on Site associated with operational transport (i.e. residents, visitors and workers). It is predicted that there will be an overall decrease in car trips against the extant position with a reduction of 54 trips during morning, 210 during the evening and 1846 during the Saturday peak periods.

4.3. Ecology, Landscape and Amenity

An ecologist has undertaken surveys and provide advice and recommendations on the protection and enhancement of ecology.

The existing site comprises predominantly hardstanding, with scattered trees which offer limited ecological value. The trees offer cover from predation, bird nesting habitat and a limited pollen and nectar source for invertebrates. The majority of buildings on the site have been surveyed both externally and internally, and no evidence of bat activity was found in any of the buildings on the site. The site offers no habitat connectivity and limited bat foraging and commuting opportunities. There will be no loss of suitable bat foraging and commuting habitat with the proposed development. None of the trees offer potential roosting features. A dusk bat emergence survey is recommended on the former Simply Thai restaurant.

The development proposals indicate the addition of around 140 new trees and significant areas of new shrub planting. These will be both part of the new public realm and as private residential communal gardens. The landscaping will bring biodiversity enhancement to the site by including the provision of native and non-native flowering perennial species, to provide a pollen and nectar source for invertebrates; Bird boxes and/or bat boxes on the converted building and/or retained trees and incorporation of planting of native tree species where practically possible.

The proposals above align with Wigan Council's Policies CP 9 – Strategic landscape and green infrastructure and CP 12 - Wildlife Habitats and species, providing greater biodiversity, new urban green infrastructure and will be designed to accommodate and reduce the effects of climate change.

4.4. Waste

Construction waste - The proposed development will seek to minimise waste as much as possible. This will be delivered through the creation of a project specific CEMP that covers on-site construction waste, off-site manufacturing waste and accurately records waste arisings and waste management practices, as specified in CP14 Waste.

Operational waste - The commercial elements of the development will have its own dedicated waste storage area which includes sufficient provision for storage of recyclable waste. Each area will be accessible to both building occupants and waste collection vehicles. Operational waste management will be managed in line with relevant policies and building standards

The minimisation of waste and maximisation of recycling throughout construction and operation aligns with policy CP14 Waste, that encourages provision for recycling.

4.5. Water

The development will incorporate appropriate Sustainable Drainage Measures (SuDs) in accordance with National Standards for Sustainable Drainage Systems. Any areas with known surface water flooding issues will have appropriate mitigation and construction methods to alleviation existing problems.

Development will conserve and enhance the ecological flood storage value of the water environment, by reducing the impermeable area through enhanced new landscaping.

We will encourage each development to adopt low water using fittings appropriate to the end use
Furthermore, the development will minimise unregulated water consumption by specifying planting which does not reply on a permanent, mains fed irrigation system.

4.6. Materials

Sustainable construction practices employed at this site endeavour to meet the policy requirements of Wigan council Local Plan CP14 Waste, CP15 Minerals and CP17 Environmental Protection.

As a strategic site the development will provide a CEMP demonstrating how sustainable construction principles will be incorporated. This will address demolition, construction and long-term management and will incorporate the following objectives:

A. Sustainable sourcing of materials and their efficient and appropriate use, including their durability
B. Minimising waste and maximising recycling
C. Incorporating Sustainable Drainage Systems
D. Minimising water consumption
E. Minimising energy consumption and improving energy performance
F. Minimising net greenhouse gas emissions of the proposed development
G. Maximising low or zero carbon energy generation.
H. Minimising impacts on the natural environment and maximising green infrastructure

4.7. Pollution

The pollution category addresses the prevention and control of pollution and surface water run-off associated with the building's location and use. Issues in this section aim to reduce the building's impact on surrounding communities and environments arising from light pollution, noise, flooding and emissions to air, land, and water.

Air quality: Policy CP 17 - Environmental Protection requires that the development manages air quality.

The Air Quality and Dust Chapter in the Wigan Galleries Environmental Statement assesses the impact of the proposed development on local air quality. In particular it considers the potential effects of construction phase dust and operational phase road traffic emissions on air quality at existing receptor locations, as well as the potential exposure of future residents to existing air quality issues.

The northern portion of the proposed development site is located within the AQMA.

The undertaking of activities such as demolition, excavation, ground works, cutting, construction, concrete batching and storage of materials has the potential to result in fugitive dust emissions throughout the construction phase. A Construction Environmental Management Plan (CEMP) will be produced to control potential impacts during the construction phase.

Vehicles movements both on-site and on the local road network also have the potential to result in the re-suspension of dust from haul roads and highway surfaces. These have been assessed (see Table 5.25 of the Environmental Statement) and show a negligible increase in NO2 concentrations.

Changes to urban topography and traffic flows associated with the operation of the development may lead to variations in pollution concentrations at sensitive locations in the vicinity of the site. It has been demonstrated that the number of trips will be reduced (Mosodi Transport Assessment) as a result of the development, resulting in a reduction in NO_2 concentrations.

- Annual mean NO2 concentrations were predicted to be below the AQO of 40 μ g/m3 across the site. The maximum level at the boundary was 32.1 μ g/m3.

- Annual mean PM10 concentrations were predicted to be below the AQO of 40 μ g/m3 across the site. The maximum level at the boundary was 21.0 μ g/m3

- Annual mean PM2.5 concentrations were predicted to be below the AQLV of 25 μ g/m3 across the site. The maximum level at the boundary was 12.8 μ g/m3.

It has therefore been concluded that the effects of the development both during construction and in operation will be negligible and align with the requirements of policy CP16.

Flood risk and Sustainable Drainage Systems: Policy CP 16 Flooding requires that all new developments incorporate appropriate mitigation and/or management measures to achieve, where possible, a reduction in flood risk overall.

The Curtins Flood Risk Assessment (PL-TGW-CUR-00-XX-RP-C-5201) identifies that the site is not at significant risk of flooding from any known sources. The drainage consultant ensures that the development is suitable for the proposed location.

Drainage has been designed not to cause an increase in flooding to the wider area during an event with a return period of 1 in 100 years, including an allowance for climate change of a 40% increase in rainfall intensities.

Attenuation will be provided via blue roofs at podium level on the residential blocks, on roofs (where practicable) and below open space areas at ground level above the basement. Geocellular storage, permeable paving is proposed where blue roofs are not feasible. The Curtins Drainage & SuDS Strategy (PL-TGW-CUR-00-XX-RP-C-5202) proposes the control of discharge rates with flow control devices and a 50% betterment that of discharge rates that allows an increase in the volume of site storage.

Light pollution: Any external lighting around the Proposed Development will be suitably designed and specified, taking on board the ILP recommendations, so that light spillage will be minimised.

Noise pollution: To manage construction noise levels, noise mitigation measures will be implemented as set out within the Construction Environmental Management Plan (CEMP), examples are:

- Demolition and construction methods and plant used are to be carefully selected to minimise noise at source as far as reasonably practical.
- Electric and electro-hydraulic plant and equipment and non-percussive tools are to be used where practical.

- Plant is to be operated at low speeds and incorporate automatic low speed idling with engines switched off when not in use and noisy plant screened or enclosed to reduce noise emissions.
- Rotary bore piling is to be used in favour of driven piles.
- Construction traffic will be parked away from sensitive uses and implement controlled discharge of trucks and traffic management systems at the site entrances to control the traffic and ease congestion.
- Deliveries and removals will be planned out of peak hours as far as possible with construction works limited to between 07:00-19:00 on weekdays and 07:00-13:00 on Saturdays. No construction works are to take place on Sundays.

The most onerous source of construction vibration expected to be used on site is rotary bore piling. The predicted levels of vibration from this activity are sufficiently low that vibration is classed as having a low magnitude of impact and not significant.

Based on the predicted traffic flows, the total increase at the residential on Market Street from the construction traffic is predicted to be less than 5 dB. which is not considered to be significant.

The acoustic performances of the building facades are to be designed based on the existing external noise levels so that suitable internal noise levels are provided for occupants of the proposed development. Opening windows will be sited away from significant noise emitters with MVHR units used where opening windows are not recommended due to the high background noised levels. Some opening windows may be provided to prevent overheating during the hottest daytime periods. This will be reviewed during the detailed design. Within the detailed planning areas, the solid elements are to achieve a minimum of Rw 50 dB (Ctr -4) and glazing achieve a minimum of Rw 42 dB (Ctr -5). On quieter elevations, lower glazing performances may be satisfactory. However, this is to be reviewed as part of the detailed design.

Some residential balcony areas have been shown to be subject to high noise levels, however the residents also have access to shared garden areas where the noise levels are considered to be acceptable.

Various noise generating external building service plant are likely to be located on the roofs of the Project buildings. Consequently, each roof is to be surrounded by an acoustic barrier. Quiet units are to be selected as best as possible. All external air handling plant (air handling units, kitchen extracts, etc) are to be fitted with atmospheric side attenuators. Generators are to be installed in enclosures. Where possible, noise generating plant are to be directed away from the nearest noise sensitive receptors to the site. All plant equipment is to be sited on suitable anti-vibration mounts to limit structure-borne noise generation.

5. CONCLUSION

This Sustainability Statement demonstrates how the proposed design of the development will address the low carbon agenda. The scheme has been designed using the energy hierarchy outlined in Sections 3.1 - 3.4.

The use of passive and low carbon design has resulted in significant energy and carbon savings. The utilisation of renewable technologies and avoidance of onsite pollution will reduce the developments impact to climate change.

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