

Genr8 Kajima Regeneration Ltd (GKRL)

SMP Huyton

Energy & Sustainability Statement

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1.0 Introduction

This Energy & Sustainability Statement has been prepared to support the hybrid planning application for the proposed St Michael’s Place located in Knowsley, Merseyside.

This statement demonstrates how the proposed development will incorporate sustainable design principles to reduce the development’s energy consumption, carbon emissions and overall contribution to climate change in accordance with the local environmental and sustainability policy requirements, including those of Knowsley Council.

Project Description

The application is made in hybrid form and seeks planning permission for the following:

“Hybrid planning application comprising: (Part A) Detailed application for the erection of a new Council Headquarters, hotel, public realm, change of use of Cavendish Walk to flexible Class E and/or F1 uses, site-wide enabling and associated works following demolition of existing buildings. (Part B) Outline application for a mixed-use development comprising residential (Classes C2 and C3) uses, commercial and community uses (Classes E and F1), replacement car parking provision at Lathom Road, public realm and associated works, with provision for meanwhile uses”.



St Michael’s Place masterplan

1.1 Planning Policy

The following statutory requirements have been identified as key policy drivers and considered during the development of this statement. Further details regarding the specific policies relevant to energy and sustainability are provided in Appendix 1.

Policy Reference	
National	National Planning Policy Framework (December 2024)
Local	Knowsley Local Plan: Core Strategy (adopted January 2016)
	Climate Emergency Action Plan (November 2020)
	Knowsley Council Net Zero Delivery Plan (2022-2025)

The Knowsley Local Plan: Core Strategy was formally adopted by Knowsley Council in January 2016 and sets out the strategic framework for growth and development within Knowsley up to the year 2028. Strategic Objective 7 of the Core Strategy aims to manage environmental resources in Knowsley prudently by focusing on sustainable development, recycling and renewable technologies, minimising pollution, reducing carbon emissions and responding to the impacts of climate change.

The policies within the Knowsley Core Strategy aim to support the delivery of Strategic Objective 7 by encouraging a range of measures that contribute towards sustainable development and the decarbonisation of new development within the Borough. Policy CS22: Sustainable and Low Carbon Development reinforces Knowsley Council’s objectives and states that new development will be required to meet high standards of sustainable design and construction, and minimise carbon emissions, by adopting sustainable construction principles. This policy builds on Policy CS2: Development Principles which sets out five key design principles that new developments are required to support and considers topics including sustainable transport, resource efficiency, and environmental protection and biodiversity enhancement.

Other policies of relevance from the Core Strategy that have been considered in this statement include:

- Policy SD1 Sustainable Development
- Policy CS7 Transport Networks
- Policy CS8 Green Infrastructure
- Policy CS9 Principal Regeneration Area – North Huyton and Stockbridge Village
- Policy CS19 Design Quality and Accessibility in New Development
- Policy CS23 Renewable and Low Carbon Infrastructure
- Policy CS24 Managing Flood Risk
- Policy CS26 Waste Management

1.2 Knowsley Council Net Zero Action Plan

A principal factor of the local energy and sustainability policy requirements that apply to St Michael’s Place is Knowsley Council’s ambition for its estate and services to become net zero carbon by 2040, following the declaration of a Climate Emergency in January 2020. A primary element of achieving this target is to set out a pathway for the decarbonisation of Council-owned estates and assets as stated within the Climate Emergency Action Plan and Knowsley Council Net Zero Delivery Plan.

The actions and objectives within the Climate Emergency Action Plan and Knowsley Council Net Zero Delivery Plan aim to support the delivery of a net zero carbon Knowsley Council by outlining several short-term priorities that the council intends to complete, based on the following key themes:

1. Green spaces for carbon offsetting and climate resilience
2. Reducing carbon emissions from street lighting
3. Reducing carbon emissions from fleet vehicles, maintenance plant and equipment
4. Reducing carbon emissions from energy and water use in Council buildings
5. Reducing carbon emissions from waste from Council services
6. Reducing carbon emissions from staff travel on council business
7. Sustainable energy generation
8. Reducing carbon emissions through commissioning and procurement
9. Reducing carbon emissions through communication and staff behaviour change
10. Embedding carbon reduction and climate action across the Council's plans, policies and services

Objective 1.6 of the Knowsley Council Net Zero Delivery Plan is to design a low carbon Huyton Council Headquarters, citing that the key actions required to achieve this objective are to ensure that the design of the new Council Campus Building incorporates low carbon technologies and sustainable travel opportunities. This is further supported by the actions and objectives of the Climate Emergency Action Plan, which highlights several significant actions, including ensuring that carbon reduction is a key element in the design and construction of the proposed new Council Headquarters in Huyton Town Centre.

As such, and in accordance with the design principles of Policies CS2 and CS22 of the Knowsley Core Strategy, the following sustainable and low carbon design principles have been considered in the design of the proposed St Michael's Place:

- Energy and Carbon
- Sustainable Transport
- Climate Resilience
- Waste Management
- Construction Environmental Management
- Ecology and Biodiversity

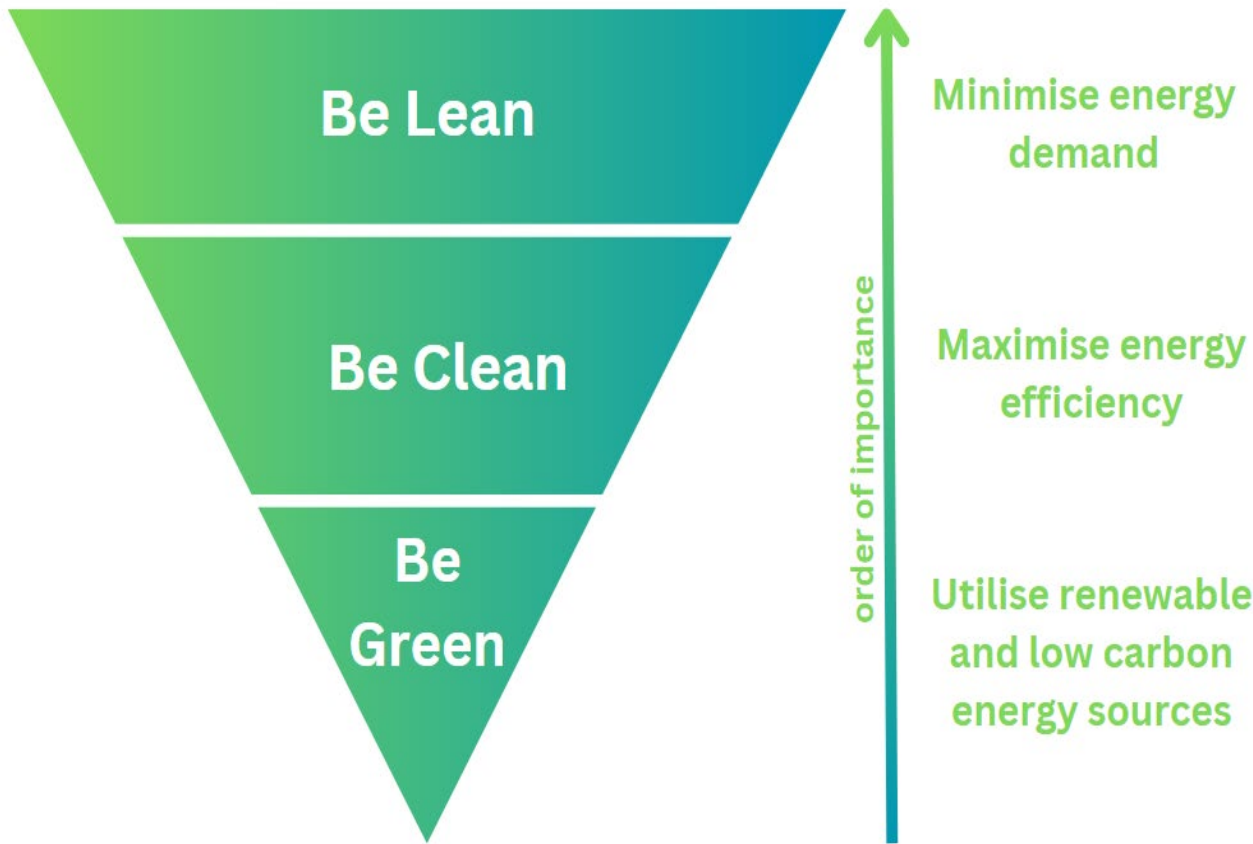
In line with the aspects listed, the following sections of this statement will demonstrate how St Michael's Place has embedded the Design Principles and Sustainable Construction Principles pertaining to Policies CS2 and CS22 of the Knowsley Core Strategy throughout its design and seeks to support the objectives of the Knowsley Council Net Zero Delivery Plan where relevant to the proposed Huyton Council Headquarters.

2.0 Energy and Carbon

In accordance with Policies CS2 and CS22 of the Knowsley Core Strategy, this section demonstrates how the proposed St Michael’s Place seeks to maximise reductions in carbon emissions by applying the energy hierarchy as a strategy to limit energy use and consider opportunities to incorporate low and zero carbon technologies.

For the purposes of this statement, the industry-recognised energy hierarchy has been applied using the following approach to reduce operational energy and greenhouse gas emissions:

- 1. Be lean: use less energy and manage demand during operation.
- 2. Be clean: supply energy efficiently to reduce demand and minimise waste.
- 3. Be green: maximise opportunities for utilising renewable energy by producing, storing and using renewable energy on-site.



The table below summarises the low carbon design principles that have been considered in the design of St Michael’s Place at both building and masterplan level, to apply the energy hierarchy. Each low carbon design principle has been evaluated in the following sections of this statement to determine its viability and to enable an informed decision as to whether it would be beneficial to the development. The findings within the statement are subject to review at the next stage of design.

Passive Design	High Efficiency Systems	Low and Zero Carbon Technologies
Building Orientation	Energy Efficient Lighting	District Heat Network
Building Fabric	Mechanical Ventilation Incorporating Heat Recovery	Wind
Air Permeability	Low Consumption Sanitary Fittings	Heat Pumps
Daylighting		Combined Heat and Power (CHP)
		Biomass
		Combined Heat and Power
		Photovoltaics and Battery Storage

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2.1 Passive Design

As part of the Sustainable Construction Principles set by Policy CS22 of the Knowsley Core Strategy, there is a requirement for new build developments to limit energy use by incorporating high standards of insulation, heat retention, natural ventilation and passive solar techniques. This can be achieved by incorporating passive design measures into the design of the proposed development, which considers the natural movement of heat, air and light to make building layout, fabric and form decisions that can reduce or remove the mechanical cooling, heating, ventilation and lighting demand for a building.

Incorporation of passive design measures into the design of St Michael's Place achieves the first tier of the energy hierarchy by reducing overall building energy consumption (be lean).

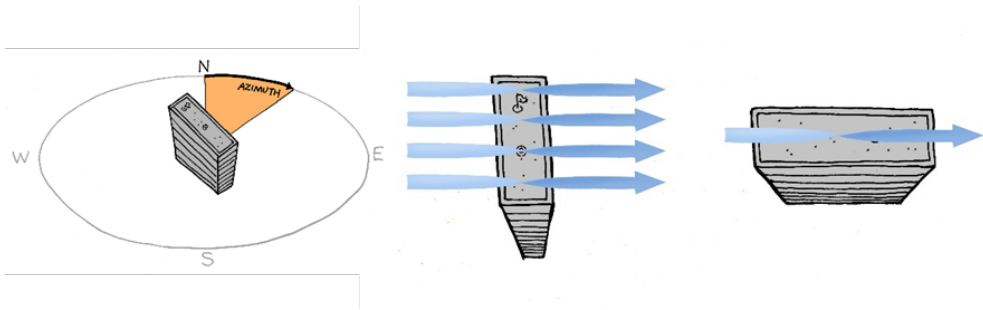
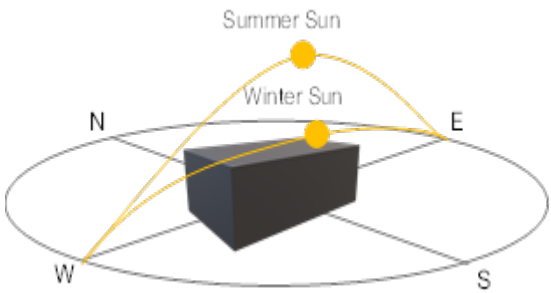
2.1.1 Building Orientation

Building and room orientation can have an impact on the energy consumption of a building. Effective orientation of a building reduces its heating and cooling demand by utilising the passive energy from the sun.

Depending on the needs of the building, rooms that are used more regularly and typically require more heating should be located on the south side of the building, where possible, to benefit from increased solar heat gains and minimise heating demand.

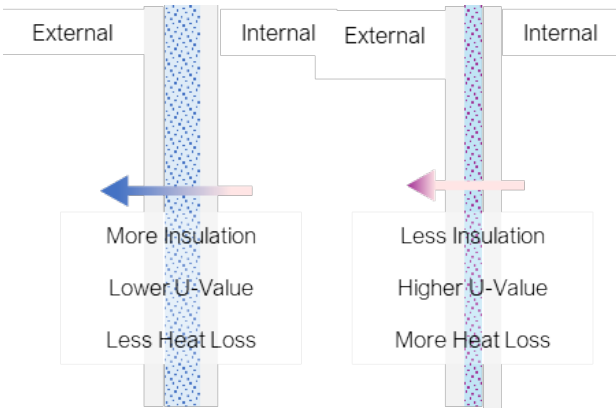
Buildings can also be oriented to maximise the passive energy benefits of cooling breezes in hot weather and shelter from undesirable winds in cold weather by utilising natural ventilation. Orienting a building so that its shorter axis aligns with the prevailing wind will generally provide the maximum natural ventilation benefits. By doing so, the building will benefit from increased passive ventilation during hot weather, reducing its cooling demand and lowering the exposure to cold winds, therefore reducing heating demand. Maximising the passive energy from natural ventilation requires an in-depth understanding of the local climate and direction of prevailing winds to determine which winds to take advantage of and which to avoid.

The buildings included in the proposed St Michael's Place will be oriented to maximise the benefits of passive design whilst making the most of the available GIFA on the development site, where possible.



2.1.2 Building Fabric

U-values quantify the rate of heat transfer through structure; the lower the U-value, the less heat is lost through the structure. Building fabric choices determine the U-value of the building element, for example, using more insulation will reduce heat loss through the element, therefore reducing the energy required to maintain thermal comfort. Part L of the Building Regulations sets limiting values for U-values for new and existing buildings, including dwellings and buildings other than dwellings, with the latest provided in the 2021 edition.



The buildings included in St Michael's Place have been designed using a fabric first approach to improve the performance of the building envelope and ensure that each building will comply with, and exceed the standards set by Part L 2021. Based on the below U-values achieved for the proposed development at the early, pre-planning stage, high standards of insulation and heat retention have been achieved in accordance with Policy CS2 of the Knowsley Core Strategy.

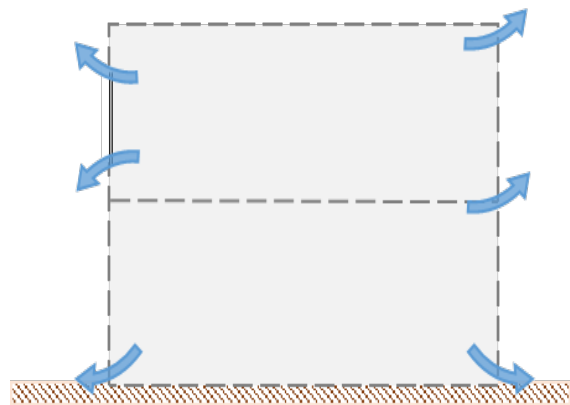
LIMITING U-VALUES IN BUILDINGS (OTHER THAN DWELLINGS) (W/m2K)				
	Minimum Part L (2021 Edition)	Notional Part L (2021 Edition)	Huyton HQ	Huyton Hotel
Roof	0.18 (0.16)	0.15	0.10	0.14
Wall	0.26	0.18	0.12	0.20
Floor	0.18	0.15	0.10	0.17
Windows	1.6	1.40	1.20	1.28

PASSIVE MEASURES CONSIDERED VIABLE
INCORPORATED INTO DESIGN WHERE POSSIBLE

2.1.3 Air Permeability

Building airtightness is the resistance to air leakage through the external building envelope. Reducing the air leakage in a building also improves the energy performance by reducing heating demand.

Air leakage in buildings generally occurs at junctions between building elements, the wall and window and door frames, electrical equipment, and other building penetrations. Part L of the building regulations sets limiting values for air permeability. The lower the air permeability, the more airtight the building.



AIRTIGHTNESS IN NEW DWELLINGS (m³/hm²) at 50 Pa				
	Minimum Part L (2021 Edition)	Notional Part L (2021 Edition)	Huyton HQ	Huyton Hotel
Air Permeability	8.0	5.0	3.0	3.0

2.1.4 Daylighting

Providing natural daylighting to a building minimises the use of artificial lighting and therefore reduces lighting loads and energy consumption. Natural daylighting also provides both physical and mental health and wellbeing benefits to the occupants of a building and has been linked to increased mood and productivity.

It is important to consider that there is a balance between maximising daylight but not providing so many glazed areas that the risk of summer overheating, increased glare and building fabric u-values and airtightness are compromised.

In accordance with Policy CS2 of the Knowsley Core Strategy, the design of the buildings included in the proposed St Michael's Place consider opportunities to maximise the natural daylight available and reduce overshadowing from surrounding buildings. This demonstrates the effective use of passive solar techniques to reduce the energy demand from artificial lighting.



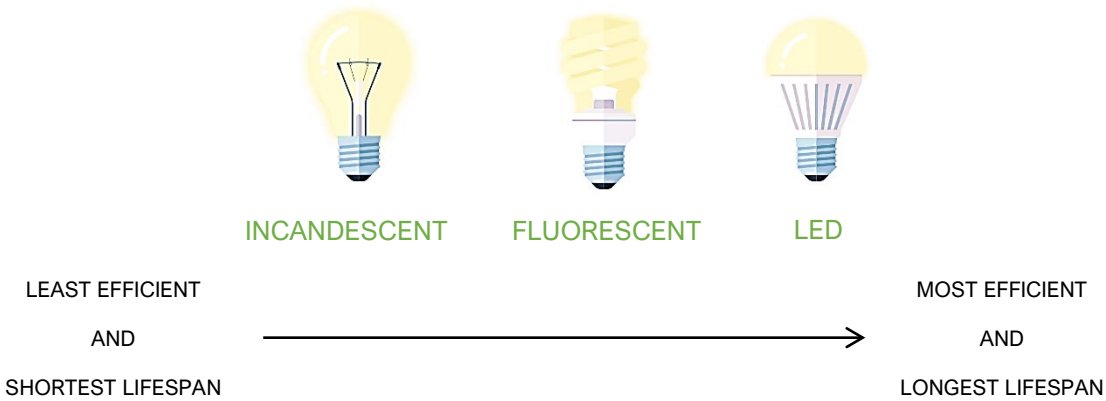
2.2 High Efficiency Systems

This section explores the integration of high-efficiency systems within the proposed development to further reduce energy consumption and minimise wasted resources, thereby demonstrating how tier two of the energy hierarchy has been applied (be clean). Both water and energy efficient systems have been considered in the design of Postal Street to maximise overall resource efficiency in line with the scope of this statement and in accordance with the Sustainable Construction Principles set by Policy CS22 of the Knowsley Core Strategy and Knowsley Council Net Zero Action Plan.

2.2.1 Energy Efficient Lighting

LED lighting is highly efficient, using approximately 75-80% less energy than incandescent bulbs, converting 80-90% of energy into useful light and lasting up to 25 times longer. When compared to other forms of lighting such as fluorescent lighting, LEDs have a higher lighting efficacy, provide full brightness instantly and last longer. Therefore, the use of LED lighting reduces the need to replace bulbs as frequently and minimises the energy wasted as heat. As such, LED lighting will be incorporated into the design of each building where possible.

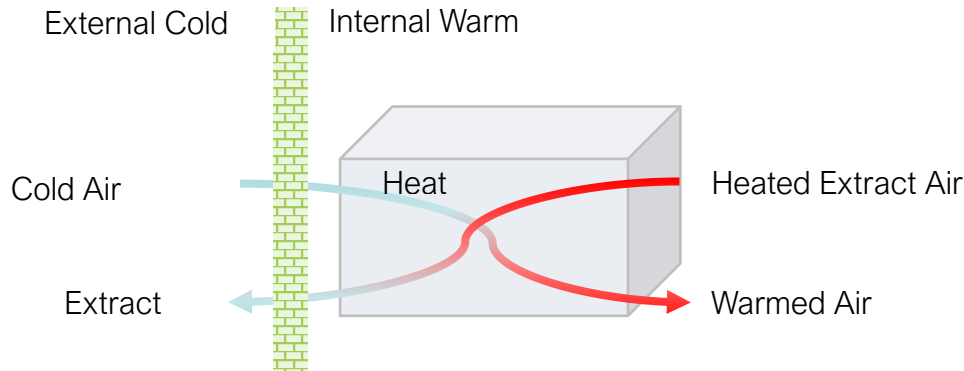
Automatic lighting controls such as passive infrared (PIR) controls that detect motion by measuring changes in infrared radiation emitted by warm bodies will be utilised in areas such as corridors to prevent unnecessary light usage during unoccupied periods, further reducing wasted energy.



2.2.2 Mechanical Ventilation Incorporating Heat Recovery

Heat recovery systems utilise heat extracted from inside heated spaces to warm the incoming external air. This minimises the space heating demand and makes more efficient use of the energy consumed to heat internal spaces, reducing operational energy and its associated carbon impact.

All mechanical supply and extract ventilation units within the proposed hotel will be designed to include heat recovery.



HIGH EFFICIENCY SYSTEMS CONSIDERED VIABLE

INCORPORATED INTO SCHEME WHERE POSSIBLE

2.2.3 Low Water Consuming Sanitary Fittings

The UK's water resources are under growing pressure due to rising consumption, with the average person estimated to use approximately 140 litres per day. This, combined with more frequent and intense weather events such as droughts and less predictable rainfall due to climate change, is leading to water shortages and water scarcity becoming an increasingly tangible threat.

The production of potable water itself demands significant quantities of energy attributable to its processing and distribution, with the embodied carbon associated with potable water equating to 0.34 grams of CO₂e per litre. Reducing water consumption in the UK is therefore crucial to protecting water security and decreasing operational carbon emissions associated with its use.

It is important to reduce water consumption and waste where possible through flow control and sanitaryware specification with optimised flow rates. Efficient sanitary fittings such as low-flow showers and faucet aerators can provide significant water savings and will be incorporated into the development to conserve water by reducing demand, and associated operational costs, whilst maintaining a hygienic and high-quality experience for occupants in line with the Sustainable Construction Principles set by Policy CS22 of the Knowsley Core Strategy and the key actions within the Knowsley Council Net Zero Action Plan.



2.3 Low and Zero Carbon Technologies

In line with Policies CS2, CS22 and CS23, the following low and zero carbon technologies have been considered for use within St Michael's Place. The following table assesses the viability of each technology and demonstrates how opportunities to utilise renewable and low carbon energy sources have been maximised, consistent with tier three of the energy hierarchy (be green).

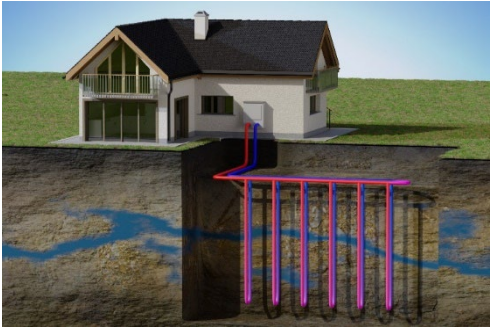
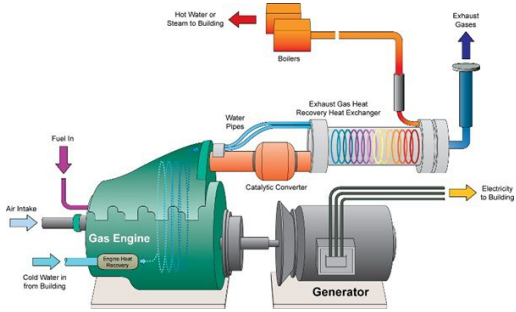
Of the technologies considered; the most suitable for incorporation into the proposed development are roof mounted photovoltaics and air source heat pumps that will be integrated into the design across the site, including the proposed Hotel and Huyton Council Headquarters

Size of the arrays is subject to planning, future design development and Part L calculations.

The other renewable energy technologies investigated are not considered to be viable options due to the development's location, space limitations, fiscal restraints, and pollutant emissions as demonstrated in the table below.

Low and Zero Carbon Technology Viability Assessment.

Low and Zero Carbon Technology	Description	Discussion	Viability
District Heat Network 	District heat networks use heat energy generated from a centralised energy centre and redistributes it to buildings via a network of pipes, removing the need for individual boilers or heaters in each of the connected buildings. Typical centralised heat energy sources include power stations, energy from waste plant, geothermal, or CHP. Renewable sources such as heat pumps, solar thermal and solar PV are now also commonplace in 4th & 5th generation District Heating Systems.	As the site of the development is not located in an area identified as a 'Priority Zone' for decentralised energy networks in accordance with Policy CS22, it is not a requirement to make provision for connection to an existing or planned decentralised energy network; or be designed to enable future connectivity at a later date. Furthermore, there are no existing or planned heat/energy networks within the vicinity (~500m) of the proposed development that would provide a viable connection point, based on a review of the Department for Energy Security and Net Zero's Heat Network Planning Database. In addition, as there are currently no district heat networks that are operational, awaiting construction, or pending planning permission within 500m of the site, it is considered that designing to enable a future connection would not be necessary as a future connection is not guaranteed, deeming this requirement non-viable anyway. If a development is over 500m away from a heat network's energy centre, then the heat losses associated with transport and distribution sharply decrease the efficiency of district heating compared to alternative on-site technologies. It is therefore considered that alternative renewable and low carbon technologies would be more feasible and effective at minimising operational carbon emissions on a building-by-building basis.	Non-Viable
Wind 	Wind turbines harness the kinetic energy of the wind and convert it into electricity. The rotation of propeller-like blades around a rotor rotates the drive shaft, which then turns the generator, producing renewable electricity. In general, wind turbines should be in areas where the mean annual wind speed is greater than 4.5 m/s to consistently meet the cut-in speed of a small-scale wind turbine. Other factors that affect wind turbine feasibility include site suitability, regulatory requirements and stakeholder engagement.	Whilst the electricity generated by wind turbines could be utilised within the building to reduce the consumption of grid electricity, the estimated wind speeds do not meet the minimum annual wind speed required to consistently reach the cut-in speed for anything larger than small-scale turbines. The output of a small-scale turbine would not significantly contribute to the energy demand of the proposed development. In addition, due to the urban location of the proposed development, it is considered that the impacts associated with larger wind turbines including noise, shadow flicker, vibrations, topple distance, air traffic safety, and visual dominance would be unacceptable therefore, it is considered non-viable. Wind Speeds estimates from NOABL data - At 10m above ground level 5.1 m/s - At 25m above ground level 5.9 m/s - At 45m above ground level 6.4 m/s Wind speed data for Huyton Town Centre, Knowsley (53.41076471, -2.83971745) (Source: NOABL wind map)	Non-Viable
Air Source Heat Pumps 	Air source heat pumps extract thermal energy from the air and upgrade it to a higher, more useful temperature that can be used in heat pump boilers, underfloor heating or fan coil systems. The air source heat pump system consists of a compressor and a carefully matched evaporator coil and heat exchanger. The heat transfer medium within heat pumps is a refrigerant which circulates within the system. Typical refrigerants used include R410a, R32, R407C, which have a boiling point as low as minus 40°C and evaporate into gas when absorbing heat from the outside air. This gas is then compressed, increasing its thermal energy, and raising its temperature to around 75°C. This is then used to heat internal spaces and/or generate lower-temperature hot water.	An ASHP system can provide hot water, heating and comfort cooling with a high efficiency and low capital cost and does not rely on the use of fossil fuels, minimising air pollution. As a result, installing air source heat pumps to provide heating and/or hot water is deemed viable and will be implemented for some areas of the proposed development. For example, it is proposed that ASHPs be utilised to meet the domestic hot water demand of the hotel.	Viable

Ground Source Heat Pump 	Ground source heat pumps (GSHPs) can provide space heating and hot water by utilising a low-grade heat resource (10 to 25°C) and extracting geothermal energy that is stored in shallow subsurface depths of up to 500m. Heat can be extracted from soil, rocks, aquifers and flooded mines. This is achieved by circulating water mixed with antifreeze through a collector pipework system. The temperature of the earth at one meter below ground level remains stable throughout the year, at 9 - 12°C, depending on geographical location and soil type. This means that there is a consistent source of heat during cold periods that is at a higher temperature than the outside air and therefore requires less electricity to upgrade it to useful heat when compared to ASHP. For this reason, GSHPs are more efficient than ASHPs.	Comparative to ASHPs; there are significantly higher capital costs associated with GSHPs due to the extensive groundwork required to lay the underground pipes. Due to its central location in an urban area, the site of the proposed development is also restricted in terms of available space that can be used to locate the vertical boreholes or horizontal arrays. For these reasons, an ASHP is deemed preferable over a GSHP and therefore a GSHP is not considered further.	Non-Viable
Biomass 	Biomass is also known as biofuel or bioenergy; it is obtained from organic matter, either directly from plants or indirectly from industrial, commercial, domestic, or agricultural products such as logs, wood chips, pellets, etc The use of biomass is classed as a 'carbon-neutral' process because the carbon dioxide released during the generation of electricity is balanced by that absorbed by plants during their growth. However, this is only true when the fuels are procured responsibly and there are additional concerns over emissions of particulates and nitrogen oxides which are detrimental to human health.	Biomass boilers could be utilised to heat aspects of the proposed development, however, although biomass can be deemed carbon neutral, there are other emissions associated with burning biomass such as particulate matter which contribute significantly to air pollution and are detrimental to human health. The negative impacts of these pollutants are greatest in areas where atmospheric pollutant concentrations are already high due to emissions from other sources, for example in large cities or in areas close to major roads. Due to the urban location of the proposed development, it is considered that a biomass boiler would have a negative impact on local air quality, contradicting the aims of Development Principle 4 of Policy CS2 of the Knowsley Core Strategy and limiting the carbon emissions reductions possible. As such, an ASHP is deemed preferable over biomass heating and biomass heating is not considered further.	Non-Viable
Combined Heat and Power 	A CHP uses a gas or oil-fired engine to drive a generator which produces electricity. Heat from the engine block, oil cooler and exhaust are absorbed into a coolant which is then used as a heat source within the building, thereby simultaneously generating heat and electricity from one source of combustion. CHP or 'cogeneration' is not considered a "sustainable energy", but it is a highly energy efficient system, operating at over 80% efficiency, which makes use of waste heat from the production of electricity. The use of a CHP can reduce carbon emissions by up to 30% when compared to the separate means of conventional heat and electricity generation via a boiler and power station.	A CHP system in the proposed development would require the combustion of fossil fuels, which would contribute to local air pollution and limit the carbon emissions reductions possible when compared to other renewable and decentralised technologies as per Policy CS22: Sustainable Construction Principles. As such, and in accordance with the energy hierarchy, an ASHP is more effective at minimising carbon emissions over a CHP system which is therefore not considered further.	Non-Viable

Solar Photovoltaics 	Photovoltaics (PV) convert solar energy into electricity, which can then be used to power ordinary electrical equipment such as household appliances, computers, and lighting. PVs output in DC therefore an inverter is needed to deliver power to the building or export it to the grid which requires AC. PV systems can be incorporated in various ways: on sloped roofs, on flat roofs, in facades, atria, and shading devices. Modules can be mounted using frames or incorporated into the building fabric; for example, PV roof tiles are available which can be fitted in place of standard tiles.	Solar PV can be easily integrated and used alongside other LZC technologies. A PV installation would require the installation of fixed building services to make the best use of this technology. On-site generation of renewable electricity contributes to reducing operational carbon emissions in accordance with Policies CS2, CS22 and CS23 of the Knowsley Core Strategy. One challenge for the integration of PV is that a significant amount of the roof area across the buildings may be required to house building services plant and other equipment or be allocated for biodiversity enhancement; therefore, there may be substantially less available roof space on which solar panels could be installed. In accordance with the Sustainable Construction Principles, the opportunities for on-site electricity generation from solar technologies can still be prioritised and maximised by installing panels on the remaining roof area. As a result, PV is seen as being viable on a building-by-building basis.	Viable
Battery Storage 	Battery storage systems allow surplus electricity generated on-site from a PV (or another renewable) system to be stored and released back into the building's electrical distribution network when needed – this is often referred to as 'peak shaving' and reduces the reliance on grid electricity. Electricity can also be exported back to the grid, depending on the electrical wiring arrangement, which contributes to reducing the carbon intensity of grid electricity and enhances grid stability at times of high demand.	As there is likely to be sufficient available space to accommodate a large array of solar PV across the roofs of the buildings included in the proposed development, battery storage is a viable technology. Battery storage can be utilised to store surplus electricity generated by solar PV once the electricity demand of the building(s) has been met. This can be used at times when the amount of electricity generated by the PV is not sufficient to meet the peak load demand of the building to reduce reliance on grid electricity, reducing operational energy costs and improving grid stability by adopting a 'peak shaving' energy strategy. At periods where there may be surplus electricity generated, and the batteries are fully charged; this can be exported back to the grid and contribute to larger decentralised energy schemes to address climate change and enable other buildings to use renewable electricity. Surplus electricity could also be redirected to electric vehicle chargers when the building peak load is met and exceeded, to maximise the benefits of solar PV. Alternatively, whilst technologically feasible, there are additional practical considerations that may become a barrier to the viability of including a battery storage system including fire risk, available space, and demand. Further consideration of the factors discussed is required to determine the viability of a battery storage system as the design of the St Michael's Place masterplan progresses.	Feasible
Solar Thermal Water Heating 	Solar thermal utilises radiant heat from the sun to provide domestic hot water. It works by using thermal energy to heat an energy-absorbing media comprised of water or a water/glycol mixture, which is pumped through a solar absorbing panel usually located on the roof. The heated media is then pumped through a heat exchanger, typically to heat hot water within a storage cylinder.	The hot water generated by solar collectors could be utilised for domestic usage within the development. However, due to the predicted high demand for hot water from the proposed development, most notably the proposed hotel, and limited available roof space for panels, it is considered that solar thermal would not be a viable option to supply sufficient volumes of hot water alone and that solar PV would be a more effective way to reduce operational carbon emissions. Solar PV also has longer lifespans and more versatility in the uses of the electricity generated and is therefore deemed preferable and solar thermal is not considered further.	Non-Viable

2.4 Part L Results

Detailed energy modelling has been undertaken using the methodology from Volume 2 of the current 2021 Part L Building Regulations for the non-residential buildings within the masterplan development. The results of this analysis confirm compliance with Part L of the Building Regulations at the early design stage and demonstrate the effective implementation of the energy hierarchy to minimise carbon emissions in accordance with Principle 2 of Policy CS2.

The carbon emissions for the non-residential elements of the development, including the Council HQ and Hotel were calculated using IES software as shown in the table below.

New Non-Dwelling Part L results			
Hotel	Target CO ₂ Emission Rate (TER) (kgCO ₂ /m ²)	Building CO ₂ Emission Rate (BER) (kgCO ₂ /m ²)	% Improvement
	13.98	12.18	12.88%
	Target Primary Energy Rate (TPER) (kWh/m ² /yr)	Building Primary Energy Rate (BPER) (kWh/m ² /yr)	% Improvement
	151.95	132.28	12.94%
Council HQ	Target CO ₂ Emission Rate (TER) (kgCO ₂ /m ²)	Building CO ₂ Emission Rate (BER) (kgCO ₂ /m ²)	% Improvement
	3.52	3.12	11.4%
	Target Primary Energy Rate (TPER) (kWh/m ² /yr)	Building Primary Energy Rate (BPER) (kWh/m ² /yr)	% Improvement
	38.26	33.87	11.5%

*Preliminary SAP results based on the design information available at the time.

2.5 Energy Strategy – Summary

St Michael's Place buildings exceed the minimum standards for carbon emissions and primary energy consumption set by the 2021 Part L by 12.8% and 12.94%, for the Hilton Hotel and by 11.5% and 11.4% for the Council HQ building. This has been achieved by applying the principles of the energy hierarchy in accordance with Policy CS2 and opting for an all-electric energy strategy to avoid the use of fossil fuels.

Be Lean

- Optimised building orientation to maximise the benefits of passive energy from the sun and natural ventilation.
- Enhanced U-values to improve fabric efficiency and exceed Part L requirements.
- Increased air tightness
- Optimised daylighting to maximise the use of natural light through the provision of glazing.

Be Clean

- Energy efficient LED lighting

- Improved and automatic lighting controls such as passive infrared (PIR) controls
- Mechanical ventilation incorporating heat recovery.
- Low consumption sanitary fittings including low-flow showers and faucet aerators to conserve water.

Be Green

- Utilising air source heat pumps (ASHP) to provide heating and/or hot water where practicable.
- Maximising solar PV
- Considering the use of a battery storage system where viable

2.6 Energy Approach to Outline Plots

Outline Proposals include for:

Housing

Up to 420 no. units (Use Class C2/C3) on plots 2a, 2b, 3, 5 and 6.

As a minimum, it is expected that the residential units will meet or exceed Building Regulations, Approved Document L (England): Conservation of Fuel and Power, Volume 1, Dwellings 2021. Consideration can also be given to the use of the Future Homes Standard, to be published in the autumn of 2025. In summary the Future Homes Standard proposes that new buildings set the performance requirements at a level which ensures new homes and nondomestic buildings have high fabric standards, use low-carbon heating and are 'zero-carbon ready' (meaning no further work will be needed for them to have zero carbon emissions once the electricity grid has fully decarbonised).

A specific energy strategy should be produced for each of the planned residential plots to set out the proposed energy efficient approaches and how the design will meet building regulation requirements.

Community and Commercial Uses

At present envisaged to allow for circa. 4,000sqm of office accommodation with circa. 1,600sqm of retail, food and drink, community and other Class E and F1 uses at active ground floor levels.

As a minimum, it is expected that the commercial units will meet or exceed Building Regulations, Approved Document L (England): Conservation of Fuel and Power, Volume 2, Buildings other than Dwellings 2021. Consideration can also be given to the use of BREEAM New Construction (latest version). In summary, BREEAM (Being used to certify the Council HQ building) is a leading sustainability assessment methodology used to evaluate the environmental performance of buildings and infrastructure. BREEAM is widely used in the UK and internationally to assess and certify the sustainability of construction projects, ensuring they meet high standards in design, construction, and operation.

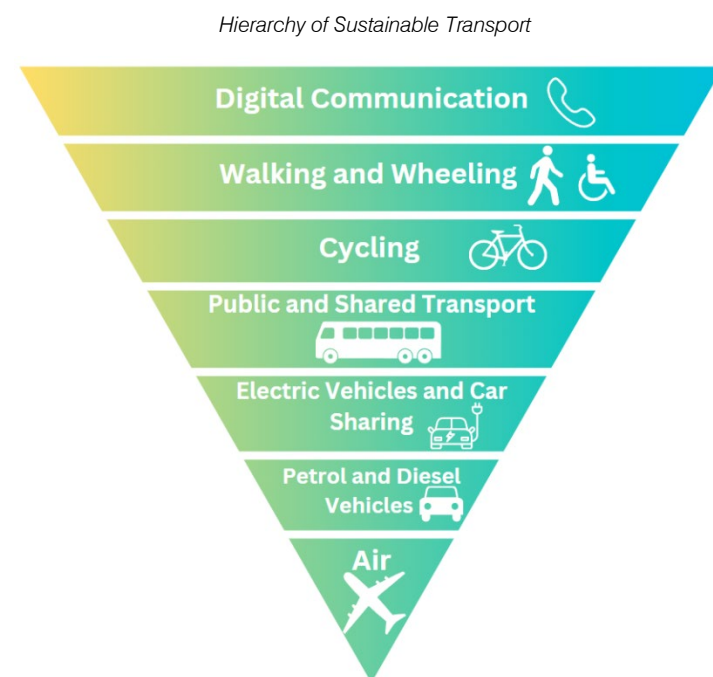
A specific energy strategy should be produced for the planned commercial plots to set out the proposed energy efficient approaches and how the design will meet building regulation requirements.

3.0 Sustainable Transport

Transportation is the UK's largest emitting sector, attributable to 29% of total domestic greenhouse gas emissions in 2023. Cars specifically, contributed to 54% of the total domestic transport emissions, equating to 60.2 MtCO₂e and is therefore an area targeted for decarbonisation.

The development will adhere to the Hierarchy of Sustainable Transport where possible as part of its approach to mitigate the potential negative impacts of traffic growth and road traffic on highway safety, air quality, noise and health in accordance with Principle 3 of Policy CS2. For example, whilst buses and trains use more fuel than cars and therefore have higher emissions per unit of distance, as they can transport more people, the per capita emissions are lower than those associated with private car users. There are no emissions associated with walking and cycling.

Due to its central location, there is a high degree of access to public transport, bus and rail. Further information on the current provision of public transport and the proposed sustainable transportation measures is provided in the Framework Sustainable Travel Plan prepared by Astute Transport and submitted as part of this planning application.



3.1 Electric Vehicle Charging

KMBC's adopted parking standards for new development are contained within the Ensuring Choice of Travel Supplementary Planning Document (SPD) dated 2010, and the 'New Residential Development' SPD (September 2018). These policy standards will be the starting point for the consideration of appropriate levels of disabled, motorcycle, cycle and electric vehicle car parking (EVCP) provision.

- Electric vehicle charge points provide the facility for building users to charge their private electric or plug-in hybrid vehicles, which supports the roll out of infrastructure for low carbon emission vehicles in line with Policy CS7.
- The provision of EV charge points would encourage building users to consider alternative low carbon fuelled vehicles, promoting low carbon emission transport, and minimising the impact of the development on local air quality.

3.2 Public Transport

Proposed measures include:

- Seek to negotiate discounted / free travel passes from local public transport operators.
- Provision of public transport information and timetables for site users, including displaying on noticeboards as appropriate.
- Connectivity through public realm and provision of wayfinding to key public transport nodes including the train and bus stations.
- Potential interest free loan scheme for the purchase of public transport passes (rail and bus), to support Council staff in accessing the site by these modes.

3.3 Cycling and Walking

Proposed measures include:

- Cycle parking to be provided to meet demands of site users and with reference to the Council's parking standards.
- Provision of high-quality public realm throughout the site to encourage and accommodate pedestrian movements.
- Changing facilities to be provided for hotel and office uses, including the Council HQ.
- Provision of maps showing cycle/ walking routes and facilities, including displaying on noticeboards as appropriate.
- Arrange organised cycle rides and training for site users, including promotion of national initiatives such as Cycle to Work Week.
- Potential Cycle to Work scheme to support the purchase of bicycles and equipment amongst Council staff.

3.4 Car Sharing

Proposed measures include:

- Car share promotion, including events with opportunities for finding a match amongst other site users. Utilise car sharing platforms such as Liftshare to further help car sharing partners communicate with each other.
- Investigate opportunities to provide allocated parking to car sharers to encourage uptake of this mode.
- Potential introduction of Car Club/ pool vehicles to support the development proposals.

3.5 General Measures

Measures include:

- Appointment of Travel Plan Co-ordinator to take on responsibility for each Travel Plan.
- Marketing and communication strategy to raise awareness of travel planning initiatives.
- Travel surveys to establish baseline mode share and ongoing monitoring of the progress of the Travel Plan against targets.
- Liaison with the Local Highway Authority and the Travel Plan Officer.

4.0 Climate Resilience

It is widely understood that human-induced greenhouse gas emissions (GHGs) are the primary driver of global warming and the leading cause of climate change. The impacts of climate change on people and ecosystems are becoming more critical as more frequent and severe weather and climate events are observed worldwide, including floods, droughts, storms, extreme heat and wildfires, which present a fundamental threat to all aspects of human and natural systems. A rapid reduction in global GHG emissions and a transition towards more sustainable and climate-resilient development is essential to mitigating the worst effects of climate change and protecting the longevity of the UK building stock.

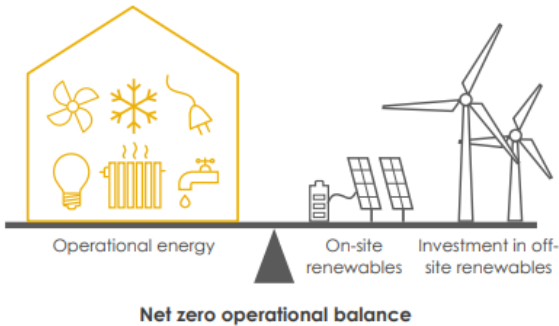
4.1 Operational Carbon

St Michael's Place has been designed to maximise its environmental performance in a cost-effective way and minimise its contribution to all aspects of climate change in accordance with the Policy CS22 of the Knowsley Core Strategy and the Knowsley Council Net Zero Delivery Plan. Operational carbon emissions have been reduced as far as practicably feasible, exceeding the requirements set by Part L of the Building Regulations (2021) as demonstrated below.

	Target CO ₂ Emission Rate (TER) (kgCO ₂ /m ²)	Building CO ₂ Emission Rate (BER) (kgCO ₂ /m ²)	% Improvement
Council HQ	3.52	3.12	11.40
Hotel	13.98	12.18	12.88

This has been achieved by applying the principles of the energy hierarchy in accordance and opting for an all-electric energy strategy to avoid the use of fossil fuels as described in the previous sections.

As the UK grid continues to decarbonise towards the government's 'Clean Power by 2030' target – five years from now, the operational carbon emissions from the development will continue to decrease towards net zero based on its all-electric energy strategy. It is considered that the inclusion of photovoltaics and air source heat pumps into the design of the development, along with exploring opportunities to purchase electricity from a renewable energy supplier, will contribute towards mitigating residual operational carbon emissions in the interim. This strategy aligns with the net zero operational carbon balance set out within the LETI Climate Emergency Design Guide, illustrated below.



LETI Net Zero Operational Carbon Balance

4.2 Embodied Carbon

Further to reducing operational carbon emissions as far as practicably feasible, the design of the development has also sought to consider and reduce the embodied carbon associated with its construction and building materials. This will contribute to minimising the building's whole-life carbon impacts which account for both operational and embodied carbon in accordance with Policy CS22 and the requirement to use sustainable materials where possible.

Consideration of a development's life cycle embodied carbon requires an understanding the estimated 'upfront', 'in-use' and 'end-of-life' emissions. These consider separately the building's construction and production of materials; in-use maintenance, repair or replacement of materials; and the eventual deconstruction and disposal of building materials.

St Michael's Place will be inherently low embodied carbon compared to a typical new-build alternative due to the decision to refurbish the existing retail store situated on Cavendish Walk and repurpose it into flexible space for the new Huyton Library and additional Council-related services. The building will retain the existing substructure and all components of the superstructure; except for glazing which will be completely replaced. The main impacts on embodied carbon will be from the new internal partitioning, finishes and the newly installed building services. However, the impact can be minimised by ensuring responsible resourcing and prioritising the use of local materials to reduce transport emissions; and durable materials to lessen their repair and replacement.

Embodied carbon can be decreased further by designing a building to utilise re-used and re-cycled materials and ensuring it can be disassembled at its end of life in accordance with circular economy principles.

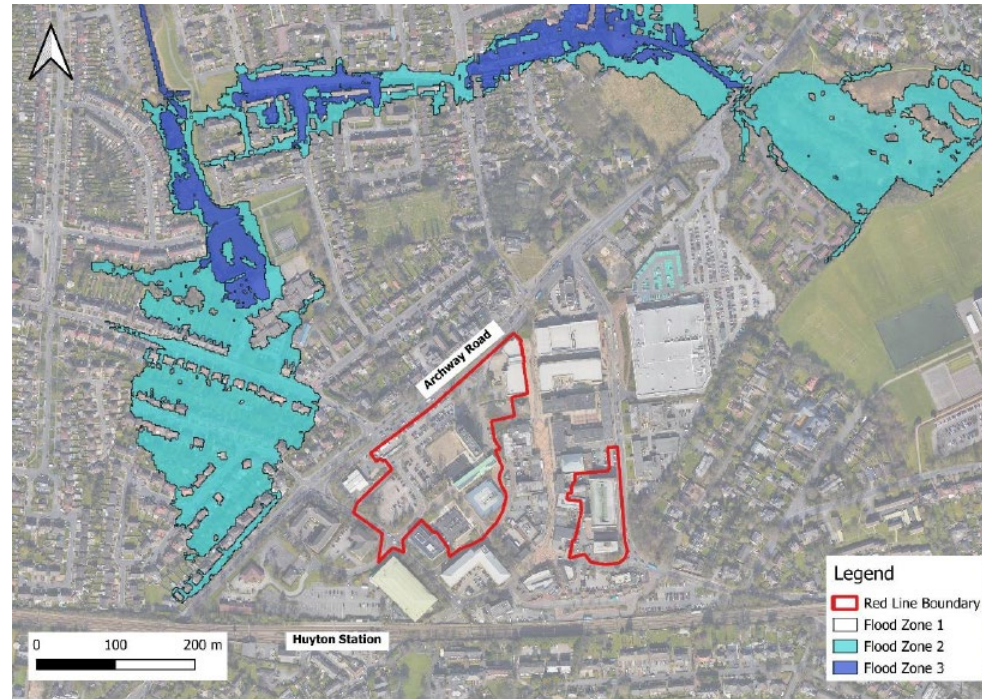
The report entitled 'Sustainability Whole Life Carbon' produced by Hoare Lea, 11th September 2025 is a detailed embodied carbon analysis of the Huyton Council HQ and concludes that 'The proposed scheme as assessed at this stage has an Upfront Carbon (A1-A5) of 700kgCO₂e/m², meeting the UKNZCBS (UK Net Zero Carbon Building Standard) baseline target of 700kgCO₂e/m². This has been achieved through an efficient form factor and structural grid, and use of brick masonry, precast concrete panel, and aluminium rainscreen cladding in the façade. The results for B1-B5 and C1-C4 total 341 kgCO₂e/m². In total, the embodied carbon is 1041 kgCO₂e/m² which is below the RIBA Business as usual case target of 1200 kgCO₂e/m²'. Several design options were appraised to consider the embodied carbon and set out in Appendix B of the report.

4.3 Water Management and Flood Risk Mitigation

The proposed development seeks to promote the sustainable use of water and improve weather resilience by increasing water efficiency; reducing surface water run-off from the site; and mitigating future flood risk due to climate change.

4.3.1 Flood Risk Mitigation

A Flood Risk Assessment (FRA) has been carried out by Buro Happold 'St Michael's Place Flood Risk assessment' to support the hybrid planning application. The assessment has been prepared in accordance with the National Planning Policy Framework (NPPF) (February 2025) and the KC Strategic Flood Risk Assessment (SFRA) (April 2023), Flood Risk and Management Strategies (October 2017), Local Plan Core Strategy (January 2016) and the Liverpool City Region Combined Authority (LCRCA) SFRA (November 2023). The FRA confirms that the site is in Flood Zone 1 defined as having a low risk of fluvial/tidal flooding, with a probability of flooding of less than 1 in 1,000 years (0.1%) in any given year, from rivers and the sea. It is concluded that the scheme will have no impact in terms of flood risk on the surrounding area.



Environment Agency Flood Zone map with the site boundary marked in red.

- Permeable Paving
- Rain Gardens
- Green roof

These systems will be developed further as the design progresses,

4.3.2 SuDS Integration

Sustainable Urban Drainage Systems (SuDS) have been incorporated into the design to improve weather resilience by reducing surface water run-off from the site; and mitigating future flood risk due to climate change.

Sustainable drainage systems (SuDS) are drainage solutions that provide an alternative to the direct channelling of surface water through networks of pipes and sewers to nearby watercourses. By mimicking natural drainage regimes, SuDS aim to reduce surface water flooding, improve water quality and enhance the amenity and biodiversity value of the environment. SuDS achieve this by lowering flow rates, increasing water storage capacity and reducing the transport of pollution to the water environment.

Buro Happold has developed a SuDS strategy to manage the effects of surface water runoff from the site set out in the following document: Drainage Design Philosophy & Flood Risk Assessment, 27th January 2022.

The overarching intention of the surface water drainage strategy is to incorporate SuDS into the fabric of the building and external landscaping, giving priority to SuDS features that provide multi-functional benefits by providing biodiversity and amenity value alongside improving water quality and managing water quantity in accordance with Policy CS24. SuDS features that provide elements of rainwater re-use have been considered with the aim to reduce demand on the wider public supply network.

The implementation of the listed SuDS features will support the external drainage system and ensure the site has sufficient drainage to reduce the burden of runoff on the local sewer system and mitigate future risk of pollution and flooding because of climate change.

The new surface water drainage systems will be designed to accommodate 1:1, 1:30 and 1:100-year return period rainfall storm event including a 30% allowance for climate change. No flood water will be allowed to discharge directly off the development site.

Various Sustainable Urban drainage bespoke systems have been developed at the early design stage by Buro Happold including:

- Attenuation tanks
- Swales

5.0 Waste Management

Policies CS22 and CS26 require that new developments promote sustainable waste practices to minimise waste, encourage the use of reclaimed and recycled materials and to facilitate the collection and recycling of waste.

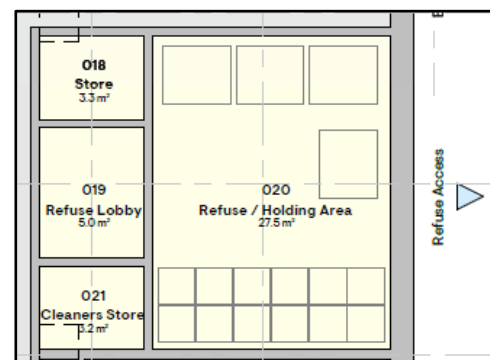
5.1 Operational Waste Management Strategy

Waste Management has been considered in the design of the various buildings. Refuse stores have been provided to manage operational waste. All stores are located on the ground floor, with easy outdoor access, to facilitate collection by waste management contractors. As the operational waste management strategies are developed waste streams will be identified and bins provided to store each stream before collection.

Typical operational waste streams include:

- Cardboard
- Plastics
- Food/Organic waste
- Mixed general waste

Operational strategies will be further developed, aligned with operator requirements to finalise waste stream types and specific bins.



Example Refuse Store - Hotel

6.0 Construction Environmental Management

Large construction sites can have adverse impacts on the local environment that primarily arise from noise, pollution risks, site waste, and transport disturbances. Additionally, increased energy and water consumption are major issues and given the scale of the development, it is considered that some of these issues will require mitigation. The proposed development will seek to manage its construction phase sustainably, emphasising responsible resource use, proper storage of fuels and materials, effective waste management, pollution reduction, and maintaining good relations with neighbours in accordance with Policy CS2.

As per the EIA Screening Report (Turley, July 2025) within Appendix 1: Schedule of Mitigation 'a CEMP will be prepared by the appointed contractor(s) in advance of the construction stage works and submitted to KMBC for approval. The document will provide details and principles to avoid and effectively manage potential adverse effects upon the environment'. Appropriate Government and Industry Standards and proposed measures are listed within the EIA Report setting out the contents of the CEMP to be produced.

6.1 Site Waste Management

A site waste management plan will be developed and implemented in line with Policy CS26 as part of the Construction Environmental Management Plan (CEMP) to ensure appropriate waste segregation, recycling, and disposal in accordance with relevant legislation and best practice guidance. Most of the construction waste will be managed through specialist contractors and is not anticipated to cause significant additional pressure on local municipal waste facilities and diversion from landfill will be a key driver.

It is expected that the proposed residential, hotel, office and retail uses will generate waste during operation. In line with a Waste Management Strategy, appropriate waste storage facilities will be provided, and residential refuse collection will be in accordance with Knowsley Council requirements. The hotel, office and retail units will likely be serviced by a contractor as deemed appropriate by future occupiers. Such measures are likely to be managed by an approved Waste Management Strategy, in line with Controlled Waste (England and Wales) Regulations, 2012 and local guidance.

7.0 Biodiversity

Policies CS2 and CS8 encourage new developments to protect, maintain and where possible, enhance biodiversity within and around new developments to provide space for nature and to provide adequate mitigation where biodiversity loss resulting from the development is otherwise unavoidable. The development seeks to protect and enhance local ecology through its site wide landscaping strategy which aims to provide improved climate resilience through nature-based solutions that provide co-benefits to development including improved air quality, sustainable urban drainage and urban heat island mitigation.

7.1 Ecological Enhancement and Biodiversity Net Gain

The site has a limited existing ecological value and comprises predominantly urban developed land (office buildings, roads, pavements and car parks) with some scattered trees present within the central area and along the northeast, south and west boundaries of the site.

A Biodiversity Net Gain Assessment has been developed by arbtech confirming that the development seeks to protect and maintain the existing ecological features of the site through mitigation measures that will be in place during the pre-construction and construction phases. These include, but are not limited to, removal of vegetation outside of the bird breeding season (March-August) where possible, or under ecological supervision and following precautionary working measures to ensure that nesting birds and hedgehogs are not harmed by construction works.

Key BNG outputs are:

- The on-site baseline generates 17.17 habitat units and 0.11 hedgerow units
- The on-site post-intervention generates 13.80 habitat units and 0.20 hedgerow units
- The on-site net change is -3.37 habitat units and 0.09 hedgerow units

Biodiversity will be enhanced through the following measures:

- Retention and incorporation of existing trees where feasible within the development layout.
- Native urban tree and hedgerow planting throughout the Proposed Scheme to provide replacement and enhanced habitat.
- Wildflower meadow area to be created.
- Areas of amenity Lawn and areas of mixed scrub.
- Species-specific habitat creation and enhancements appropriate to the urban context.
- Design of sustainable drainage systems (SuDS) to provide opportunities for biodiversity through the provision of rain gardens.

7.2 Green Infrastructure

Green infrastructure is defined as 'a network of multi-functional green space and other green features, urban and rural, which can deliver quality of life and environmental benefits for communities.

Green infrastructure is not simply an alternative description for conventional open space. It includes parks, open spaces, playing fields, woodlands – and street trees, allotments, private gardens, green roofs and walls, sustainable drainage systems (SuDS) and soils. It includes rivers, streams, canals and other water bodies, sometimes called 'blue infrastructure'.

Green Infrastructure supports climate resilience and community physical health and wellbeing whilst encouraging active travel and reducing water run-off whilst providing attractive outdoor urban areas.

The previous sections of the report set out the design approaches that have included to provide green infrastructure including:

- Green Roof – to minimise heat island effect and enhance biodiversity – Section 4.3.2
- Sustainable Urban Drainage systems - Section 4.3.2

- Enhanced biodiversity through planting of urban trees, new hedgerows and wildflower meadows – Section 7.1.

8.0 Conclusion

This Energy & Sustainability Statement demonstrates how sustainable design principles have been considered for the proposed St Michael's Place located in Knowsley, Merseyside., in accordance with local energy and climate change policy requirements including Knowsley Council and the Local Plan: Core Strategy (adopted January 2016) and other Local Planning Requirements

Policies Sd1, CS7, CS8, CS9, CS23, CS24, CS26 were considered as part of the report.

8.1 Low Carbon Design Principles

The following will be considered in the design of the development:

- Passive Measures.
 - Exploration of orientation on performance.
 - Building Fabric
 - Reduced air permeability.
 - Maximising daylighting.
- High Efficiency Systems.
 - Energy efficient lighting.
 - Energy efficient vertical transportation including use of regenerative drive and variable speed drivers.
 - VRF Systems.
 - Use of heat recovery systems.
 - Reducing the volume of water used in sanitaryware.
- Electric Vehicle Charging (EVC).
- Cycle Storage.

It is considered that all low carbon design principles are viable and to be implemented into the development where appropriate.

8.2 Low and Zero Carbon Technologies

This report considered the following low or zero carbon technologies:

- Air Source Heat Pumps (ASHPs).
- Ground Source Heat Pumps (GSHPs).
- Biomass Heating.
- Combined Heat and Power (CHP).
- Wind Power.
- Photovoltaics and Battery Storage.
- Solar Water Heating.

Of these, the most suitable LZC technology for incorporation into the proposed development would be Air Source Heat Pumps and Photovoltaics , to be developed as the design progresses.

Appendix 1 – Planning Policies

1.0 National Policy

1.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) (December 2024 revision) sets out the government's planning policies for England and guidance on how these are expected to be applied. The NPPF states that the purpose of the planning system is to contribute to the achievement of sustainable development, which is defined as meeting the needs of the present without compromising the ability of future generations to meet their own needs. This includes the provision of homes, commercial development and supporting infrastructure in a sustainable manner.

Section 2 describes the three overarching objectives of the NPPF that are intended to be pursued in mutually supportive ways and delivered through the preparation of plans and application of the policies within the Framework. These are:

- a) An economic objective – to help build a strong, responsive and competitive economy;
- b) A social objective – to support strong, vibrant and healthy communities; and;
- c) An environmental objective – to protect and enhance our natural, built and historic environment.

To facilitate the advancement of sustainable development in a positive way, paragraph 10 states that at the heart of the NPPF is a presumption in favour of sustainable development for plans and decisions.

The NPPF supports the transition to a low-carbon future in a changing climate, taking full account of flood risk and coastal change. It aims to help shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure.

Section 14 outlines the energy and climate change policies and states that plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures. New development should be planned for in ways that:

- a) Avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure; and;
- b) Can help to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards.

To help increase the use and supply of renewable and low carbon energy and heat, plans should:

- a) Provide a positive strategy for energy from these sources, which maximises the potential for suitable development, and their future re-powering and life extension, while ensuring that adverse impacts are addressed appropriately (including cumulative landscape and visual impacts);
- b) Consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and;
- c) Identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers.

When determining planning applications, the NPPF states that local planning authorities should expect new development to:

- a) comply with any development plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and;
- b) take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption.

When determining planning applications for renewable and low carbon development, local planning authorities should:

- a) not require applicants to demonstrate the overall need for renewable or low carbon energy, and recognise that even small-scale projects provide a valuable contribution to significantly cutting greenhouse gas emissions;
- b) approve the application if its impacts are (or can be made) acceptable⁵⁸. Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas; and;
- c) in the case of applications for the repowering and life-extension of existing renewable sites, give significant weight to the benefits of utilising an established site, and approve the proposal if its impacts are or can be made acceptable.

Section 9 of the NPPF outlines the sustainable transport policies supports and encourages transport issues to be considered from the earliest stages of plan-making and development proposals.

The NPPF states that applications for development should:

- a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;
- b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;
- c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;
- d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and;
- e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

2.0 Local Policy

2.1 Knowsley Local Plan and Core Strategy

The Knowsley Local Plan: Core Strategy was formally adopted by Knowsley Council in January 2016 and sets out the strategic framework for growth and development within Knowsley up to the year 2028 and beyond. The Core Strategy sets out how and where new development and regeneration should take place and therefore seeks to promote, guide and manage future development of the Borough.

The policies within the Knowsley Core Strategy seek to support Knowsley's Spatial Vision for the Borough to be known for its successful suburban townships that provide a sense of place and community, having sustainable, diverse, more prosperous and healthy populations by 2028. Strategic Objective 7: Manage Environmental Resources aims to manage environmental resources in Knowsley prudently by focusing on sustainable development, recycling and renewable technologies, minimising pollution, reducing carbon emissions and responding to the impacts of climate change.

2.1.1 Policy SD1 Sustainable Development

- 1) When considering development proposals, a positive approach will be taken, which reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. Work will be undertaken proactively with applicants jointly 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.
- 2) Planning applications that accord with the policies in this Local Plan (and any relevant policies in Neighbourhood Plans) will be approved without delay, unless material considerations indicate otherwise.
- 3) Where there are no policies relevant to the application or relevant policies are out of date at the time of making the decision then permission will be granted unless material considerations indicate otherwise – taking into account whether:
 - a) Any adverse impacts of granting permission would significantly and demonstrably outweigh the benefits, when assessed against the policies in the National Planning Policy Framework taken as a whole; or
 - b) Specific policies in that Framework indicate that development should be restricted.

2.1.2 Policy CS2 Development Principles

1) New development in Knowsley and the preparation of subsequent stages of the Local Plan will be expected to support the following development principles:

Principle 1: Promote sustainable economic development, tackle the causes of deprivation and disadvantage and narrow the gap between the richest and poorest neighbourhoods by:

- a) Meeting needs for new housing, employment, retail and other service provision;
- b) Improving business productivity and employment levels in Knowsley;
- c) Reducing economic, environmental, education, health and other social inequalities between Knowsley and other parts of the UK; and
- d) Providing opportunities for positive lifestyle choices and health improvement for people of all ages.

Principle 2: Reduce carbon emissions and adapt to the effects of climate change by:

- a) Contributing to reductions in carbon dioxide emissions from all sources, in line with national targets;
- b) Ensuring an ability to adapt to future changes to national targets for carbon dioxide and other greenhouse gas emissions, including recognising the role of new technology;
- c) Identifying and applying measures offering effective mitigation and adaptation to likely environmental, social and economic impacts of climate change; and

- d) Meeting appropriate minimum standards for sustainability.

Principle 3: Reduce the need to travel and increase accessibility by:

- a) Selecting locations that reduce the need to travel, especially by car, and enable people as far as possible to meet their needs locally;
- b) Assisting the Council in achieving a shift towards more sustainable modes of transport for people, goods and freight;
- c) Encouraging safe and sustainable access for all, particularly by promoting the use of public transport, walking and cycling between homes and employment; and
- d) Supporting the provision and retention of shared space, community facilities and other local services (such as local shops, health facilities, education provision, meeting places, sports venues, cultural buildings, public houses and places of worship).

Principle 4: Recognise environmental limits, protect and enhance environmental assets, enhance local character and promote quality of place by:

- a) Understanding and respecting the character and distinctiveness of places and landscapes;
- b) Protecting and enhancing the historic environment;
- c) Promoting good quality design and ensuring that development respects its setting taking into account relevant design requirements, and best practice;
- d) Maximising opportunities for the regeneration of previously developed land, including derelict or unsightly areas to improve the image of Knowsley and use land resources efficiently;
- e) Mitigating potential negative impacts of traffic growth and road traffic on highway safety, air quality, noise and health;
- f) Supporting policies relating to Green Infrastructure and the greening of towns and cities;
- g) Maintaining or enhancing the tranquillity of open countryside and rural areas;
- h) Maintaining or enhancing the quantity and quality of biodiversity and habitats, including potential impacts on nationally and internationally important sites for biodiversity;
- i) Addressing any issues of unstable land, resulting from Knowsley's legacy of minerals extraction; and
- j) Minimising negative impact upon flood risk, air quality, water quality, land quality, soil quality, and noise or vibration levels and ensuring any negative impacts are appropriately mitigated. Development that will have an unacceptable impact upon any of the above will only be permitted where the benefits of the proposal clearly outweigh the harm.

Principle 5: Make the most efficient use of available resources and infrastructure by prioritising locations consistent with the spatial strategy, which:

- a) Do not require major investment in new infrastructure, including transport, water supply and sewerage, or where this is unavoidable, incorporate appropriate development phasing and delivery assistance;
- b) Ensure environmental protection is enhanced through the phasing of new development and delivery of supporting infrastructure, including working with neighbouring authorities and key partner agencies where appropriate;
- c) Support prudent and efficient management of natural and man-made resources; and
- d) Promote sustainable construction and efficiency in resource use (including reuse and recycling of materials).

Application of the Development Principles

2) The development principles are not in order of priority, will be applied equally alongside other Local Plan policies, and will be implemented using development assessment tools including:

- a) Environmental Impact Assessment and associated legislative requirements;
- b) Health Impact Assessment;
- c) Equality and Diversity Impact Assessment;
- d) Transport Assessment and Travel Planning; and
- e) Design and Access Statements.

2.1.3 Policy CS7 Transport Networks

Overall Transport Strategy

- 1) Planning powers and other interventions will be used to support a sustainable and integrated transport system that will:
 - a) Support the economy by facilitating efficient movement of people and goods within the borough and linking to Liverpool City Centre, the Port of Liverpool, Liverpool John Lennon Airport and other destinations in the surrounding area;
 - b) Help meet the development needs of the borough through to 2028;
 - c) Ensure people can get to where they need to by a choice of walking, cycling and public transport;
 - d) Enhance road safety;
 - e) Seek to reduce carbon emissions; and
 - f) Improve the health and wellbeing of local people.

Location, Design and Management of New Development

- 2) New development will be required to be:
 - a) Located and designed to prioritise accessibility and sustainable modes of travel through a choice of walking, cycling, public transport, and incorporate access for private vehicles. Where deficiencies are identified, developer contributions will be required to improve the accessibility of the location;
 - b) Located and designed to ensure that larger scale proposals (attracting a lot of visitors, customers and/or employees) are located in the most accessible locations;
 - c) Where subject to a planning application, accompanied (except in the case of smaller scale proposals) by Transport Assessments and/or Travel Plans;
 - d) In compliance with adopted cycle, car, disabled and service vehicle parking standards for different types and scales of new development;
 - e) Inclusive of measures that will mitigate carbon emissions and improve air quality where appropriate; and
 - f) Consistent with safeguarding arrangements that secure the operational integrity and safety of Liverpool John Lennon Airport.

Strategic Transport Schemes and Programmes

- 3) The Council will work with national, regional and sub-regional partners to deliver schemes which support Local Transport Plan priorities including:
 - a) Further transport infrastructure that is necessary to support the future expansion of Liverpool John Lennon Airport consistent with its Surface Access Strategy and national aviation policy;
 - b) Improvements to the rail network including electrification of existing lines; enhancements to stations and passenger interchange facilities; provision of Park and Ride facilities; and expansion and/or improvement of the Knowsley Rail Freight Terminal;
 - c) Enhanced provision for buses, including improved bus stations, bus stops and laybys, and the enhancement of the principal bus routes through Quality Bus Partnerships and Quality Bus Contracts;
 - d) Maintenance of transport hubs such as bus termini and train stations to give improved safety;
 - e) Enhanced provision of walking and cycling routes as part of the Green Infrastructure network (see Policy CS8: Green Infrastructure); and

- f) The roll out of infrastructure for low carbon emission vehicles.

- 4) Developer contributions towards strategic transport schemes and programmes will be sought in accordance with Policy CS27: Planning and Paying for New Infrastructure, the Developer Contributions Supplementary Planning Document and/or a Community Infrastructure Levy Charging Schedule.
- 5) Further guidance on transport issues and local parking standards are provided in the Ensuring a Choice of Travel Supplementary Planning Document or revisions to this.

2.1.4 Policy CS8 Green Infrastructure

Maintenance and Enhancement of Knowsley's Existing Green Infrastructure

- 1) Knowsley's existing Green Infrastructure and its beneficial functions will be protected, managed and/or enhanced, primarily to:
 - a) Ensure more attractive and cleaner residential neighbourhoods;
 - b) Sustain and promote biodiversity (including designated sites, priority habitats and protected and endangered species) in accordance with importance and contribution to ecological networks;
 - c) Preserve the character and function of historic environments and valued landscapes;
 - d) Mitigate the effects of climate change and flood risk;
 - e) Mitigate air, water and noise pollution;
 - f) Provide local opportunities for sport, recreation and allotments; and
 - g) Provide sustainable transport linkages between residential neighbourhoods and easy access to employment and services
- 2) To achieve the above, planning powers and other interventions will be used to:
 - a) Protect and enhance strategically important areas of greenspace;
 - b) Ensure an appropriate quantity and improved quality of locally important open spaces, including outdoor sports provision (and ancillary facilities of appropriate scale);
 - c) Promote effective movement of wildlife through a network of strategic green links, by protecting, maintaining and improving existing and new open spaces, water courses (including water quality) and biodiversity assets;
 - d) Protect, enhance and/or introduce biodiversity into existing areas of Green Infrastructure, through integration into the design of new development and public realm projects;
 - e) Improve accessibility for communities to greenspace offering leisure and recreation opportunities;
 - f) Protect and where possible improve green paths and cycleways linking residential areas, existing strategic areas of greenspace, employment locations, local community services and leisure facilities;
 - g) Work in partnership with other districts and relevant bodies at a landscape scale to minimise the impact of development upon Knowsley's existing biodiversity and geological assets, and sustain the protection afforded to internationally important sites, including supporting habitat, for biodiversity outside of the borough; and
 - h) Deliver new integrated and functional Green Infrastructure that helps to mitigate and adapt to climate change, such as sustainable drainage systems, carbon capture and storage, soft landscaping and green roofs.
- 3) Site allocations for greenspace will be identified in the Local Plan: Site Allocations and Development Policies document, with further guidance set out in the Developer Contributions Supplementary Planning Document or future Supplementary Planning Document as appropriate.

Strategic Green Links

- 4) Knowsley's strategically important green links are:
- a) Alt Corridor (Huyton) – stretching from Huyton Village through South Alt Park, Alt Park, Alt Meadows and into Stockbridge Village;
 - b) Valley Corridor (Kirkby) – stretching through Valley Meadow, St. Chad's Park, Millbrook Park, Millennium Green and Mill Dam;
 - c) Whiston to Cronton Corridor – stretching through Cronton, Stadt Moers Park and Whiston Greenway;
 - d) Halewood Triangle – Halewood Park linkage with the Trans-Pennine Trail and to the national cycle network;
 - e) M57 Green Belt Corridor; and
 - f) Knowsley Hall Estate – including Knowsley Safari Park and Local Wildlife Sites.

Green Infrastructure within the Liverpool City Region

- 5) Knowsley Council will work with partners to help deliver local and sub-regional programmes, initiatives and strategies to enhance Green Infrastructure.

Approach to Green Infrastructure and New Development

- 6) New development must be served by Green Infrastructure to meet the needs of residents and the local environment, in a manner which will:
- a) Contribute to the creation of a high quality residential environment;
 - b) Provide access to high quality open space for leisure and recreational purposes;
 - c) Seek to protect, maintain and where possible enhance biodiversity within and around new developments according to their designation and significance to provide space for nature; and
 - d) Provide adequate mitigation and/or, as a last resort, compensation for Green Infrastructure or biodiversity loss, in circumstances where harm resulting from the development is otherwise unavoidable.

2.1.5 Policy CS9 Principal Regeneration Area – North Huyton and Stockbridge Village

- 1) The comprehensive regeneration of North Huyton and Stockbridge Village will be supported, to be carried out in an integrated manner across the two areas. Subject to appropriate master planning exercise(s), new development should provide (in no order of priority):
- a) New housing development in North Huyton and Stockbridge Village, of a range of types suitable for local needs, which will selectively replace existing unpopular stock and re-balance the housing offer;
 - b) Enhanced design quality and site layout providing improved integration with surrounding areas;
 - c) An improved Stockbridge Village centre, including new leisure, community, education and training facilities, small scale employment and local retail provision of a scale and function which meets the needs of the area;
 - d) Transport provision, incorporating public transport, walking and cycling, thereby enhancing linkages within the area and with surrounding areas; and
 - e) Public open space within a wider Green Infrastructure network, focused on improvements to quality, accessibility and integration with new development.
- 2) The boundary of the Principal Regeneration Area will be identified in the Local Plan: Site Allocations and Development Policies, with further guidance in a revision to the existing Supplementary Planning Document.

2.1.6 Policy CS19 Design Quality and Accessibility in New Development

- 1) To enhance the local distinctiveness, identity and accessibility of places, new development within Knowsley will be expected to:
- a) Respond to and integrate positive characteristics of immediate surroundings, including local materials, scale, mass, form, layout, alignment and density of the existing built environment;
 - b) Complement and enhance (where possible), existing landscape, topography, Green Infrastructure; and features of local importance and historic interest;
 - c) Consider provision of landmark buildings and additional detailing at and adjacent to main gateways, movement corridors, town centres and strategic regeneration opportunities;
 - d) Create spaces and places as a focal point, accommodating social interaction and active lifestyles, including provision and integration of high quality public realm and open spaces, public art (as appropriate); and landscaping which promotes biodiversity and integrates existing local habitats;
 - e) Provide safe, secure and convenient routes for movement (including signage), with priority for walking, cycling and public transport, to meet the access needs of all users, particularly pedestrians, cyclists, less mobile people and the elderly;
 - f) Integrate effectively with existing development and link to existing shopping and service provision; and
 - g) Demonstrate community engagement during the design phase of major development proposals.
- 2) To maintain a good standard of amenity for all existing and future occupants of land and buildings, development proposals will be required to:
- a) Avoid unacceptable impacts on existing residents, business occupiers, and future occupiers;
 - b) Minimise crime, fear of crime and anti-social behaviour, including good levels of natural surveillance and security; and
 - c) Accommodate future maintenance and long term management requirements.
- 3) To address the challenges of climate change and future changes in social, economic and environmental priorities, new development should integrate:
- a) Sustainable design principles, with regard to Policy CS17: Housing Sizes and Design Standards and Policy CS22: Sustainable and Low Carbon Development as appropriate;
 - b) Biodiversity (in accordance with Policy CS8);
 - c) Flood risk mitigation (in accordance with Policy CS24);
 - d) Waste recycling; and
 - e) Energy and resource efficiency.
- 4) Further guidance on these issues will be provided in the Local Plan: Site Allocations and Development Policies document and Supplementary Planning Documents as appropriate.

2.1.7 Policy CS22 Sustainable and Low Carbon Development

Sustainable Construction Principles

- 1) New development will be required to meet high standards of sustainable design and construction and minimise carbon emissions. This should be achieved by:
- a) Designing new buildings for flexible uses throughout their lifetime;

- b) Avoiding the creation of adverse local climate conditions by using natural systems to avoid internal overheating and excessive heat generation;
- c) Ensuring developments are comfortable and safe for users;
- d) Making the most effective and sustainable use of water, aggregates and other resources;
- e) Limiting energy use by incorporating high standards of insulation, heat retention, natural ventilation and passive solar techniques;
- f) Landscaping (including measures such as green walls or roofs) to create shelter and reduce any heat island effect;
- g) Using sustainable materials from local suppliers where possible;
- h) Supplying energy efficiently and incorporating decentralised energy systems, using renewable and low carbon energy where feasible;
- i) Managing flood risk, including through the use of Sustainable Drainage Systems (SuDS) and flood resilient design for infrastructure and property; and
- j) Promoting sustainable waste practices in new and existing developments.

Low Carbon Development, Community Energy Fund and Allowable Solutions

- 2) Government targets for carbon reduction in new development are expected to be implemented through updates to the Building Regulations. Where it is not technically feasible or economically viable to meet the requirements on site, contributions to the Council's Community Energy Fund may be accepted as one of a range of options under the Government's proposed 'Allowable Solutions' mechanism. The Fund will be used to support carbon reduction initiatives in Knowsley and potentially the wider Liverpool City Region.

Sustainable Construction Targets

- 3) Local targets for sustainability in relation to specific development areas or sites may be outlined in the Local Plan: Site Allocations and Development Policies.

Priority Zones and Decentralised Energy Networks

- 4) Knowsley Industrial Park and Knowsley Business Park are identified as a 'Priority Zone'. Within this area the Council and its partners will facilitate renewable and low carbon infrastructure by (subject to feasibility) requiring new development to:
 - a) Make provision for connection to an existing or planned decentralised energy network; and
 - b) Be designed to enable future connectivity in terms of proposed site layout, infrastructure and heating provision, including consideration of connections at a later date or phase.
- 5) Subject to opportunity and need, additional 'Priority Zones' may be identified in the Local Plan: Site Allocations and Development Policies.

2.1.8 Policy CS23 Renewable and Low Carbon Infrastructure

- 1) The Council will support proposals that will produce and distribute decentralised, low carbon and renewable energy, provided that they do not cause significant harm (in terms of their number, scale, siting or cumulative impacts) to:
 - a) Natural resources, biodiversity, geodiversity, water and air quality and, landscape character;
 - b) Aviation and transport safety;
 - c) Historical and cultural assets;
 - d) Public amenity and living conditions; or
 - e) Openness and amenity of the Green Belt, except in very special circumstances.

- 2) Proposals must be accompanied by information that shows how the local environment will be protected, and how the site will be restored when energy production ends. Proposals resulting in an unacceptable impact must be mitigated by appropriate measures agreed by the Council.

2.1.9 Policy CS24 Managing Flood Risk

- 1) New development that may cause an unacceptable risk of flooding on the site or elsewhere will not be permitted.
- 2) New development should preferably be located in areas of low probability of flooding. New development in areas of medium or high flood risk will only be permitted if evidence has been submitted demonstrating that the development could not be practicably located in an area of lower flood risk and if applicable the 'exception test' has been complied with, in accordance with national guidance.
- 3) All development which is within or otherwise affects an area of flood risk or is larger than one hectare in size shall be accompanied by a site-specific Flood Risk Assessment (FRA).
- 4) New development shall include flood mitigation measures, where necessary, to manage flood risk associated with or caused by the development. These measures shall be derived from the Strategic Flood Risk Assessment (SFRA), relevant FRA(s) or a local strategy for flood risk management, and:
 - a) Be designed to contribute to the biodiversity of the borough unless it can be demonstrated that this would not be technically feasible;
 - b) Incorporate a Sustainable Drainage System;
 - c) Be fully described in the planning application; and
 - d) Be funded by the developer, including long term maintenance.
- 5) The drainage of new development shall be designed to reduce surface water run-off rates to those associated with a green-field site by treating it at its source. The chosen method of implementation should take account of site size, ground contamination or conditions, and potential damage to adjacent buildings or sites.
- 6) Further guidance on these issues will be provided in a proposed Supplementary Planning Document.

2.1.10 Policy CS26 Waste Management

- 1) The Council will promote sustainable forms of waste management in accordance with the waste hierarchy. As set out in the Merseyside and Halton Joint Waste Local Plan, it will work to:
 - a) Identify and safeguard (where appropriate) waste management sites in appropriate locations;
 - b) Ensure that the borough contributes to meeting the identified sub-regional waste management needs;
 - c) Encourage good design in new development in order to minimise waste, promote the use of reclaimed and recycled materials and to facilitate the collection and recycling of waste;
 - d) Encourage the sustainable transport of waste and promote use of site waste management plans; and
 - e) Ensure that waste management facilities are developed whilst minimising any negative impacts on the environment and communities of the borough.

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