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ENVISION AESC

IAMP One Phase Two Development

Planning Application and Environmental Impact Assessment

Appendix 3.2 Sustainability Statement

June 2021

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ENVISION AESC

IAMP One Phase Two Development

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Appendix 3.2 Sustainability Statement

June 2021

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ACRONYMS

AAP	Area Action Plan
AESC	Automotive Energy Supply Corporation
CCUS	Carbon Capture, Usage and Storage
DCO	Development Consent Order
ESCO	Energy Supply Company
FBS	Future Building Standard (Government's proposed update to Building regulations in England – Full FBS scheduled for 2025, Interim FBS to be adopted as Part L 2021)
IAMP	International Advanced Manufacturing Park
RE100	Global corporate initiative of businesses committed to 100% renewable electricity
SCC	Sunderland City Council
STC	South Tyneside Council
WA	Wardell Armstrong

1 INTRODUCTION

1.1.1 Envision Group (the 'Applicant') is seeking planning permission for the development of a commercial battery manufacturing plant in Sunderland within the International Advanced Manufacturing Park (IAMP) Phase 2 area. This development location, as shown in Figure 2.1, is hereafter referred to as the '*Site*'. The development itself is referred to as the '*Proposed Development*'.

1.1.2 The Applicant has instructed Wardell Armstrong LLP (WA) to provide a Sustainability Statement outlining how the Proposed Development will meet its various sustainability objectives in line with relevant national and local policy requirements.

1.1.3 This Sustainability Statement, submitted in support of the planning application, describes the approach the Project Team has taken to sustainability during the design process and considers the extent to which the Proposed Development accord with the principles of sustainable development. It has been prepared by WA following review of National Policy and local objectives. Sustainability requires a holistic approach that encompasses many different aspects of development and as a result it is necessary to consider a very broad range of policy requirements.

1.1.4 The Applicant actively promotes responsible construction and development and is committed to ensuring the development embodies a conservation approach.

1.1.5 This Statement relies on data provided by third parties and WA accepts no responsibility for inaccuracies carried forward from third party information.

2 THE SITE & ITS SURROUNDINGS

2.1.1 The boundary of the land covered by the IAMP Area Action Plan (AAP) is located within the administrative areas of both Sunderland City Council (SCC) and South Tyneside Council (STC). This area has been designated for manufacturing According to the AAP the "*Principal uses are defined as production, supply chain and distribution activities directly related to the Automotive and Advanced Manufacturing sectors. This would be delivered on a site of 150ha. 110ha of adjacent land would be retained for ecological and landscape mitigation and remain in the Green Belt.*"

2.1.2 The Proposed Development will occupy an area of land towards the southern boundary of the IAMP area, which lies wholly within the SCC administrative area.

Figure 2.1: Site Location
(© Google 2021)

2.1.3 The site currently comprises predominantly agricultural land to the north of the A1290, west of Sunderland and northeast of Washington. The area of land covered by the site boundary is approximately 25 ha. Vehicular access is provided from the A1290.

2.1.4 To the south of the Site, the Nissan motor manufacturing plant occupies the land beyond the A1290 and sets the industrial tone of the landscape. As mentioned above the land immediately within and around the site is designated for strategic industrial

development. The IAMP development extents include 110 ha of land allocated as Ecological and Landscape Mitigation Area (ELMA), which will *remain* within the Green Belt. To the west of the IAMP area lies the northern extent of Washington and the neighbourhood known as Concord, while to the east lies the suburbs of Sunderland and the neighbourhood known as Town End Farm. North of the site, arable fields continue to the A184 and beyond, eventually giving way to Monkton and Hebburn after about 2.5 km.

Figure 2.2: Proposed Site Plan Produced by RPS

3 THE PROPOSED DEVELOPMENT

3.1.1 The Proposed Development consists of a single, three-storey industrial unit (Class B2 General Industrial) that is to house an electrode and battery manufacturing facility with a maximum capacity of up to 9 GWh / annum, split across, two manufacturing plants separated by a central spine of offices. Included within the unit will be an integral electrode manufacturing plant.

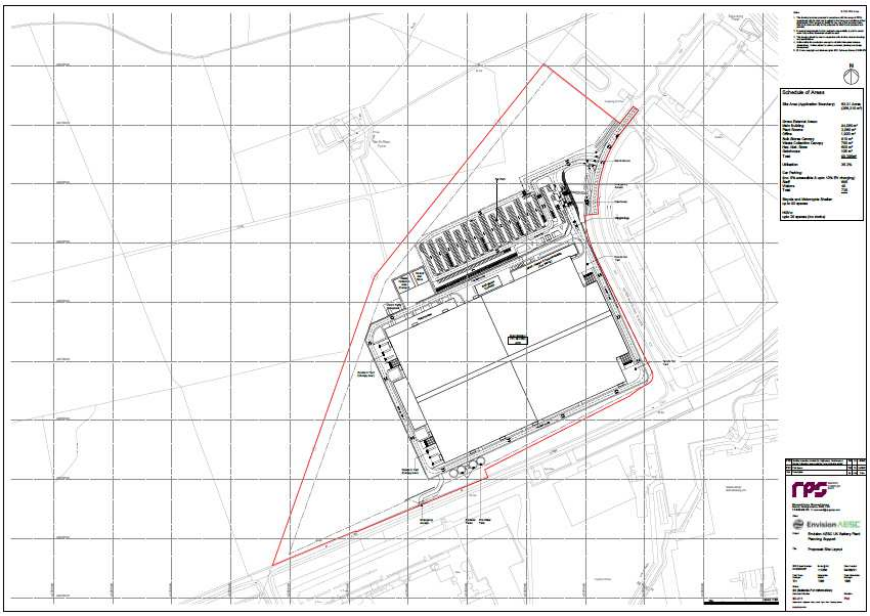

Figure 3.1: Proposed Site Layout Produced by RPS

Figure 3.2: Representative Image showing the Completed Development

4 LEGISLATIVE CONTEXT

4.1.1 The concept of National Sustainable Development Strategies (NSDS) was proposed in 1992 in Agenda 21, the Rio Declaration on Environment and Development. Paragraph 7 of Chapter 8 calls on countries to adopt strategies for sustainable development.

4.1.2 In May 1999, the Government published a sustainable development strategy entitled '*A Better Quality of Life – A Strategy for Sustainable Development in the UK'* which sets out the key issues, aims and priorities. Many definitions of sustainable development exist, although the common objective for all is the integration of economic, social and environmental issues to ensure a better quality of life for people today without compromising the needs for future generations.

4.1.3 During the 2002 World Summit on Sustainable Development in Johannesburg, Member States were urged to elaborate national strategies and begin implementation by 2005. Following this, the UK Government launched *'Securing the Future'*[1] with 250 commitments in four main priority action areas surrounding sustainable consumption and production, climate change and energy, natural resource protection and sustainable communities.

4.1.4 The 2005 strategy also proposes a new code for sustainable buildings that establishes voluntary standards on key issues such as energy, waste, water and materials. The Code for Sustainable Homes was unfortunately later revoked in a ministerial statement[2] published by the Government in March 2015.

4.1.5 The UN Department of Social and Economic Affairs held an expert meeting in 2007 on '*Integrating Climate Change into NSDS*' with the concept that sustainable development was the most effective framework to tackle climate change.

4.1.6 '*The Future We Want*'[3] was the outcome document of the UN Conference on Sustainable Development held in Rio de Janerio in 2012. This details the role of planning and decision making at all levels in enabling effective integration and implementation of the three dimensions of sustainable development. There is also the recognition of need for improved energy efficiency and increased use of renewable energy technologies to aid sustainable development and address climate

[1] HM Government, 2005. Securing the future – delivering UK sustainable development strategy. https://sustainabledevelopment.un.org/content/documents/1408uk.pdf
[2] Department for Communities and Local Government, 2015. Written Ministerial Statement: Planning Update https://www.gov.uk/government/speeches/planning-update-march-2015
[3] United Nations General Assembly, 2012. The future we want. Document A/RES/66/288*. Available online.

change.

4.1.7 The New York UN meeting in 2015, marking the seventieth anniversary, resulted in 17 new sustainable development goals to form the 2030 Agenda[4]. These are promoted as universal goals, involving developed and developing countries alike, that are integrated, indivisible and balance the three dimensions of sustainable development. Of note is the goal surrounding sustainable urban development which states:

4.1.8 *"We will reduce the negative impacts of urban activities and of chemicals which are hazardous for human health and the environment, including through the environmentally sound management and safe use of chemicals, the reduction and recycling of waste and more efficient use of water and energy. And we will work to minimize the impact of cities on the global climate system."*

4.1.9 The Department for International Development issued the UK's approach to delivering the Agenda 2030 Global Goals for Sustainable Development in March 2017[5]. The document provides an on overview and examples of how the Government is contributing towards the delivery of each goal, both around the world and at home.

4.1.10 In 2018 the UK also launched '*A Green Future*'[6] which is the Government's 25-year Environment Plan. This details policies and actions across six key areas, including:

- Using and manging land sustainably.
- Recovering nature and enhancing the beauty of landscapes.
- Connecting people with the environment to improve health and wellbeing.
- Increasing resource efficiency and reducing pollution and waste.
- Securing clean, productive and biologically diverse seas and oceans.
- Protecting and improving the global environment.

4.1.11 In 2019 the UK produced its first Voluntary National Review[7] to assess its progress on the 17 sustainable development goals of Agenda 2030. This was presented to the UN High Level Political Forum on 16 July 2019.

4.1.12 In May 2019 the UK Parliament declared a Climate Emergency following a motion

[4] UN Sustainable Development Goals Knowledge Platform https://sustainabledevelopment.un.org/sdgs
[5] Department for International Development, 2017. Agenda 2030 The UK Government's approach to delivering the Global Goals for Sustainable Development - at home and around the world.
[6] HM Government, 2018. A Green Future: Our 25 Year Plan to Improve the Environment
[7] UK Voluntary Review: https://www.gov.uk/government/topical-events/uk-voluntary-national-review-of-progress towards-the-sustainable-development-goals

raised by the Labour Party leader. Although this did not compel the UK Government to take action, it demonstrated the will of the Common's on the issue.

4.1.13 Sunderland City Council declared a Climate Emergency in March of the same year[8], recognising it was "*important to join other councils in giving the issue suitable attention and clearly setting out how we will meet our targets on cutting emissions*", in light of the "*recent weather and changes in ecosystems* [that] *show that we are already seeing changes as a result of climate change*".

4.1.14 In November 2020, the Prime Minister published a policy paper entitled '*The ten point plan for a green industrial revolution*'[9] 10 point plan. This policy document was a statement of intent by the prime minister aimed at establishing his Government's climate credentials. The paper addressed a variety of low carbon initiatives from offshore wind and nuclear power to sustainable transport, electric vehicles and protecting our natural environment. The paper presents 'target milestones' to aid in delivering these objectives but, although they set out a clear direction of travel, these are not binding requirements.

4.1.15 In December 2020, the Government published an Energy White Paper entitled, 'Powering our Net Zero Future'[10]. The White Paper claims to "*build on the Prime Minister's Ten Point Plan to set the energy-related measures the Plan announced in a long-term strategic vision for our energy system, consistent with net zero emissions by 2050.*"

4.1.16 Whilst strengthening the case for action across the areas identified by the Government, The Energy White Paper is, in itself, still a policy paper, which acts as a guide to the complex and multi-layered issue of how to reduce our emissions while still going about our 'normal' life. The implementation of supporting regulation and legal obligation will be needed to drive this forward. However, as it stands the document sets out measures that the Government perceives as important steps for improving the sustainability and resilience of the Country, with some specific suggestions for UK business. The white paper pledges to, amongst other things, to "*create a sustainable future for UK manufacturing industry through improved energy efficiency and the adoption of clean energy technologies*", and to "*ensure that the*

[8] https://www.climateemergency.uk/blog/sunderland/ (Accessed 20/04/2021)
[9] Johnson, B & Sharma, A, 'The ten point plan for a green industrial revolution', 18/11/2020 https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution (Accessed 20/04/2021)
[10] BEIS, 'Energy White Paper: Powering our net zero future', published 14/12/2020, updated 18/12/2020, https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future (Accessed 20/04/2021)

transformation of our industrial sectors supports jobs, higher skills and new business opportunities across the country."

4.1.17 It goes on to say "*Improved efficiency in the energy performance of buildings and industrial processes will lay the groundwork for the transformation of industrial energy. But we cannot rely on energy efficiency alone to reduce emissions in line with our 2050 goal. Manufacturing industry will need to capture their carbon for onward storage and switch from using fossil fuels to low-carbon alternatives.*"

4.1.18 In March 2021 the Government published its *'Industrial Decarbonisation Strategy'*[11]. Amongst other things, this document set out an indicative roadmap to 'net zero UK industry'. It expects the first industrial carbon capture projects to come on line in 2023/24, with overall industrial emissions reducing by two thirds from 2018 levels by 2035. As part of the transition, the Government is advocating 'low-regret' key technologies i.e. technologies "*such as hydrogen and* CCUS [Carbon Capture, Usage and Storage]*, which is robust to future uncertainties such as industrial demand, technical challenges and fuel prices."*

4.1.19 As a 'clustered' and internationally designated industrial area, the IAMP site could be a strong contender to make an early transition to a lower carbon future, presenting opportunities for prompt deployment of the new infrastructure that the Government views as critical for industrial adoption in order to meet its emission reduction targets.

[11]

5 PLANNING POLICY

5.1 Introduction

5.1.1 A list of the key legislation, regulations and policy is provided below. A comprehensive documentation of all relevant national, regional and local planning policy associated with the *Sustainability Statement* is provided in Appendix 1 and should be consulted in conjunction with the main report.

5.2 National Legislation, Regulations & Policy

- Climate Change Act 2008.
- Town & Country Planning (Environmental Impact Assessment) Regulations 2017.
- Building Regulations (2013 incorporating 2016 amendments) (Part L).
- National Planning Policy Framework (2021).

5.3 Local Policy

- SCC Core Strategy and Development Plan 2015-2033.
- IAMP Area Action Plan 2017-2032.
- Draft Development Management Supplementary Planning Document Dec 2020.

6 SUSTAINABILITY STATEMENT APPROACH

6.1.1 Following a review of the relevant national, regional and local sustainability objectives outlined in Appendix 1, the following sustainability topics have been identified, against which the Proposed Development have been evaluated:

- Waste & Recycling (includes Construction & Demolition).
- Flood Risk.
- Development Ratings.
- Materials.
- Energy.
- Water.
- Pollution.
- Biodiversity.
- Secure Design.
- Contaminated Land.
- Travel.
- Adapting to Climate Change.

7 WASTE & RECYCLING

7.1 Policy Context

- Sunderland Core Strategy & Development Plan Policy: BH2 Sustainable Design & Construction.
- Sunderland Core Strategy & Development Plan Policy: WWE6 Waste Management.

7.2 Developer Compliance

7.2.1 Waste, if not managed safely, can result in pollution of the environment. The least sustainable waste solution is disposal to landfill. The reuse and recycling of materials and waste will be encouraged. The Applicant will follow the waste management hierarchy adopted in the Joint Municipal Waste Management Strategy[12] (see Figure 7.1) and incorporate facilities to minimise waste.

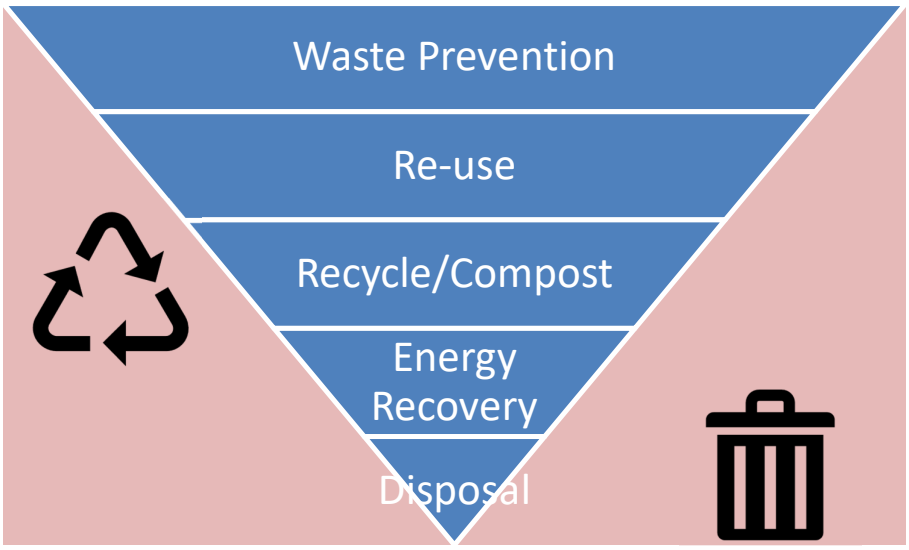

Figure 7.1: Waste Disposal Hierarchy

[12] South Tyne & Wear Waste Management Partnership Joint Municipal Waste Management Strategy, Oct 2007, "Fig 1.1: Waste Hierarch, Waste Strategy 2007", https://www.sunderland.gov.uk/media/20898/SD-56-South-Tyne-Wear-Waste-Management-Partnership-Joint-Municipal-Waste-Management-Strategy-2007-/pdf/SD.56_South_Tyne_and_Wear_Waste_Management_Partnership_-_Joint_Municipal_Waste_Management_Strategy_.pdf (Accessed 21/04/2021)

Table 7.1: Waste & Recycling Initiatives		
Initiative	**Description**	**Commentary**
WR1	Site Waste Management Plan	A Site Waste Management Plan will be prepared by the Principal Contractor. The purpose is to ensure the efficient management of building materials, legal disposal of waste and the maximisation of material recycling, reuse and recovery. The plan spans across pre-construction activities through to post construction review.
WR2	Provision of training	All members of the workforce will be made aware of the waste strategy and will receive relevant training. Training will ensure proper waste management handling procedures are implemented.
WR3	Waste management during design phase	The Proposed Development will be designed to utilise prefabricated construction panels where feasible. There will be a commitment to ensure that precise material requirements are specified to avoid unnecessary waste. Sustainable procurement practices will be implemented by seeking to minimise packaging.
WR4	Waste management during the construction phase	The Applicant is committed to reducing waste during construction. The Applicant will seek to ensure that the Principal Contractor is obligated to develop and implement a site wide strategy for maximising resource efficiency, litter prevention and environmental protection. The contractor should cover good practice, waste reduction, re-using and recycling construction waste on-site wherever possible. The Principal Contractor should arrange collection of wastes and effective disposal to an appropriate facility. Good practice measures will be implemented to ensure site waste management is effective. These include; a system of recording and monitoring waste generation and recycling and training of proper waste management handling procedures. Cut and fill management will be employed to minimise waste removal offsite using both inert demolition materials and soil.
WR5	Waste disposal during the construction and operational phase	Recycling and re-use of materials will involve waste to be monitored, sorted and stored in as many segregated waste streams as appropriate. Adequate storage space for recyclable and compostable materials will be provided in commercial buildings. The layout of the Proposed Development will take into consideration the need for recycling collection. Reuse of materials from the demolition of existing site infrastructure will be explored for potential off-site users to use, this includes top-soil.

8 FLOOD RISK

8.1 Policy Context

- International Advanced Manufacturing Park Area Action Plan 2017-2032 International Advanced Manufacturing Park Area Action Plan 2017-2032; Policy IN2: Flood Risk and Drainage.
- Sunderland Core Strategy & Development Plan Policy: BH2 Sustainable Design & Construction; NE1 Green & Blue Infrastructure.
- Sunderland Core Strategy and Development Plan 2015-2033: WWE2 Flood risk and coastal management; WWE3 Water Management.

8.2 Developer Compliance

8.2.1 Extreme weather patterns, likely attributable to climate change, can lead to a multitude of additional pressures. One such pressure is on flood defences due to an increased flood risk. During extreme winter storms, flooding issues can cause significant problems especially in places where the topography of the land renders them susceptible. Development of the FRA & Drainage Strategy was carried out by Systra and initiatives suggested in Table 8.1 are consistent with their findings.

Table 8.1: Flood Risk Initiatives

Initiatives	Description	Commentary
FR1	Flood Prevention through Flood Risk Assessment	**Fluvial Flooding:** Medium to high flood risks are identified to the northern corner of the development site with increasing climate-change impact. To mitigate this risk, floor levels are set 600mm above design flood level and the development platform level is set to block overland flood route to protect new and existing development to south-east. **Surface Water Flooding:** The risk from surface water flooding is considered low although, some small, isolated areas within the development boundary are medium to high risk. However, cut-off ditches will be installed to redirect flows around the site. Additionally, new floor levels should be a minimum of 150mm above external ground level. **Sewer Flooding:** Flood risk from sewers is considered to be low risk. **Groundwater Flooding:** The flood risk from groundwater can be considered low and land drainage will be installed if necessary.
FR2	Sustainable Drainage	SuDS have been incorporated within the Proposed Development; this includes attenuation of run-off to greenfield run-off rate using sustainable drainage (underground storage).
FR3	Swales,	The proposed development considers road-side swales and outfall into watercourses or to trunk storm sewers.

Table 8.1: Flood Risk Initiatives		
Initiatives	**Description**	**Commentary**
FR4	Sediment run-off containment	Adoption of measures to prevent and control the release of sediment, such as directing surface water across vegetated zones or through mesh fencing to capture the sediment. Sediment traps or settlement lagoons may be considered if the quantity of sediment-laden water is anticipated to be large.
FR5	Porous / Permeable Paving or Tarmac	Permeable paving has been considered and will be utilised for external hard landscaped areas (such as car parking areas) where possible within the design for attenuation purposes.
FR6	Underground Attenuation Tanks	Underground attenuation tanks have been included.

9 DEVELOPMENT RATINGS

9.1 Developer Compliance

9.1.1 The Applicant is committed to providing commercial space of high-quality design. Design stage SBEM assessments will be carried out prior to construction that will inform an appropriate energy strategy and the development will be built to standards exceeding those in current Building Regulations. The Applicant makes a firm commitment to achieving a BREEAM "Very Good" Rating and will submit a Design Stage Certificate prior to construction. Following completion, a Post Construction Review under the BREEAM scheme will be undertaken to ensure the standard has been met.

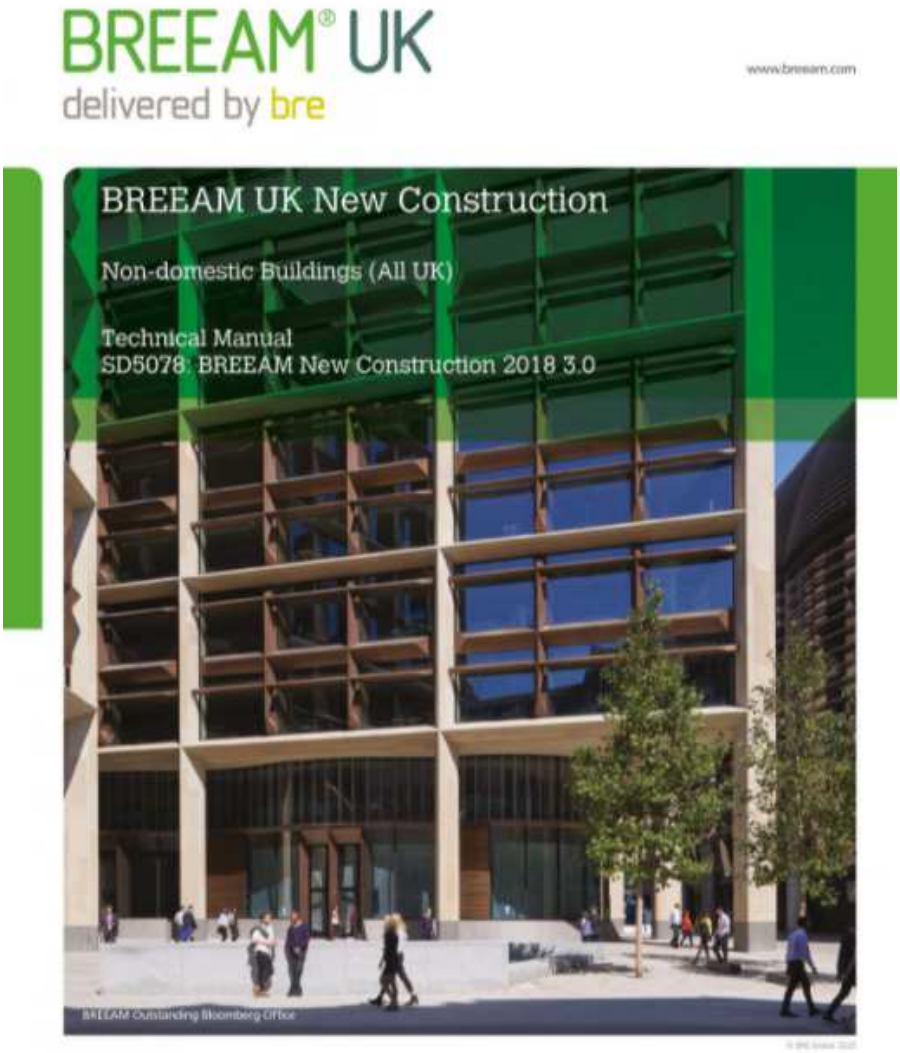

Figure 9.1: BREEAM technical manual for new constructions
(https://www.breeam.com/discover/technical-standards/newconstruction/)

10 MATERIALS

10.1 Policy Context

- IAMP Area Action Plan 2017-2032; Policy D2 Public Realm.
- Sunderland City Council Core Strategy and Development Plan 2015-2033; Policy BH2 Sustainable design and construction; Policy HS4 Health and safety executive areas and hazardous substances.

10.2 Developer Compliance

10.2.1 Materials can have an impact on the environment in a range of different ways and at different times during their life cycles. The UK construction industry uses more than 400 million tonnes of material every year, making it the UKs largest consumer of natural resources.

10.2.2 The Applicant, through its tendering process for construction partners, is exploring opportunities to use recycled materials, reusing site-won construction materials, and sourcing locally to reduce transport miles. The scale of development proposed means that here will be a considerable requirement for materials to be brought onto site throughout the construction phase but, by exploring the embodied energy and carbon in these materials from the design stage and refining both the sources and quantities of materials used as the development progresses, the Applicant will seek to minimise the impact of the materials on the local environment. Further detail about the materials expected to be included in the development and the embodied energy and carbon this entails is provided in the Energy Statement and the Climate Change Assessment within the ES.

Table 10.1: Construction Material Initiatives

Initiative	Description	Commentary
CM1	Procurement of Materials	The procurement of materials for the Proposed Development will prioritise renewable or sustainable sources with low energy impact. Policy D2 of the IAMP Area Action Plan requires materials to be used in the public realm to be set out in a Public Realm strategy.
CM2	Maximise use of demolition materials and reduce waste streams	The Principal Contractor will be required to consider the options for utilising any waste materials produced during the construction and demolition works on the site. Specifically, this will include consideration of landscaping, secondary aggregate use for hardstanding and access roads, and the potential for reuse of previous building materials in the construction of new buildings. Since this development will be almost exclusively greenfield development there are expected to be few opportunities for reuse of

Table 10.1: Construction Material Initiatives		
Initiative	**Description**	**Commentary**
		previous building materials onsite. However, if there are opportunities to reuse materials from other concurrent offsite but local demolitions, this should be explored as a way of reducing the environmental impact of the development.
CM3	Avoid the use of toxic materials where possible	The Proposed Development will avoid the use of toxic glues, solvents treatments and coatings where possible. The Principal Contractor will be required to actively avoid insulating and other materials containing substances which contribute to ozone depletion, or which have the potential to leach harmful chemicals into the local environment.
CM4	Maximise the use of locally sourced materials	Locally sourced materials will be used wherever possible. This will minimise transport emissions as well as other potential environmental impacts as well as providing investment into the local economy.
CM5	Minimise the use of insulation materials known to contribute to ozone depletion	The use of high-efficiency, environmentally friendly insulation will be prioritised for the development.
CM6	Transporting Materials	Opportunities to reduce the carbon footprint associated with the transportation of construction material will be considered wherever appropriate. Where local materials are unavailable or unsuitable for use in the Proposed Development, consideration will be given to the relative merits of alternative sources. This will include, amongst other aspects, whether materials arriving predominately by port or rail offer reduced transport emissions compared to alternative modes of transport such as road, especially for haulage of bulk construction materials.
CM7	Safety of using materials	A Proposed Development should use Best Available Techniques (BAT) and As Low as Reasonably Practical (ALARP) principle to ensure the safety of the site. A pre-construction and pre-operation safety report will have to be submitted prior to each stage and maintained throughout the lifetime of the plant. As part of the preparation of the reports the following is currently planned: • Review of design decisions and justification. • Review of design standards for processing equipment. • MAHAZID. • Preparation of a MAPP document. • Environmental Risk Tolerability Assessment (CDOIF Assessment). In addition to the above task, a selection of following (not extensive) list may be used to understand the risks and how to mitigate them: • DSEAR Review. • HAZIDs and HAZOPs. • Layer of Protection Analysis (LOPA). • Major Hazard Consequence Modelling. • QRA and analysis.

11 ENERGY & CARBON EMISSIONS

11.1 Policy Context

- Sunderland Core Strategy and Development Plan 2015-2033: WWE1 Decentralised, renewable and low carbon energy.
- Sunderland City Council Core Strategy and Development Plan 2015-2033; Policy BH2 Sustainable design and construction.
- Sunderland Low Carbon Framework (2020): Strategic Priority 3 Create an energy efficient built environment; Strategic Priority 4: Develop renewable energy generation and storage; Strategic Priority 5: Low carbon and active transport.

11.2 Developer Compliance

11.2.1 The Applicant aims to minimise the consumption of energy and use of fossil fuels. As well as producing CO_2, fossil fuels such as oil, coal and gas are finite resources and the electricity they produce should be used as efficiently as possible. Appropriate building design can minimise heat loss and maximise solar gain, natural lighting and passive ventilation to reduce energy requirements, whilst electrical appliances and fittings are becoming increasingly energy efficient.

11.2.2 The Proposed Development has been designed to include a high level of fabric efficiency and to use energy efficient technologies where possible to minimise energy use and carbon emissions. The inclusion of renewable energy (in the form of PV panels) has also been considered to help achieve the required emissions reduction.

11.2.3 The Applicant is still looking at the viability of other renewable generation as well as the possibility of joining a local green Energy Supply Company (ESCO) but these proposals are at early feasibility stage. They are mentioned here to highlight the Applicant's intention and desire to seek opportunities for using renewable energy.

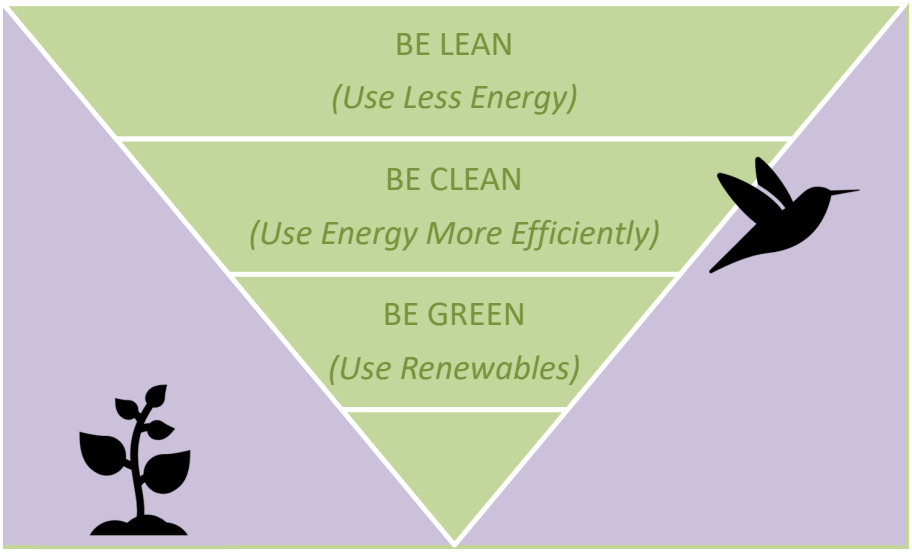

Figure 11.1: Energy Hierarchy

11.2.4 The Applicant's Corporate targets are included in Table 11.1 and there is a brief discussion below. The graphic (Figure 11.2) provides an overview of these, demonstrating the aspiration to decarbonise across all its operations over the next decade.

Figure 11.2: Applicant's Corporate Targets for Decarbonisation

11.2.5 The challenge with this target is achieving it when gas boilers and steam plant are currently the 'normal' way of undertaking the necessary manufacturing processes. Meeting the Dec 2022 target of being carbon neutral in Scopes 1 and 2 (i.e. direct energy use on site and imported electric) would preclude using gas. Work is still underway to determine whether this is realistic for the proposed plant and therefore the Applicant is presenting two scenarios for energy supply of the plant, one with gas plant and one that is fully electrified. Both scenarios are considered in the energy

statement and the Climate Change Assessment to ensure that assessment is provided of whichever method is eventually taken forward.

11.2.6 It is worth noting that even with the all-electric option it would be insufficient on its own to ensure that the development is carbon neutral in Scopes 1 and 2. The intention would be to ensure that 'zero carbon' tariffs (based on nuclear and renewables) were adopted to supplement any onsite renewable generation.

11.2.7 RE100 is global corporate initiative of businesses committed to using 100% renewable electricity. Achieving RE100 status by December 2025 would require additional onsite renewable generation and the removal of any nuclear component from imported electricity supply (i.e. supply would need to be composed of 100% renewable generation).

11.2.8 Becoming carbon neutral in Scope 3 by December 2028 is the most ambitious target of all. This would effectively mean decarbonising the upstream and downstream supply chains and indirect emissions, which would encompass raw material and component supply, transportation of materials and products and consumer use and disposal.

Table 11.1: Carbon Emissions & Energy Initiatives

Initiative	Description	Commentary
CEE1	Energy efficiency during construction	The construction process itself will be managed by the Principal Contractor appointed by The Applicant. The Principal Contractor (and Sub-Contractors) will be required to operate by best practice guidance and to minimise waste wherever possible. This will include minimising excessive or wasteful use of energy in the form of electricity, heat and transport fuel.
CEE2	Mitigation measures in addition to solar PV and ASHPs	The embedded mitigation proposed includes a rooftop solar PV installation and ASHPs that are proposed for the office spaces. The buildings are so vast that these measures alone may be insufficient to meet the Future Building Standard so it is anticipated that enhanced fabric efficiency will be incorporated and WWHR may also be required to help deliver the target 27% emission reduction for regulated emissions. These additional measures have not been assessed in detail due to the lack of SBEM assessment.
CEE3	Energy efficiency from building design	Buildings have been designed to ensure a balance between the competing needs to maximise solar gain during the winter and limit it during the summer to avoid overheating. This has been achieved through passive solar design, intelligent use of glazing, and use of a mechanical ventilation with heat recovery (MVHR) system.
CEE4	Energy efficiency from building fabric	A high quality of fabric efficiency will be achieved through the use of energy efficient materials and in all cases the Building Services

Table 11.1: Carbon Emissions & Energy Initiatives		
Initiative	**Description**	**Commentary**
		Compliance Guide (L2A) standards will be achieved or exceeded. Given the construction timeframes this is likely to mean that the Development will be built out in line with the Government's interim Future Building Standards (FBS), Part L 2021, which is expected to result in emissions 27% lower than would be required under the current Part L 2013.
CEE5	Energy efficiency from building services	High energy efficiency lighting will be installed throughout the development. Exterior lighting will be combined with either photoelectric switches or movement sensors depending on location. Water pipes will be lagged to minimise thermal losses and to protect the pipes during periods of frost.
CEE6	Energy Use	The nature of the industrial processes being undertaken within the site mean that there will be an unavoidably high energy demand. Notwithstanding this, the Applicant will take every opportunity to reduce energy use through system optimisation and energy efficiency gains. Both solar PV and heat pumps are expected to be incorporated into the design of the buildings. Provisional solar PV development plans have been produced with an installed capacity of circa 6.275MW and an estimated annual generation potential of 5GWh. At this stage heat pumps are expected to be used as the heating source for the office space within the building. Although plans have not been finalised, high level estimates have been made for heat pump deployment required based on the circa 5,000m^2 area across two floors. It is anticipated that the peak heat demand will be around 175kW and the annual heating requirement will be 326MWh/yr. These energy sources will assist with reducing the overall carbon emissions associated with the Proposed Development. Smart meters will be installed to increase awareness of energy use and hence help to reduce energy demand from the Proposed Development.
CEE7	Energy Performance	The Applicant will undertake SBEM energy assessments once final specifications for the internal design are available. 'As built' energy assessments will be undertaken upon completion of construction. This will be required for compliance with Building Regulations to assess the energy performance of the building and will also feed into annual reporting on energy use and carbon emissions of the Development. To comply with the local planning policy, Energy efficient design of the proposed development is being considered to meet BREEAM 'Very Good' standards.
CEE8	Corporate Targets	The Applicant has confirmed that its parent company has set corporate targets for it to decarbonise over the coming years.

Table 11.1: Carbon Emissions & Energy Initiatives		
Initiative	**Description**	**Commentary**
		The nature of the processes being undertaken mean that gas boilers and steam plant are the most suitable energy sources for parts of the plant. However, the targets are such that this would be incompatible with its proposed decarbonisation. Work is still ongoing to confirm whether it will be possible to electrify all of the processes onsite and then to use decarbonised and renewable energy sources to supply the electrical demand. Further discussion on the corporate targets is provided in Para 11.2.4.

12 WATER

12.1 Policy Context

- Sunderland Core Strategy and Development Plan (2015 -2033) policy: BH2 Sustainable design and construction; NE1 Green and Blue Infrastructure.
- Sunderland Core Strategy and Development Plan 2015-2033: WWE4 Water Quality.

12.2 Developer Compliance

12.2.1 In addition to added pressures on flood defences, extreme weather events linked to climate change, can affect water supply provision. During prolonged dry spells water can become an increasingly scarce resource, especially as demand continues to grow with an increasing population. To satisfy the increase in demand, new sources of water and associated infrastructure may be required. However, the construction and operation of this infrastructure (reservoirs and treatment works) is expensive, energy intensive and damaging to the environment. Therefore, measures to help reduce water consumption should be undertaken where possible.

12.2.2 To ensure the water resource and the water quality of the site is not affected by the Proposed Development, the following initiatives have been proposed to mitigate any environmental impacts.

Table 12.1: Water Initiatives		
Initiatives	**Description**	**Commentary**
W1	Water Management	A Construction Environmental Management Plan (CEMP) (or equivalent) will be produced that will incorporate key principles of the good practice, legislation, regulations, and guidance to minimise the effect of the proposed development on the water resources.
W2	Water management and conservation	Key principles considered in the construction phase include a construction design with minimal disruption to the natural flow

Table 12.1: Water Initiatives		
Initiatives	**Description**	**Commentary**
	during the construction phase	regime; planning considerations of the protection of watercourses, groundwater, and attenuation features, including the supervision of sub-contractors and liaison with SCC and the EA area staff. Installation of attenuation features at the outset to allow establishment before any surface connections from the Proposed Development. Drains and potholes are regularly inspected, cleared, infilled and/or repaired. Refuelling will be undertaken in a designated refuelling area and the use of biodegradable oils and lubricants will be considered where possible. These resources will be available to contractors at all times of operation. Cement/concrete mixes will be calculated to ensure that sufficient quantities are supplied without the need to dispose of excess and cement: sand mix ratio will be monitored for consistency and suitability.
W3	Water management considered during both the construction and operation phase	Secure storage of all fuel, oils, and other polluting substances within suitably bunded containers and placed upon impermeable surfaces. The use of integral drip trays (of 110% of the capacity of the fuel tank) for any static machinery/ plant, where practicable. All plant, vehicles and machinery will also be regularly inspected for leaks;
W4	Water management and conservation during the operation phase	All workings using chemicals will take place on impermeable surfaces with appropriate bunding and separates to inhibit escape to the environment. All spilt/used fuels, oils and chemical will be disposed of in accordance with the relevant legislation. The Proposed Development would have an operation and maintenance management team who, as part of their role, would ensure all drainage systems are fully maintained and managed in accordance with best practice/guidance.
W5	Rainwater harvesting	Rainwater harvesting was considered but has not been included within the drainage system due to the limited attenuation space in water storage. Further details are included in the FRA & Drainage Strategy.

13 POLLUTION

13.1 Policy Context

- International Advanced Manufacturing Park Area Action Plan 2017-2032; Policy EN4: Amenity.

13.2 Developer Compliance

13.2.1 Pollution can occur in many forms during both the construction and operation phases. During construction the primary forms of pollution would be noise and dust, once completed the Proposed Development could lead to increased emission of pollutants to the atmosphere, e.g. from increased vehicle use once the buildings are occupied.

13.2.2 Chemical pollution can have significant adverse health effects on humans, animals, plants and ecosystems. It can also reduce the amenity value of the environment and damage buildings. As well as affecting plants and animals, other forms of pollution such as light and noise can cause general nuisance to neighbours. The reduction of pollution is therefore critical to sustainable development.

Table 13.1: Pollution Control Initiatives

Initiative	Description	Commentary
PC1	Pollution management during the construction phase	During the construction phase, a best practice Dust Management Plan (DMP), as found within the CEMP, will be implemented. Examples of the dust controls existing in the DMP include; • regular grading and maintenance of haul roads, if used within the Site, • speed restrictions on vehicles within the Site. • minimising of stockpiling heights, thereby reducing wind whipping and lofting. • laden lorries to be covered before leaving the site; • provision of training to the site personnel on dust mitigation; all dust complaints and associated actions will be recorded along with a detailed written log of received information and complaints, and actions taken to resolve the situation. • Water bowsers will also be provided to spray haul roads and stockpiles with water to suppress dust emissions, as necessary.
PC2	Dust pollution mitigation of the Construction phase	This will be part of the CEMP.
PC3	Minimising noise pollution during the construction phase	Best working practice can be set out in the CEMP with the following measures put in place to minimise noise emissions: • Implement set working hours during the week and at weekends, and adherence to any time limits imposed on noisy works by the local authority;

Table 13.1: Pollution Control Initiatives		
Initiative	**Description**	**Commentary**
		• Should earthworks and/or construction activities need to be carried out during night-time hours, the local authority could include a planning condition that requests advance notice and details of any night working to be provided. • Screening noise sources via temporary screens may be used when works are taking place within close proximity to North Moor Farm. • All machinery should be regularly maintained to control noise emissions, with particular emphasis on lubrication of bearings and the integrity of silencers. • Site staff should be aware that they are working adjacent to a sensitive area and avoid all unnecessary activities due to misuse of tools and equipment, unnecessary shouting and radios; • As far as possible, the avoidance of two noisy operations occurring simultaneously in close proximity to the same sensitive receptor; and • Ensure engines are turned-off when possible.
PC4	Minimising noise pollution during the operational phase	The following indicative measures have been proposed for potential adoption: • Evaluation of each unit to be undertaken at detailed design stage and mitigation measures proposed accordingly (if required). • External plant (e.g. fans, stacks and heating and ventilation units) can be specified to reduce noise levels. Where necessary, silencers may be applied to plant to attenuate tonal components. • Where possible, building access points (e.g. shutters and loading bay doors) may be positioned to face away from North Moor Farm (north). • White noise reversing alarms for movements within yards may be specified (if required).
PC5	Minimising light pollution	Construction activities should occur only during the set working hours outlined in the CEMP. Any lighting required during this phase, for example in early evenings during winter, will therefore be limited to these times. Outside of these hours there should be no need for artificial lighting on the site during construction.
PC6	Pollution management during operation	During the operational phase, guidelines to ensure the safe storage and disposal of potential pollutants and contaminants will be followed. Measures could include but not be limited to: • Appropriate storage and disposal of Municipal Solid Wastes. • Recycling of batteries. • Safe disposal of any medicines and / or medical waste generated.

Table 13.1: Pollution Control Initiatives		
Initiative	**Description**	**Commentary**
		• Safe storage and disposal of detergents and cleaning solutions • Ensure radon provisions are in place where appropriate. • Provision of emission-free at point of use heating systems (such as ASHP).
PC7	Minimising transport pollution	Pollution from transport emissions will be reduced by a programme of actions which could include: • EV recharging infrastructure facilities. • Low emission vehicle parking spaces. • Support local walking and cycling initiatives. • Low emission bus service provision. • Bike / e-bike hire schemes. • Implementation of a Green Travel Plan. During the operational phase, transport pollution mitigation measures that are considered resemble that of IAMP ONE and include transport-related measures such as junction upgrades, traffic management improvements and a travel plan.
PC9	Minimising water pollution	The preparation of pollution incident response plans, identifying the type and location of onsite resources (spill kits, absorbent materials, oil booms etc.) available for the control of accidental releases of pollution and other environmental incidents. These resources will be available to contractors at all times of operation.

14 BIODIVERSITY

14.1 Policy Context

- Sunderland Core Strategy and Development Plan 2015-2033: Policy NE2 Biodiversity and geodiversity; Policy NE3 Woodlands/hedgerows and trees; Policy NE4 Greenspace.
- Sunderland City Council Core Strategy and Development Plan 2015-2033; Policy BH2 Sustainable design and construction.
- International Advanced Manufacturing Park Area Action Plan 2017-2032; Policy EN2: Ecology; Policy EN3: Green Infrastructure.

14.2 Developer Compliance

14.2.1 It is assumed that the proposals will result in the loss of all existing habitats within the site. To restore the biodiversity of the site and achieve a biodiversity net gain, as listed in policy NE2 Biodiversity and geodiversity, the following initiatives have been proposed to contribute towards achieving biodiversity net gain.

Table 14.1: Biodiversity Initiatives

Initiatives	Description	Commentary
B1	Ecological and Landscape Mitigation Area (ELMA)	In response to the initial habitat loss with the site development, the 110 ha ELMA was implemented as part of the 2018 IAMP ONE consent and includes a wide range of habitat enhancements. Overall, the ELMA proposals will deliver a net gain for biodiversity for the IAMP scheme as a whole.
B2	Ecological Enhancement	Several ecological enhancement features have been considered as on-plot measures to develop the sites ecology and biodiversity. This includes extensive native tree planting; a native buffer shrub planting mix; a native hedge mix; a native wetland shrub mix; and a native marginal planting mix. An ornamental shrub mix closer to the buildings will provide further habitat for wildlife, as well as year-round visual amenity for the development. Areas of grassland proposed comprise wildflower meadow (Emorsgate EM1 mix), flood meadow (Emorsgate EM8 mix), and shade-tolerant wildflower mix (Emorsgate EH1).
B3	Measures to mitigate disruption to birds	Demolition and hence removal of suitable nesting habitats will not be undertaken during the bird nesting period (i.e. March to August, inclusive) unless a check survey by a suitably qualified and experienced ornithologist has confirmed that active nests are absent.
B4	Mitigation measures for effects on barn owl	As the site is considered a nesting and active roosting site for barn owl, the following proposed mitigation measures could be adopted to mitigate the overall impact on biodiversity of the site. These measures include: • Prior to demolition, a check survey will be undertaken to establish the absence of active nests. • Three barn owl boxes erected as mitigation. Two of these, located at

		Hylton Bridge Farm stables and barn (located circa 1 km to the northeast) have now been erected. • A third box will be erected in a tree located within the ELMA mitigation area (see Figure 6 in Appendix 12.2). • Demolition of all buildings on site will not be carried out while barn owls are breeding on site to ensure there is no disturbance to the owls during this period. • The main breeding period is March to September, inclusive, but as barn owls can breed all year round, checks will be made prior to demolition. • Mitigation for the loss of Elliscope Farm in the north of the wider IAMP site includes three barn owl boxes in trees in close proximity to the farm and a wildlife tower in the field to the south of the farm.
B5	Measures to mitigate disruption to bats	The following mitigation measures have been proposed to reduce the impact that the development will have on bats. These measures include: • Works will not commence until a detailed inspection of the structures where roosts have been recorded (i.e. buildings 2 and 5) has taken place, with the provision of scaffolding / cherry picker access to facilitate this inspection. • As a precaution, demolition of buildings 1, 2, 3, 5 and 8 will avoid the core hibernation period (i.e. December to February, inclusive) in order to avoid potentially disturbing hibernating bats. • Old slates, coping stones, ridge tiles and barge boards will be removed carefully by hand, being aware that bats may be present beneath slates or ridge tiles, within mortise joints, cavity walls, between loose stones, between lintels and in gaps around window frames. • If bats are found during works when the ecologist is not onsite, works will stop in that area and the ecological consultant will be immediately contacted. If it is necessary to move the bats for their safety, this will be undertaken by a licensed bat worker. • Alternative provision will be provided in the form of three woodcrete or woodstone bat boxes erected within the woodland immediately south of the farm. A hibernation box will also be installed within this woodland. This alternative provision will all be in place prior to demolition of the buildings.
B6	Mitigation measures for impacts on hedgehogs	The development will consider the clearance of ground cover habitats, that are suitable for hedgehog, to occur outside of the winter hibernation period. Additionally, the proposed planting of native species and / or species of known ecological value will provide both foraging and commuting opportunities for any hedgehogs that may be present. The site boundaries will remain permeable through the incorporation of hedgehog gateways to allow for continued access and dispersal.
It should be noted that, with regards to Initiative B4 and Initiative B5, listed above, these are to be delivered separately as part of the planning application for the demolition of West Moor Farm. This mitigation is, therefore, not being proposed as part of this application, which relates to the proposed creation of a battery plant.		

15 SECURE DESIGN

15.1 Developer Compliance

15.1.1 Part of creating a sustainable development is ensuring that the environment is safe and secure for all users of that space so they can operate in comfort and confidence. Community safety and crime prevention should be considered within the development design. The design of the Proposed Development means that the majority of the site will generally not be accessible to the public. Open spaces are utilised, and site layout has been designed in such a way that these open spaces have sufficient surveillance.

15.1.2 Part of the secure site design will be the inclusion of a fence around the perimeter of the operational site. This will be a combination of a 2.4m high Paladin fence (as shown in Figure 15.1) across the more exposed frontages within the site, and a 1.2m timber post and wire mesh fence around more enclosed parts.

Figure 15.1: Paladin Fence

Table 15.1: Secure Design Initiatives		
Initiatives	**Description**	**Commentary**
SD1	Site Layout and Design	Since the site will operate 24/7 and shift patterns will mean that workers will have access to the site at all times, lighting across the site is designed to provide an even spread of illumination, avoiding any darker areas.
SD2	Communal Spaces	Although there will not be designated recreational space within the Site, the masterplan includes areas of green space and grassing which may be used by staff to take strolls and get fresh air during their breaks. Additionally, due to the shift patterns

Table 15.1: Secure Design Initiatives		
Initiatives	**Description**	**Commentary**
		and the constant presence of workers on and around the site, there is likely to be a strong deterrent to criminals from entering due to increased public surveillance.
SD3	Boundaries and access	There is an area of green space included around most of the perimeter of the site which, subject to ecological mitigation recommendations, will provide a buffer to people trying to enter the Proposed Development. As discussed above, fences will be introduced around the boundary as well which will provide both a visible and physical deterrent to unwelcome visitors, separating the Proposed Development from public areas.
SD4	Accreditation	The Applicant will seek to achieve accreditation under the Secured by Design Scheme.

16 CONTAMINATED LAND

16.1 Policy Context

- Sunderland City Council Core Strategy and Development Plan 2015-2033: Policy HS3 Contaminated land.

16.2 Developer Compliance

16.2.1 The majority of the site is currently greenfield but nevertheless, the following potential contamination risks may be relevant to the construction phase, and should be given due consideration:

- Contamination associated with heavy metals and hydrocarbons.
- Contamination associated with asbestos.
- Contamination associated with hazardous gas / vapours.

Table 16.1: Contaminated Land Initiatives

Initiative	Description	Commentary
CL1	Water	During construction, the Applicant and its agents will ensure that chemicals and construction materials are stored safely, within appropriately bunded storage facilities where necessary.
CL2	Dust	Dust will be controlled during the construction phase. Should dust become airborne the site will be damped down to reduce the effects of dust and prevent it becoming a nuisance or health issue.
CL3	Soil	The Principal Contractor will adopt a precautionary approach to soil contamination to ensure potentially harmful chemicals and materials are recycled / reused where possible, stored and managed securely while on site and ultimately disposed of safely at appropriately licensed facilities.

17 TRAVEL

17.1 Policy Context

- International Advanced Manufacturing Park Area Action Plan 2017-2032; Policy T2: Walking, Cycling and Horse Riding; Policy T3: Public Transport; Policy T4: Parking.
- Sunderland Low Carbon Framework; Strategic Priority 3; Low and Active Carbon Transport.

17.2 Developer Compliance

17.2.1 For site accessibility, the travel initiatives listed below in Table 17.1 consider the provision for low carbon transport within the proposed development following the implementation of Sunderland's Low Carbon Framework.

17.2.2 Proposals will include the provision of cycling facilities of the type shown in Figure 17.1, below, as well as substantial electric vehicle provision.

Figure 17.1: Example of the Proposed Cycle Shelters to be included within the site

Table 17.1: Travel Initiatives		
Initiative	**Description**	**Commentary**
T1	Encourage pedestrians	As part of the access strategy for the development, several new pedestrian links will be provided to ensure pedestrian and cycle connectivity
T2	Encourage cyclists	The Proposed Development will be connected to cycle paths and pedestrian links to encourage the use of bicycles. The proposed development will include appropriate cycling facilities, such as parking, showers and storage.
T3	Encourage car share and car clubs	The Proposed Development will be encouraging car share by allocating car parking provision for the use of car-sharing, only. The scheme should consider the introduction of a car club facility for the IAMP site.
T4	Encourage bus use	The Applicant will ensure up to date bus timetables are available within the Proposed Development, as well as information on any local bus transport deals that may be available, to help encourage their use. There is a proposed enhanced bus service between the IAMP and: a. surrounding residential areas; b. Heworth and Sunderland multi-modal transport interchanges; and c. Hebburn, Jarrow, South Shields and Washington centres; The Proposed Development will offer a clear and safe walking route to the proposed bus stops. It is also proposed that there will be new bus stops and improved waiting facilities within the IAMP AAP area.
T5	Encourage train use	The Proposed Development will ensure there is a safe walking / cycling route to the proposed railway station. A pedestrian route from the Proposed Development to the station should be considered. The Applicant should ensure up to date train timetables are available within the Proposed Development, as well as providing information on services to help encourage their use.
T6	Encourage electric vehicles	The Proposed Development will encourage electric car use by making provision for car and bicycle electric charging points within parking areas across the site. It is proposed to include No. 40 7kW EV charging points in the main carpark with a further No. 5 charging points in the visitor car park. A small number of 50kW fast chargers will also be installed on site.

18 ADAPTING TO CLIMATE CHANGE

18.1 Policy Context

- Sunderland Core Strategy & Development Plan 2015-2033: Policy WWE1 Decentralised, renewable and low carbon energy.

18.2 Developer Compliance

18.2.1 Climate change has the potential to affect a wide variety of receptors through a multitude of different effects. These include, inter alia, flooding, drought and exposure to more extreme weather patterns.

Table 18.1: Adapting to Climate Change Initiatives

Initiative	Description	Commentary
ACC1	Adaption to heat waves	The passive design of the buildings already seeks to maximise solar gain during the winter and minimise it during the summer. The non-domestic areas would be fitted with a cooling system making use of ASHPs to ensure climate control. The design of the building seeks to minimise the risk of overheating and minimise any potential demand for other measures. The proposed development will help to combat the urban heat island effect by including green infrastructure and, where possible, avoiding the use of dark materials which absorb heat. To this end, the exterior of the main buildings will be finished in a light grey, which will also provide coherence with the surroundings in matching the tone of the Nissan plant.
ACC2	Adaption to extreme cold	Unlike much of the existing UK building stock, new development built in line with current *Building Regulations* already benefits from a good level of insulation which offers much greater resilience to extremes of temperature. The incoming interim FBS (Part L 2021) will require considerable increases in building fabric in order to achieve the required emission reduction. Once these have been implemented, the buildings should be well equipped to deal with any extreme temperatures likely to present in the UK.
ACC3	Adaption to flooding	The Proposed Development lies within flood risk zone 1 'Low Probability' therefore the annual probability of flooding at the site is less than 1 in 1,000 years - so potential flooding would be highly localised. The drainage plans put in place should be suitable to discharge expected levels of rainfall, but climate change could result in abnormally high levels of rainfall deluge. As described in Section 9.2 and in line with Environment Agency guidelines, allowance for a 40% increased volume of surface water runoff due to climate change effects, will be incorporated into the design of the drainage system.

Table 18.1: Adapting to Climate Change Initiatives		
Initiative	**Description**	**Commentary**
ACC4	Adaption to water scarcity	Water scarcity could be a problem if climate change results in more frequent hotter and drier periods. There is potential for existing local water supplies to be placed under considerable strain in prolonged periods of drought. Water management measures such as flow control devices could be installed to limit water consumption.
ACC5	Adaption to sea level rise	Sea level rise is not expected to have a direct impact at this site however, the completed development may need to take account of the possible effects of sea level rise on supply chains and import / export operations.
ACC6	Adaption to extreme weather patterns and storms	Conformance to current building regulations should provide suitable confidence in the structural integrity of the buildings, which will be designed to survive any expected instances of severe weather including high winds and snow loading. On completion of the build, the Applicant will undertake snagging checks and make clear the warranty period. Any structural defects identified will be remedied by the Applicant to ensure building integrity is preserved.
ACC7	Adaption to reducing availability of fossil fuels	Consideration should be given to the provision of transport services to the Proposed Development once it has been constructed. Residents should be encouraged to use alternative methods of transport to commute to work including using public transport and car sharing agreements.
ACC8	Climate resilient landscaping measures	Key aspects suggested for consideration when designing climate resilient landscaping are: • Species selection: Drought tolerant species (e.g. enzymic resilience to warmer temperatures). • Sensitivity to watering (e.g. induced root hypoxia and rot from oversaturation). • Growth inhibition (e.g. pollution tolerance). • Wind tolerance (e.g. strong, deep root structures). • Year-round ecosystem services (e.g. forage and shelter capability during difficult seasons to continually support ecology and human needs). • Avoiding fragmentation of green spaces, landscapes and ecological habitats where possible. • Control use and spread of invasive / alien species that may impede native species ability to adapt or be in competition for resources during times of decreased availability (e.g. as a response of extreme weather).

19 SUMMARY

19.1.1 This *Sustainable Design & Construction Statement* has been prepared to demonstrate the approach that has been taken to sustainability during the design process, and considers the extent to which the Proposed Development meet with the principles of sustainable development.

19.1.2 Consideration has been given to where the Proposed Development accords with the national and local planning policy and local planning objectives including those outlined in *Sunderland Core Strategy & Development Plan* and *International Advanced Manufacturing Park Area Action Plan 2017-2032 Adopted Nov-2017*.

19.1.3 Following this evaluation, strategies and initiatives to help address any remaining discrepancies have been proposed. It is suggested that once the initiatives been adopted, the Proposed Development will meet the national and local planning policy and sustainability criteria set out by both the Local Authority and the Applicant themselves.

Appendix 1 Planning Policy

APPENDIX 1: PLANNING POLICY

International Advanced Manufacturing Park Area Action Plan 2017-2032[13]

(Adopted Nov-2017)

Policy D1: Masterplan Design

A. Proposals for the IAMP must demonstrate how they reflect the following key design principles:
   i. maximise the interface with Nissan and ensure effective movement between the existing site and the IAMP AAP area;
   ii. development plots using an 'open grid' to create a variety of plot sizes;
   iii. a hierarchical street network connected to existing roads and key transport corridors featuring a central boulevard and primary routes to prioritise access from the A19 and integrate the Northern Employment Area with service networks to encourage efficient movement;
   iv. drainage infrastructure to be accommodated within the street network with Sustainable Drainage Systems (SuDS) placed to enable effective water quality management;
   v. orientation of buildings along the boulevard and primary routes to follow a common building line fronting on to the road, with buildings along the River Don corridor facing towards the river and landscaping uses where possible;
   vi. have special regard to preserving and enhancing the significance, including any contribution made by their setting, of heritage assets within and in proximity to the site, including Scots House (Grade II*) on the south side of the A184, Hylton Grove Bridge (Grade II) on Follingsby Lane and views from elevated locations such as Boldon Downhill and the Penshaw Monument;
   vii. where feasible, orientation of buildings to make use of solar gain, with due consideration for overheating risks, and to optimise opportunity for solar panel use on buildings; and
   viii. have regard to the presence of the North East Land, Sea and Air Museums (as designated on the Policies Map) as a visitor attraction.

B. Proposals must be accompanied by a Design Code for approval by the Councils.

Policy D2: Public Realm

A public realm strategy for the IAMP is required to accompany development proposals, based on the following key principles:

   i. marking key gateways into the site;
   ii. a comprehensive, wayfinding strategy for cyclists and pedestrians;
   iii. use of street furniture and landmarks to reinforce the identity of the IAMP, including within the Hub;
   iv. consistent use of road and pavement materials to reinforce a clear street hierarchy;
   v. provision of green and blue infrastructure at street level; and
   vi. use of low-level lighting within and closer to sensitive ecological areas.

[13] International Advanced Manufacturing Park Area Action Plan 2017-2032 (Adopted Nov 2017) https://www.sunderland.gov.uk/media/19834/International-Advanced-Manufacturing-Park-Area-Action-Plan-2017-2032-Adopted-Nov-2017/pdf/International_Advanced_Manufacturing_Park_IAMP_Area_Action_Plan_2017-2032_-_Nov_2017.pdf?m=636477263205830000 (Accessed: 13/04/2021)

Policy T1: Highway Infrastructure

A public realm strategy for the IAMP is required to accompany development proposals, based on the following key principles:

A. The comprehensive development of the IAMP requires the following highway improvements to be delivered:
   i. upgrading of the A1290 to increase capacity;
   ii. a new vehicular bridge over the A19 to connect the IAMP with the local road network to the east;
   iii. a new bridge over the River Don to allow access to the Northern Employment Area; and
   iv. new distributor roads within the IAMP to accommodate the movement of all users.

B. Development proposals must be accompanied by a Transport Assessment to:
   i. assess which specific highways improvements are necessary to ensure the acceptability of the proposals in planning terms and to ensure comprehensive development of the IAMP; and
   ii. demonstrate how, within the area shown on the Policies Map as "*A19 and Local Road Improvements*", the development will provide suitable and safe connection to, and integration with, Highways England's proposed improvements to the Downhill Lane and Testos junctions on the A19.

C. Development proposals must:
   i. be supported by the submission of a Travel Plan designed to ensure that the development is acceptable in transport sustainability and accessibility terms; and
   ii. be implemented in accordance with the Travel Plan as approved.

D. Consent shall not be granted for development that:
   i. adversely affects the safe and efficient operation of the local or strategic highway networks; or
   ii. compromises the delivery of the highway improvements set out in criterion A; or
   iii. prejudices the comprehensive development and delivery of the IAMP as a whole.

Policy T2: Walking, Cycling and Horse Riding

A. To promote walking and cycling, development must:
   i. ensure that any junction/highway measures and any new roads are designed to safely integrate potential pedestrian and cycle movements. New routes should seek to ensure that they reflect pedestrian/cycle desire lines and are of a high quality;
   ii. ensure that roads and spaces are designed to consider the needs of all types of users so that conflict between road users and vulnerable users is minimised;
   iii. include appropriate cycling facilities, such as parking, showers and storage, as part of new developments;
   iv. include opportunities for new cycle routes and signage; and
   v. provide for improved connections along Follingsby Lane, which will be restricted to use for local access.

B. Safe access to the open space within the IAMP will be ensured for horse riding through the provision of bridleways linked to the wider bridleway network.

C. Where new routes abut agricultural land, appropriate measures to deter public access to agricultural land must be incorporated.

Policy T3: Public Transport

To promote sustainable transport, development must include:

ii. provision of enhanced bus services between the IAMP and:
   a. surrounding residential areas;

b. Heworth and Sunderland multi-modal transport interchanges; and
c. Hebburn, Jarrow, South Shields and Washington centres;

iii. bus priority measures on the key routes entering the IAMP;
iv. adequate provision for buses on the proposed new bridges over the A19 and over the River Don;
v. new bus stops and improved waiting facilities within the IAMP AAP area; and
vi. new traffic signal installations incorporating facilities to enable priority for buses.

Policy T4: Parking

A. Development must ensure that appropriate provision for car parking is provided in accordance with the Councils' standards. Development proposals must:
   i. incorporate a car parking management plan;
   ii. make provision for disabled badge parking spaces;
   iii. ensure that 25% of the total car parking provision is for the use of car-sharing only;
   iv. make provision for off-street parking through a combination of incurtilage provision and communal parking areas. On-street parking may be permitted in certain locations;
   v. ensure that sufficient provision is made for lorry parking to take account of highway safety and avoidance of congestion on the road network; and
   vi. make provision for car and bicycle electric charging points within parking areas across the site.
B. The scheme should consider the introduction of a car club facility for the IAMP site.

Policy IN1: Infrastructure Provision

In demonstrating comprehensive development under policies S1 and Del2, development proposals must show how the following infrastructure will be delivered:

i. a new electricity sub-station may be required as part of the comprehensive development of the IAMP to ensure there is sufficient energy to meet the demands of businesses locating at the IAMP.
ii. new water, gas and electric utility services must be made available to the IAMP development site from the existing utilities infrastructure in the local vicinity to enable occupiers to apply for, and obtain, utility connections to their premises. This may require connections to be made with utilities infrastructure outside of the AAP boundary.
iii. new telecommunications and broadband services networks must be provided to allow occupiers to apply for, and obtain, telecommunication connections to their premises as required.
iv. the provision of low carbon and renewable energy systems should be explored.

Policy IN2: Flood Risk and Drainage

A. A new bridge will be required over the River Don, the design of which must demonstrate that there will be no net loss in floodplain storage capacity nor an increase in maximum flood levels within adjoining properties as a consequence of the proposed works.
B. Opportunities offered by new development to reduce the causes and impacts of flooding will be encouraged. To address drainage and flood risk, development proposals must therefore be accompanied by:
   i. a detailed Flood Risk Assessment (FRA) and Water Framework Directive Assessment.
   ii. a surface water drainage strategy which complies with national design standards and local policy. The scheme promoter will be required to provide Sustainable Drainage Systems (SuDs) capable of ensuring that run-off from the site (post-development) does not exceed corresponding greenfield rates, minimises pollution, provides multifunctional benefits to wildlife, landscape and water quality and is effectively managed with clear ownership in place.

iii. evidence that sufficient capacity, both on and off-site, in the foul sewer network to support development exists. Where there is insufficient capacity, plans for the sewer upgrades must be delivered prior to the occupation of development within the IAMP.

Policy EN1: Landscape

A. To minimise the impact on landscape character and visual amenity, seek landscape enhancements, as well as to integrate buildings into the surrounding landscape setting, development proposals must:
   i. minimise the visibility of the development from the A19 and maintain an appropriate landscape buffer;
   ii. use design and landscaping measures to reduce the impact of development along public rights of way;
   iii. incorporate a landscape buffer around the development edges to integrate the development with the surrounding countryside and provide defensible boundaries for the Green Belt; and
   iv. consider the incorporation of green and brown roofs and green walls into the design of the development.

B. Development proposals must include a landscape and visual impact assessment which demonstrates an understanding of the likely significant effects of the proposed development. The assessment will influence the design of the proposals to ensure potential adverse effects are prevented or minimised.

C. The designated Ecological and Landscape Mitigation Area, as shown on the Policies Map, will provide the focus for necessary landscape impact mitigation, in addition to landscaping within the allocated employment areas.

Policy EN2: Ecology

A. To protect and enhance biodiversity, development must:
   i. avoid, minimise and mitigate or compensate any adverse impacts on biodiversity and provide net gains where possible;
   ii. maintain and enhance the River Don as a functional wildlife corridor, through improvements to its water quality and geomorphology, and through the implementation of an ecological buffer along the River Don corridor and around Local Wildlife Sites (with the exception of the new bridge crossing);
   iii. design swales and Sustainable Drainage Systems (SuDS) to take account of additional wildlife benefits;
   iv. restrict or minimise public access to areas of ecological sensitivity;
   v. create ecological links between retained and new habitat areas within and beyond the IAMP AAP area; and
   vi. secure through requirements in a DCO or planning conditions and/or planning obligations, provision for the maintenance and monitoring of appropriate mitigation and or compensation measures.

B. To support proposed development an Ecological Impact Assessment must be included as part of the Environmental Impact Assessment. This is required to ensure potential impacts are prevented or mitigated and/or compensated where mitigation is not feasible. Ecological mitigation measures must be designed in conjunction with landscape and drainage specialists (where applicable), to maximise the ecological value of landscape planting and drainage features. Proposals must include an appropriate long-term Management and Maintenance Plan that will ensure long-term ecological value is maintained.

C. The designated Ecological and Landscape Mitigation Area, as shown on the Policies Map, will provide the focus for necessary ecological mitigation and compensation measures.

Policy EN3: Green Infrastructure

A. To provide green and open spaces for recreational use, development must:
   i. incorporate a minimum 50m wide buffer from the riverbanks on both sides along the River Don (to maintain a total minimum 100m wide corridor), linking with the wider Green Infrastructure corridor to the east and west beyond the Plan boundary, and allow recreational access within this buffer where there is low risk of harm to ecological receptors;
   ii. retain and enhance existing mature trees, woodland and hedgerows around the edges of the development, along the River Don, and east of Elliscope Farm;
   iii. create green linkages along main roads through the provision of tree-lined streets and landscaped areas for public rights of way; and
   iv. incorporate informal open spaces within the IAMP AAP boundary to provide recreational and wildlife benefits and green links between habitats.

Policy EN4: Amenity

A. Proposals should not adversely impact the amenity of neighbouring occupiers and residents. Development must:
   i. take account of the amenity of surrounding uses during the construction phase and business operations;
   ii. seek to minimise disturbances caused by noise, odours or visual intrusion; and
   iii. seek to minimise the impact of noise and air pollution in line with national guidelines.
B. Where suitable mitigation measures are identified, they will be secured by planning obligations, requirements in a DCO or planning conditions.
C. A Construction Environmental Management Plan covering matters including noise, traffic and dust during the construction phase will be required.

Policy Del1: Phasing and Implementation

A. A Phasing Strategy must be submitted with any application for proposed development.
B. The Phasing Strategy must demonstrate how the comprehensive and integrated infrastructure, services and facilities that will make the scheme acceptable in planning terms will be delivered.
C. A Mitigation Strategy and a Management Strategy must be submitted with any application and each should address the following key topics: Landscape and Open Space; Ecology; Drainage; and Sustainable Transport.
D. The Phasing Strategy must demonstrate how the strategic infrastructure required for the IAMP, as identified in the Infrastructure Delivery Plan, will be delivered.
E. The approved Phasing Strategy, Mitigation Strategy and Management Strategy must be secured by DCO requirement or planning obligations.

Sunderland City Council Core Strategy and Development Plan 2015-2033[14] (Jan 2020)

The following SCC policies from the Core Strategy and Development Plan have been identified as relating to sustainability:

Strategic Policy SP1 Development strategy

1. To support sustainable economic growth and meet people's needs, the council, working with local communities, its partners and key stakeholders will:
    i. deliver at least 13,410 net new homes and create sustainable mixed communities which are supported by adequate infrastructure;
    ii. create at least 7,200 new jobs, particularly in key growth sectors;
    iii. develop at least 95ha of employment land;
    iv. deliver at least 45,400m² new comparison retail development; and
    v. ensure that sufficient physical, social and environment infrastructure is delivered to meet identified needs.
2. The spatial strategy seeks to deliver this growth and sustainable patterns of development by:
    i. supporting the sustainability of existing communities through the growth and regeneration of Sunderland's sub areas including: the Urban Core (Policy SP2); Washington (Policy SP3); North Sunderland (Policy SP4); South Sunderland (Policy SP5); and the Coalfield (Policy SP6);
    ii. delivering the majority of development in the Existing Urban Area;
    iii. emphasising the need to develop in sustainable locations in close proximity to transport hubs;
    iv. encouraging higher density development around and in close proximity to transport hubs;
    v. delivering the right homes in the right locations through the allocation of homes in the A&D Plan, the allocation of South Sunderland Growth Area and The Vaux and amending the Green Belt boundary to allocate Housing Growth Areas;
    vi. protecting Sunderland's character and environmental assets including Settlement Breaks, greenspaces, Open Countryside and Green Belt; and
    vii. minimising and mitigating the likely effects of climate change.

Strategic Policy SP7 Healthy and safe communities

The council will seek to improve health and wellbeing in Sunderland by:

1. working with the NHS to improve health outcomes, particularly in areas with the poorest health and reduce health inequalities generally;
2. protecting existing health facilities and/or supporting the provision of new or improved facilities (Policy VC5);
3. promoting and facilitating active and healthy lifestyles;
4. supporting the integration of health facilities and services with other community uses (education, sport, cultural and leisure) through multi-purpose buildings;
5. managing the location/number of and access to unhealthy eating outlets (Policy VC4);
6. ensuring that new developments:-
    i. are age friendly, inclusive, safe, attractive and easily accessible on foot or by bicycle;
    ii. have a strong sense of place which encourages social interaction;

[14] Sunderland City Council Core Strategy and Development Plan 2015-2033 (Jan 2020) www.sunderland.gov.uk/media/22171/Core-Strategy-and-Development-Plan-2015-2033/pdf/CSDP_2015-2033.pdf (Accessed 13/04/2021)

iii. are designed to promote active travel and other physical activities through the arrangement of buildings, location of uses and access to open space;
iv. promote improvements and enhance accessibility to the city's natural, built and historic environments;
v. do not have unacceptable adverse impacts upon amenity which cannot be adequately mitigated (Policies HS1 and HS2);
vi. appropriately address any contaminated land to an acceptable level (Policy HS3); and
vii. submit a Health Impact Assessment (HIA) as part of any application for large-scale development. Where significant adverse health impacts are identified, development should be resisted unless appropriate mitigation can be provided.

Policy HS1 Quality of life and amenity

1. Development must demonstrate that it does not result in unacceptable adverse impacts which cannot be addressed through appropriate mitigation, arising from the following sources:
   i. air quality;
   ii. noise;
   iii. dust;
   iv. vibration;
   v. odour;
   vi. emissions;
   vii. land contamination and instability;
   viii. illumination;
   ix. run-off to protected waters;
   x. traffic;
2. development must ensure that the cumulative impact would not result in unacceptable adverse impacts on the local community; and
3. development will not normally be supported where the existing neighbouring uses would unacceptably impact on the amenity of future occupants of the proposed development.

Policy HS3 Contaminated land

When development is considered to be on contaminated land, development should:

1. ensure all works, including investigation of the nature of any contamination, can be undertaken without the escape of contaminants which could cause unacceptable risk to health or to the environment;
2. identify any existing contaminated land and the level of risk that contaminants pose in relation to the proposed end use and future site users are adequately quantified and addressed;
3. ensure appropriate mitigation measures are identified and implemented which are suitable for the proposed use and that there is no unacceptable risk of pollution within the site or in the surrounding area; and
4. demonstrate that the developed site will be suitable for the proposed use without risk from contaminants to people, buildings, services or the environment including the apparatus of statutory undertakers.

Policy HS4 Health and safety executive areas and hazardous substances

1. Development within the specified distances from sites identified as 'notifiable installations', must take account of any risks involved and the need for appropriate separation between hazardous installations and incompatible uses.

2. The development of new notifiable installations must be located in appropriate areas and take account of any risks involved and the need for appropriate separation between hazardous installations and incompatible uses.
3. Development involving the introduction, storage or use of hazardous substances which would create potential risk and could not be acceptably mitigated against, will not be permitted.

Policy BH1 Design quality

To achieve high quality design and positive improvement, development should:

1. create places which have a clear function, character and identity based upon a robust understanding of local context, constraints and distinctiveness;
2. maximise opportunities to create sustainable, mixed-use developments which support the function and vitality of the area in which they are located;
3. be of a scale, massing, layout, appearance and setting which respects and enhances the positive qualities of nearby properties and the locality;
4. retain acceptable levels of privacy and ensure a good standard of amenity for all existing and future occupiers of land and buildings;
5. promote natural surveillance and active frontages, including the provision of appropriate lighting, to assist in designing out crime;
6. clearly distinguish between public and private spaces, including appropriate use of hard and soft boundary treatments which reflect the character of the area;
7. create visually attractive and legible environments through provision of distinctive high quality architecture, detailing, building materials;
8. provide landscaping as an integral part of the development including retaining landscape features and reflecting surrounding landscape character and where appropriate and viable, the enhancement and upgrading of public realm and existing green infrastructure;
9. maximise the opportunities for buildings and spaces to gain benefit from sunlight and passive solar energy;
10. avoid, where possible, disruption to established views of important buildings, structures and landscape features;
11. in the case of tall buildings, form a positive relationship with the skyline and topography of the site and the surrounding area;
12. create safe, convenient and visually attractive areas for servicing and parking which does not dominate the development and its surroundings;
13. encourage durability and adaptability throughout the lifetime of the development to accommodate a range of uses; and
14. from 1 April 2021, meet national spaces standards as a minimum (for residential).

Large-scale developments should be supported by detailed Masterplans or development frameworks, and where appropriate, design codes.

Policy BH2 Sustainable design and construction

Sustainable design and construction should be integral to development. Where possible, major development (as defined in the 2021 Framework) should:

1. maximise energy efficiency and integrate the use of renewable and low carbon energy;
2. reduce waste and promote recycling during construction and in operation;
3. conserve water resources and minimise vulnerability to flooding;
4. provide details of the type of materials to be used at the appropriate stage of development;
5. provide flexibility and adaptability, where appropriate, allowing future modification of use or layout, facilitating future refurbishment and retrofitting;

6. include opportunities to incorporate measures which enhance the biodiversity value of development, such as green roofs;
7. include a sustainability statement setting out how the development incorporates sustainable resource management and high environmental standards; and
8. maintain an appropriate buffer between sensitive development and existing waste water treatment works to ensure amenity and operational continuity, in accordance with Government Code of Practice guidance.

Policy BH3 Public realm

Existing and proposed areas of public realm will:

1. create attractive, safe, legible, functional and accessible public spaces;
2. be constructed of quality, sustainable and durable materials which enhance the surrounding context; and
3. where appropriate, incorporate public art in development

Policy NE1 Green and blue infrastructure

1. To maintain and improve the Green Infrastructure Network through enhancing, creating and managing multifunctional greenspaces and bluespaces that are well connected to each other and the wider countryside, development should:
    i. incorporate existing and/or new green infrastructure features within their design and to improve accessibility to the surrounding area;
    ii. address corridor gaps and areas of corridor weakness where feasible;
    iii. support the management of existing wildlife corridors, including reconnecting vulnerable and priority habitats (see policy NE2);
    iv. apply climate change mitigation and adaptation measures, including flood risk and watercourse management;
    v. link walking and cycling routes to and through the corridors, where appropriate;
    vi. include and/or enhance formal and natural greenspace and bluespace provision;
    vii. protect and enhance landscape character;
    viii. have regard to the requirements of the Green Infrastructure Delivery Plan and make contributions proportionate to their scale towards the establishment, enhancement and on-going management; and
    ix. protect, enhance and restore watercourses, ponds, lakes and water dependent habitats.
2. Development that would sever or significantly reduce green infrastructure will not normally be permitted unless the need for and benefits of the development demonstrably outweigh any adverse impacts and suitable mitigation and/or compensation is provided.

Policy NE2 Biodiversity and geodiversity

1. Where appropriate, development must demonstrate how it will:
    i. provide net gains in biodiversity; and
    ii. avoid (through locating on an alternative site with less harmful impacts) or minimise adverse impacts on biodiversity and geodiversity in accordance with the mitigation hierarchy.
2. Development that would have an impact on the integrity of European designated sites that cannot be avoided or adequately mitigated will not be permitted other than in exceptional circumstances. These circumstances will only apply where there are:
    i. no suitable alternatives;
    ii. imperative reasons of overriding public interest;

iii. necessary compensatory provision can be secured to ensure that the overall coherence of the Natura 2000 network of European sites is protected; and
iv. development will only be permitted where the council is satisfied that any necessary mitigation is included such that, in combination with other development, there will be no significant effects on the integrity of European Nature Conservation Sites.

3. Development that would adversely affect a Site of Special Scientific Interest, either directly or indirectly, will be required to demonstrate that the reasons for the development, including the lack of an alternative solution, clearly outweigh the nature conservation value of the site and the national policy to safeguard the national network of such sites.
4. Development that would adversely affect a Local Wildlife Site or Local Geological Site, either directly or indirectly, will demonstrate that: i. there are no reasonable alternatives; and ii. the case for development clearly outweighs the need to safeguard the intrinsic value of the site.
5. Development that would adversely affect the ecological, recreational and/or educational value of a Local Nature Reserve that will demonstrate:
   i. that there are no reasonable alternatives; and
   ii. the case for development clearly outweighs the need to safeguard the ecological, recreational and/or educational value of the site.
6. Development that would have a significant adverse impact on the value and integrity of a wildlife corridor will only be permitted where suitable replacement land or other mitigation is provided to retain the value and integrity of the corridor.

Policy NE3 Woodlands/hedgerows and trees

To conserve significant trees, woodlands and hedgerows, development should:

1. follow the principles below to guide the design of development where effects to ancient woodland, veteran/aged trees and their immediate surroundings have been identified:
   i. avoid harm;
   ii. provide unequivocal evidence of need and benefits of proposed development;
   iii. provide biodiversity net gain;
   iv. establish likelihood and type of any impacts;
   v. implement appropriate and adequate mitigation and compensation;
   vi. provide adequate buffers; and
   vii. provide adequate evidence to support proposals;
2. retain, protect and improve woodland, trees subject to Tree Preservation Orders (TPOs), trees within conservation areas, and 'important' hedgerows as defined by the Hedgerows Regulations 1997;
3. give consideration to trees and hedgerows both on individual merit as well as their contribution to amenity and interaction as part of a group within the broader landscape setting; and
4. ensure that where trees, woodlands and hedgerows are impacted negatively by proposed development, justification, mitigation, compensation and maintenance measures are provided in a detailed management plan.

Policy NE4 Greenspace

The council will protect, conserve and enhance the quality, community value, function and accessibility of greenspace and wider green infrastructure, especially in areas of deficiency identified in the council's Greenspace Audit and Report by:

1. designating greenspaces in the A&D Plan;
2. requiring development to contribute towards the provision of new and/or enhanced greenspace where there is an evidenced requirement;
3. requiring all major residential development to provide:

   i. a minimum of 0.9ha per 1000 bedspaces of useable greenspace on site; unless
   ii. a financial contribution for the maintenance/upgrading to neighbouring existing greenspace is considered to be more appropriate;
4. refusing development on greenspaces which would have an adverse effect on its amenity, recreational or nature conservation value unless it can be demonstrated that:
   i. the proposal is accompanied by an assessment that clearly demonstrates that the provision is surplus to requirements; or
   ii. a replacement facility which is at least equivalent in terms of usefulness, attractiveness, quality and accessibility, and where of an appropriate quantity, to existing and future users is provided by the developer on another site agreed with the council prior to development commencing; or
   iii. replacement on another site is neither practicable or possible an agreed contribution is made by the developer to the council for new provision or the improvement of existing greenspace or outdoor sport and recreation facilities and its maintenance within an appropriate distance from the site or within the site.

The impact of development on greenspace provision will need to be considered on a case-by-case basis in terms of its potential impact on Natura 2000 (N2K) sites.

Policy NE6 Green Belt

1. The Green Belt (as designated on the Policies Map) in Sunderland will serve the following purposes:
   i. check the unrestricted sprawl of the built up areas of the city;
   ii. assist in safeguarding the city's countryside from further encroachment; iii. assist in the regeneration of the urban area of the city;
   iii. preserve the setting and special character of Springwell Village and Newbottle Village; and
   iv. prevent the merging of Sunderland with Tyneside, Washington, Houghton-leSpring and Seaham, and the merging of Shiney Row with Washington, Chester-leStreet and Bournmoor.
2. In assessing development proposals, development that is inappropriate in the Green Belt will not be approved except in very special circumstances.
3. Development in the Green Belt will be permitted where the proposals are consistent with the exception list in national policy subject to all other criteria being acceptable.
4. Proposals in the Green Belt for increased opportunities for access to the Open Countryside and which provide opportunities for beneficial use such as outdoor sport and recreation, appropriate to the Green Belt, will be encouraged where it will not harm the objectives of the Green Belt and recognise the important role of the Green Belt as a biodiversity resource.

Policy WWE1 Decentralised, renewable and low carbon energy

1. The development of decentralised, renewable and low carbon energy will be supported subject to satisfactory resolution of all site specific constraints as follows:
   i. decentralised, renewable and low-carbon energy development should be located and designed to avoid unacceptable significant adverse impacts on landscape, wildlife, heritage assets and amenity;
   ii. appropriate steps should be taken to mitigate any unacceptable significant adverse impacts, such as noise nuisance, flood risk, shadow flicker, interference with telecommunications, air traffic operations, radar and air navigational installations through careful consideration of location, scale, design and other measures; and
   iii. any adverse cumulative impacts of proposals.

2. Development that can provide combined heat and power must demonstrate that due consideration has been given to the provision of any heat produced as an energy source to any suitable adjacent potential heat customers.

Policy WWE2 Flood risk and coastal management

1. To reduce flood risk and ensure appropriate coastal management, development:
    i. should follow the sequential approach to determining the suitability of land for development, directing new development to areas at the lowest risk of flooding and where necessary applying the exception test, as outlined in national planning policy;
    ii. will be required to demonstrate, where necessary, through an appropriate Flood Risk Assessment (FRA) that development will not increase flood risk on site or elsewhere, and if possible reduce the risk of flooding;
    iii. will be required to include or contribute to flood mitigation, compensation and/or protection measures, where necessary, to manage flood risk associated with or caused by the development;
    iv. should comply with the Water Framework Directive by contributing to the Northumbria River Basin Management Plan;
    v. will maintain linear coastal flood defences north from Hendon Sea Wall to Seaburn, and managed coastal retreat on the Heritage Coast and north of Seaburn;
    vi. which would adversely affect the quantity of surface or groundwater flow or ability to abstract water must demonstrate that no significant adverse impact would occur, or mitigation can be put in place to minimise this impact; and
    vii. of additional river flood defences must demonstrate that the proposal represents the most sustainable response to a particular threat

Policy WWE3 Water management

Development must consider the effect on flood risk, on-site and off-site, commensurate with the scale and impact. Development must:

1. be accompanied by a Flood Risk Assessment (where appropriate), to demonstrate that the development, including the access, will be safe, without increasing or exacerbating flood risk elsewhere and where possible will reduce flood risk overall;
2. demonstrate that they pass the Sequential Test and if necessary the Exceptions Test in Flood Zones 2 and 3;
3. discharge at greenfield run-off rates for the 1 in 1 and 1 in 100 flood events plus the relevant climate change allowance for greenfield and brownfield sites in accordance with the latest Local Flood Risk Management Strategy;
4. incorporate a Sustainable Drainage System (SuDS) to manage surface water drainage. Where SuDS are provided, arrangements must be put in place for their whole life management and maintenance;
5. separate, minimise and control surface water run-off by discharging in the following order:
    i. to an infiltration or soak away system;
    ii. to a watercourse (open or closed); iii. to a surface water sewer. However, if sites are within 250m of a tidal estuary or the sea, surface water can be discharged directly);
6. ensure adequate protection where sites may be susceptible to over land flood flows (as shown in the Strategic Flood Risk Assessment) or lie within a Surface Water Risk Area (as shown on the Environment Agency flood maps);
7. incorporate allowance for climate change in accordance with the latest Environment Agency Guidance;

8. make developer contributions, where needed, to ensure that the drainage infrastructure can cope with the capacity needed to support proposed new development;
9. demonstrate control of the quality of surface water run-off during construction and for the lifetime of the development. For all developments the management of water should be an intrinsic part of the overall development; and
10. not have a detrimental impact on the city's water resources, including the Magnesian Limestone aquifer and its ground source protection zones. Development along the River Wear and coast should take account of the Northumbria River Basin Management Plan, to deliver continuing improvements in water quality

Policy WWE4 Water quality

The quantity and quality of surface and groundwater bodies and quality of bathing water shall be protected and where possible enhanced in accordance with the Northumbria River Basin Management Plan.

1. Water quality assessments will be required for:
    i. any physical modifications to a watercourse; and
    ii. any development which could indirectly, adversely affect water bodies.
2. Development that discharges water into a watercourse will be required to incorporate appropriate water pollution control measures.
3. Development that incorporates infiltration based SuDS will be required to incorporate appropriate water pollution control measures.
4. Development adjacent to, over or in, a main river or ordinary watercourse should consider opportunities to improve the river environment and water quality by:
    i. naturalising watercourse channels;
    ii. improving the biodiversity and ecological connectivity of watercourses;
    iii. safeguarding and enlarging river buffers with appropriate habitat; and
    iv. mitigating diffuse agricultural and urban pollution.

Policy WWE5 Disposal of foul water

1. Development should utilise the following drainage hierarchy: i. connection to a public sewer; ii. package sewage treatment plant (which can be offered to the Sewerage Undertaker for adoption); then iii. septic tank.
2. Development involving the use of non-main methods of drainage in areas where public sewerage exists or the use of Cess Pits will not be permitted.
3. Development of new or extensions/ improvements to existing waste water, sludge or sewage treatment works, will normally be supported unless the adverse impact of the development significantly outweighs the need for greater capacity.
4. Where the development involves the disposal of trade effluent a foul Water Management Plan/drainage assessment will be required to demonstrate how the disposal of foul water is undertaken following the disposal hierarchy. This should include a trade effluent consent if connected to the sewerage system. Trade effluent is any liquid produced in the course of any trade or industry including car washes

Policy WWE6 Waste management

Development that encourages and supports the minimisation of waste production, and the re-use and recovery of waste materials including, for example, re-cycling, composting and Energy from Waste will normally be supported. Proposals for waste management facilities to deal with waste arisings will be encouraged based upon the following principles:

1. managing waste through the waste hierarchy in sequential order. Sites for the disposal of waste will only be permitted where it meets a need which cannot be met by treatment higher in the waste hierarchy
2. promoting the opportunities for on-site management of waste where it arises and encouraging co-location of waste developments that can use each other's waste materials;
3. ensuring that sufficient capacity is located within the city to accommodate forecast waste arisings of all types during the plan period, reducing the reliance on other authority areas;
4. supporting delivery of the South Tyne and Wear Joint Municipal Waste Management Strategy;
5. facilitating the development of recycling facilities across the city including civic amenity sites and small recycling 'bring' banks to ensure there is sufficient capacity and access for the deposit of municipal waste for re-use, recycling and disposal;
6. facilitating the development of a network of small scale local waste management facilities in accessible locations, and effective methods of waste management such as suitable facilities to separate or store different types of waste, including materials that are required to be separated for kerbside collection schemes;
7. ensuring new waste developments are located and designed to avoid unacceptable adverse impacts on landscape, wildlife, heritage assets and amenity;
8. working collaboratively with neighbouring local authorities with responsibilities for waste and other local authorities where waste import/export relationships exist. This will ensure a co-operative cross boundary approach to waste management is established and maintained; and
9. addressing to an acceptable standard the potential cumulative impacts of any waste development and the way it relates to existing developments.

Policy WWE7 Waste facilities

Development for new built waste facilities should be focused on previously developed employment land (excluding land within Primary Employment Sites) and will be required to meet the following criteria:

1. demonstrate the need for the facility, if there is a clear conflict with other policies of the Development Plan;
2. all waste processes and operations must be contained, processed and managed within buildings unless there are acceptable operational reasons why these processes cannot be contained within buildings;
3. proposals must accord with all other policies in relation to the protection of the environment and public amenity or demonstrate that other material considerations outweigh any policy conflict;
4. consideration will be given to the potential impacts of waste management proposals from:
    i. harmful materials entering the public highway;
    ii. generation of odours, litter, light, dusts, flies, rodents, birds and other infestation;
    iii. noise, excessive traffic and vibration;
    iv. risk of serious fires through combustion of accumulated wastes;
    v. harm to water quality and resources and flood risk management;
    vi. land instability;
    vii. land use conflict; and
    viii. where necessary, mitigation measures should be identified to ameliorate any negative impacts to an acceptable level.

Strategic Policy SP10 Connectivity and transport network

To improve connectivity and enhance the city's transport network, the council, working with its partners and utilising developer contributions will seek to:

1. deliver the following new highways schemes and initiatives:
    i. Sunderland Strategic Transport Corridor (remaining phases);
    ii. Ryhope to Doxford Park Link Road;
    iii. Central Route section of Coalfield Regeneration Route; and
    iv. Improvements to the mainline and key junctions on the A19, including providing access to the IAMP;
2. improve the following transport routes and bus corridors to encourage walking and cycling and to reduce congestion:
    i. A183 Chester Road;
    ii. A690 Durham Road;
    iii. A1231 Sunderland Highway (west of the A19);
    iv. A1018 Newcastle Road;
    v. B1522 Ryhope Road;
    vi. Washington Road/North Hylton Road (east of A19); and
    vii. A182 Houghton/Hetton Road.
3. improve the operating conditions for buses, in particular through securing improvements to the major bus corridors identified above; and exploring park and ride opportunities;
4. support improvements to the Metro and rail network including new stations and routes where deliverable;
5. safeguard the following disused railway alignments for future use:
    i. Leamside line; and
    ii. South Hylton to Penshaw;
6. 6. improve and extend the cycle network.

Policy ST2 Local road network

1. The Local Road Network will be protected for safe and efficient movement in accordance with the following road hierarchy:
    i. Distributor Roads;
    ii. Category 1 Roads;
    iii. Category 2A Roads; and
    iv. Category 3 Roads.
2. To ensure that development has no unacceptable adverse impact on the Local Road Network, proposals must ensure that:
    i. where a new vehicular access is accepted in principle, the number of access points will be kept to a minimum and new access points will be designed and constructed in accordance with the current highway design standards;
    ii. they have safe and adequate means of access, egress and internal circulation/turning arrangements for all modes of transport relevant to the proposal;
    iii. where an existing access is to be used, substandard accesses will be improved and/or upgraded in accordance with the current standards for the category of road;
    iv. they are assessed and determined against current standards for the category of road having regard to the capacity, safety and geometry of the highway network;
    v. they have safe and convenient access for sustainable transport modes relevant to its location; and
    vi. they will not create a severe impact on the safe operation of the highway network; resulting in potential risk to all highway users with specific consideration given to vulnerable road users.

Policy ST3 Development and transport

Development should:

1. provide safe and convenient access for all road users, in a way which would not:
    i. compromise the free flow of traffic on the public highway, pedestrians or any other transport mode, including public transport and cycling; or
    ii. exacerbate traffic congestion on the existing highway network or increase the risk of accidents or endanger the safety of road users including pedestrians, cyclists and other vulnerable road users;
2. incorporate pedestrian and cycle routes within and through the site, linking to the wider sustainable transport network;
3. submit an appropriate Transport Assessment/Transport Statement and a Travel Plan. This must demonstrate that appropriate mitigation measures can be delivered to ensure that there is no detrimental impact to the existing highway;
4. include a level of vehicle parking and cycle storage for residential and non-residential development, in accordance with the council's parking standards;
5. provide an appropriate level of electric vehicle parking and charging infrastructure for commercial and non-residential development to suit site specific requirements, and make provision for the installation of home charging apparatus on major residential schemes; and
6. safeguard the existing network of Definitive Public Rights of Way. If this cannot be accommodated, then a diversion and/or alternative route shall be provided.

Sunderland Low Carbon Framework[15]

This Framework has been prepared by the 2030 Shadow Board, made up of partner organisations across Sunderland working together to achieve our collective vision and objectives. It is a high-level strategy that demonstrates the city's commitment to reducing its carbon impact.

Strategic Priority 3: Create an energy efficient built environment

Objective

Improve energy efficiency of existing homes and buildings and work towards zero carbon for new homes and buildings.

Opportunities

1. improving the energy performance of homes and saving heating costs will help to eliminate fuel poverty;
2. improving energy efficiency of commercial premises will reduce running costs for businesses and make commercial buildings easier to lease;
3. introducing cleaner and greener energy for housing will improve air quality and provide purity of supply and cost

Strategic Priority 4: Develop renewable energy generation and storage

Objective

Develop renewable energy generation and storage, and renewable/district heating schemes

Opportunities

1. improving the energy performance of homes and saving heating costs will help to eliminate fuel poverty;
2. introducing cleaner and greener energy for housing and industry will improve air quality;
3. developing varied local sources of energy will help to ensure that the city has power certainty/security

Strategic Priority 5: Low carbon and active transport

Objective

Develop low carbon and active transport modes such as walking, cycling, rail, Metro, electric and innovative technologies for buses and private vehicles, and help make public transport a more attractive choice.

Opportunities

1. More public transport options for local residents and increased accessibility;
2. Safer and more attractive conditions for walking and cycling;
3. Improved air quality and environment;
4. Healthier and more active lifestyles supported;
5. Contributing to Sunderland being a better and more attractive place to live, work and invest in

[15] Sunderland Low Carbon Framework https://www.sunderland.gov.uk/media/22959/Sunderland-Low-Carbon-Framework/pdf/Sunderland_Low_Carbon_Framework1.pdf?m=637461416504170000 (Accessed 21/06/2021).

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