

NORTH BIERLEY PHASE 2, KIRKLEES

SUSTAINABILITY STATEMENT



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NORTH BIERLEY: SUSTAINABILITY STATEMENT

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Date **28/10/21**

EXECUTIVE SUMMARY

This sustainability statement has been developed to support the outline planning application for the proposed North Bierley Phase 2 development. This statement describes the sustainability aspirations and strategies for the design, construction and operation of the scheme, including the legislative requirements for the site and stakeholders involved.

Keyland Developments employ a 'Six Capitals' approach to deliver sustainable development, which has been used to inform the strategies proposed for the North Bierley development. The 'Six Capitals' model provides a strong model of sustainability which places an emphasis on living within the limits of the natural environment and developing strategies that grow all capitals; natural, social, human, intellectual, manufactured and financial. The objective is to improve value through the 'Six Capitals' and deliver benefits to North Bierley, its occupants and wider stakeholders.

The North Bierley Phase 2 development can deliver approximately 12,000 sqm of high-quality employment space leading to the creation of a significant number of new jobs. A sustainability strategy and delivery framework has been developed using the 'Six Capitals' model with objectives, key performance indicators (KPIs) and performance targets where appropriate for this outline planning application. This has enabled the project team to develop strategies to address the key drivers, such as local planning policies, and target high development standards across each of the capitals.

This sustainability statement is structured under a number of themes, and summarises how the sustainability aspirations will be delivered by a series of strategies to address key environmental, social and economic issues and Kirklees Council planning policy. Under each theme is a summary of the main planning policies and objectives, a list of KPIs and performance targets as well as an overview of the proposed strategies employed to address these as part of this outline application. Due to the outline nature of this application, all strategies proposed within this statement are to be further explored during the next design stages with details confirmed within the reserved matters submission(s).

An overview of the development proposals is provided in the diagram on the next page.

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**Key sustainability strategies for the North Bierley development mapped across the illustrative masterplan.
The colours indicate the six capitals to which the strategies relate (see Figure 3).**

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2 INTRODUCTION

This sustainability statement has been developed to support the outline planning application for the proposed North Bierley Phase 2 development site at the now disused Waste Water Treatment Works located at the interchange of the M606 and J26 of the M62. The site is located within the local authority of Kirklees Council. This statement describes the sustainability aspirations and strategies for the design, construction and operation of the scheme, including the legislative requirements for the site and stakeholders involved. It is structured under a number of themes, using the 'Six Capitals' model for sustainability, and summarises how the sustainability aspirations will be delivered by a series of strategies to address key environmental, social and economic issues and planning policy.

The sustainability statement addresses the areas of the Kirklees Council Local Information Requirements that are required to be submitted as part of any planning application and the key policies in various sections of the Local Plan. This also includes where aspects will be addressed further during the next stages and submitted as part of the reserved matters application. This document draws on aspects of the Planning Support Statement, Design and Access Statement (DAS) and other technical reports and should be read in conjunction with these documents. The document is structured as follows:

- ***The Development*** – description of current site, proposed development, vision and sustainability strategy and framework themes, objectives, KPIs and targets and stakeholder mapping.
- ***Regulatory and Policy Context*** – summary of review of key regulation and local policy relevant to the development.
- ***Each Theme of The Sustainability Statement*** – summary of the drivers and overarching strategy to each theme. Due to the level of design completed for the outline application, varying levels of detail are provided across the themes.

3 THE DEVELOPMENT

3.1 Existing Site

The site is located at the southern end of the M606 which runs along the south western boundary of the site and by J26 of the M62 which runs along its south eastern boundary, and is located at a previously used Waste Water Treatment Works. The site is approximately 6 miles north-east of Huddersfield and within 4 miles of Mirfield, Dewsbury, Batley, Birstall and Cleckheaton. 3. The site measures approximately 7 hectares and is sited adjacent to the approved 'Interchange 26' development. A Google maps image of the site is presented below.



Figure 1: Site plan

There is an agreement in place between KeyLand and Opus North to provide both access and servicing from the approved development into this 'Phase 2' area. Access would utilise a new estate road being provided on site and would also take access from Cliff Hollins Lane / Mill Carr Hill Road.

This proposed development would effectively be an extension to the approved scheme and would utilise many of the same utilities connections and solutions that were established through the original outline permission.

Due to previous functions and uses of the land within the site area such as for mining and waste water treatment, several ground condition restraints have been identified which are addressed within the site design and layout.

3.2 The Development

Keyland Developments (KD) are proposing a commercial development for the site to include approximately 12,000 sq ft of employment space. Aligned with the adjacent consented development, a 'mid-box' logistics or manufacturing based development is intended. It is currently proposed to provide this space in one single unit, although this will be confirmed in later stages beyond this outline stage application. The site is located within Kirklees Council's ES7 allocated area for employment space and is therefore in alignment with local priorities for land use within the district.

The 12,000 sqm of employment space proposed for the site will lead to the creation of valuable new jobs for the local area as well as environmental enhancements delivered through the site design.

3.3 Vision, Themes, Objectives, KPIs and Targets

3.3.1 The Team

Keyland Development Ltd (KD) is a wholly owned subsidiary of Kelda Group and a sister company of Yorkshire Water. Established in 1987, KD operates across the region and has a successful track record of regenerating surplus land and property from Yorkshire Water's portfolio. KD are a major landowner and their projects cover a range of different scales across different sectors including residential and commercial. KD overcomes barriers to development across the North of England to facilitate the regeneration of disused land.

3.3.2 Vision and Informed Approach

KD's values, model and approach to delivering exceptional places are core to everything Keyland do. The values drive KD's approach to development using the 'Six Capitals' philosophy, summarised in the diagram below. KD challenges itself to live by these values in both the way they and their suppliers behave and the developments they create for society.

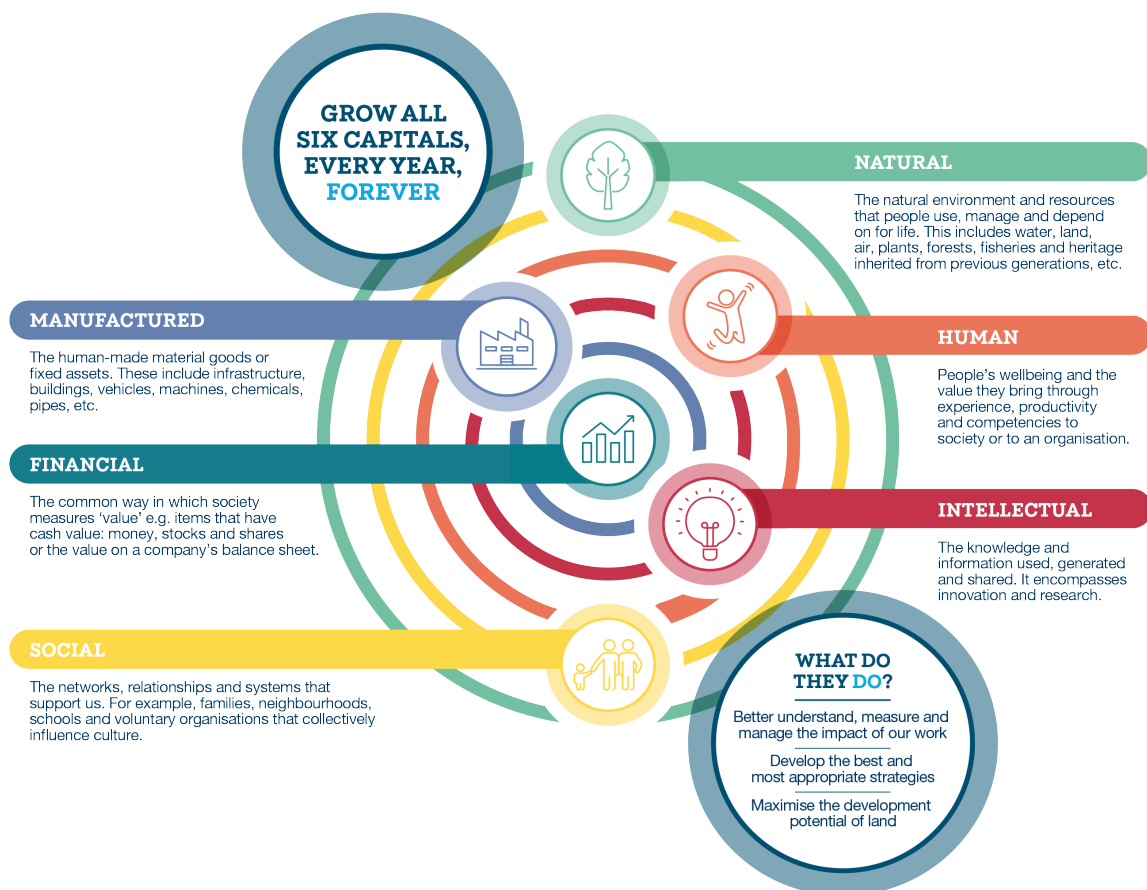


Figure 2: Overview of Keyland Developments' Six Capitals approach

The 'Six Capitals' approach to sustainable development is more than a philosophy; its purpose is to change the starting point of every project. The 'Six Capitals' provides a strong model of sustainability which places an emphasis on living within the limits of the natural environment and developing strategies that grow all capitals. These form part of KD's 'six capitals' approach to deliver sustainable development and align with Kelda's (KD's parent company) overarching 'Total Impact' philosophy.

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A sustainability strategy and delivery framework have been developed to translate the project vision into themes using the 'Six Capitals' model along with objectives, key performance indicators (KPIs) and targets where appropriate for the North Bierley development at this outline planning application stage.

The targets have been drawn from KD corporate drivers/targets, national to local best practice studies and standards, Kirklees Council policy and sustainability benchmarking systems such as BREEAM and the WELL Building Standard.

This has enabled KD and their project team to develop strategies to address the key drivers, such as Kirklees Council policies, and target development standards across each of the natural, social, human, intellectual, manufactured and financial capitals. These cover aspects such as biodiversity, material use and waste management, water consumption, energy consumption, carbon dioxide (CO₂) emissions, accessibility, health and wellbeing, skills and employability, smart infrastructure, transport and mobility, resilient assets and economic growth.

This sustainability statement provides detail structured under key themes covering the main Kirklees policies addressed, the project objectives, a list of KPIs, targets and an overview of the proposed strategies employed to address these as part of this outline application. This also includes where aspects will be addressed further during the next stages and submitted as part of the reserved matters application. The sustainability statement draws on aspects of the Design and Access Statement (DAS), Planning Support Statement and other technical planning reports and should be read in conjunction with these documents.

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The diagram below shows how this ‘six capitals’ approach has informed the themes of this sustainability statement.

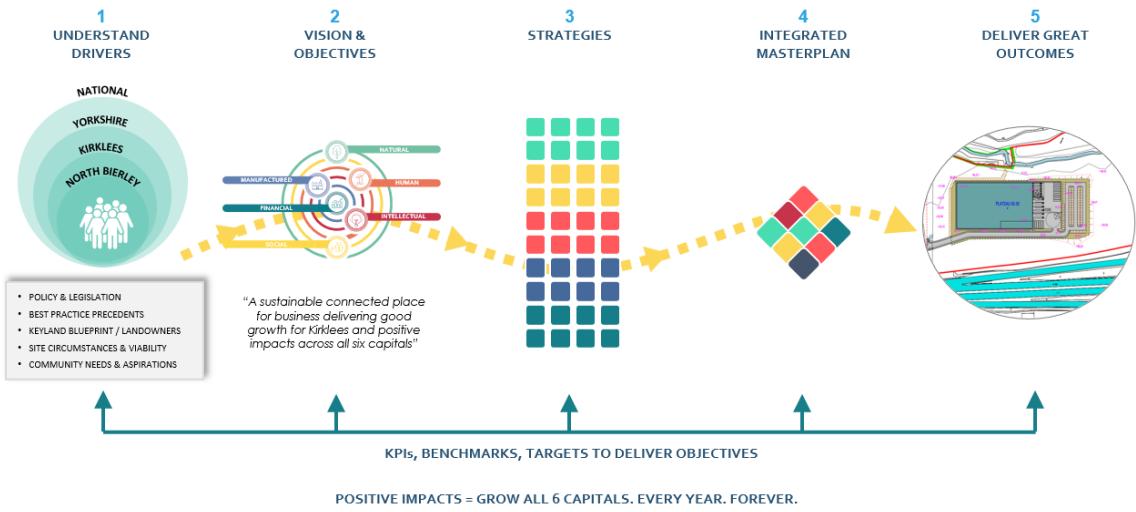


Figure 3: Keyland Developments’ Six Capitals approach to inform the themes of this sustainability statement

3.3.3 Sustainability Strategy and Framework Themes, Objectives, KPIs and Targets

The following provides a summary of the North Bierley sustainability strategy and framework objectives for each theme. These are at the core of the development and underpin the technical work which has been carried out ahead of the planning application. The KPIs and targets are included under each theme within the next section of this sustainability statement.

Table 1 Sustainability Strategy and Framework Themes and Objectives

	BIODIVERSITY Objective: Support biodiversity across the development by integrating with surrounding habitats and increasing the ecological value of the site.
	MATERIALS Objective: Promote sustainable material use and minimise waste generated during construction and operation.
	WATER Objective: Maximise water efficiency across the site through reducing consumption and exploring alternative sources where possible.
	ENERGY & CARBON Objective: Minimise energy consumption and carbon emissions from the development through employing a hierarchical approach to energy.
	ACCESSIBILITY Objective: Ensure the development is universally accessible.
	SKILLS & EMPLOYABILITY Objective: Support training and job opportunities throughout the project lifecycle.
	HEALTH & WELLBEING Objective: Embrace active design and promote high quality internal environments to support a healthy work environment.
	SMART INFRASTRUCTURE Objective: Monitor resource consumption and operations to support a programme of continuous improvement to achieve sustained levels of sustainable performance.
	TRANSPORT & MOBILITY Objective: Promote sustainable transport and mobility options for all staff and visitors.
	RESILIENT ASSETS Objective: Adopt adaptive design approaches and design for the future climate to support long-term resilience.
	ECONOMIC GROWTH Objective: Support local economic growth through local investment and job creation, during both construction and operation.

4 REGULATORY AND POLICY CONTEXT

The North Bierley development can contribute to delivering local policy objectives, helping to secure a sustainable future. Further to a review, the following section outlines the main regulatory and planning policy requirements regarding sustainable development that are applicable to the proposed North Bierley Phase 2 development site that must be met in order to be considered suitable for planning permission.

4.1 National policy

4.1.1 National planning policy framework

The National Planning Policy Framework (NPPF, 2021) sets out planning policies for England and is a key part of the Government's reform of the planning system, which seeks to make planning more accessible.

It is supplemented by national Planning Practice Guidance (PPG) and together these provide a framework of economic, environmental and social planning policies, setting out what sustainable development means in practice and how the planning system can contribute to its achievement.

4.1.2 The Building Regulations Approved Document Part L, Current Requirements: Part L 2013 Incorporating 2016 Amendments

Part L of the Building Regulations is the mechanism by which government is driving reductions in the regulated CO₂ emissions from new buildings. Nationally, new buildings are currently required to comply with the 2013 edition of Part L2A (for new buildings other than dwellings) of the Building Regulations, updated in 2016.

In order to comply with Criterion 1 of these regulations energy modelling is required to be performed, demonstrating that the predicted carbon dioxide emissions (BER, Building CO₂ Emission Rate) of the development proposals are below the established Target Emissions Rate (TER) as defined by the established methodology.

Other requirements include Criterion 2 to 5 as follows: -

- Criterion 2: the performance of the individual fabric elements and the fixed building services of the building should achieve reasonable overall standards of energy efficiency,
- Criterion 3: demonstrate that the building has appropriate passive control measures to limit the effect of heat gains on indoor temperatures in summer, irrespective of whether the building has mechanical cooling.
- Criterion 4: the performance of the building, as built, should be consistent with the BER rate.
- Criterion 5: the necessary provisions for enabling energy-efficient operation of the building should be put in place.

Part L2A sets out limiting standards for the fabric elements of the building. However, achievement of the TER is likely to need better fabric performance than those given.

Part L2A Table 3 Limiting Fabric parameters	Area weighted average values
Roof	0.25 W/(m ² K)
Wall	0.35 W/(m ² K)
Floor	0.25 W/(m ² K)
Windows, roof windows, roof-lights, curtain walling & pedestrian doors	2.2 W/(m ² K)
High-usage entrance doors	3.5 W/(m ² K)
Air permeability	10.0m ³ /(hm ²) at 50PA

Table 2: Part L limiting standards

An update to the Part L is in progress following a consultation which closed in February 2020, however there is currently no announced timeline for publication. When an announcement is made, the impacts of any changes will be considered within the development design relative to the transition timeline for the new regulations.

4.1.3 Climate Change Act 2008 (2050 target amendment)

This legislation requires the government to reduce the UK's net emissions of greenhouse gases by 100% relative to 1990 levels by 2050. This was the first net zero commitment by a major economy and represented a significant amendment to the previous policy of 80% within the same timeframe.

This legislation is now a key driver behind policy proposals across all areas of government, and it will require equally significant efforts from the private sector.

4.2 Local Policy

The Kirklees Council Local Plan was adopted on 27th February 2019 and is the main planning document for the Kirklees planning district which guides the area's future development in the period up to 2031. This document sets out the vision and objectives for the district, allocates sites for housing and other forms of development and indicates development management policies.

The Local Plan is presented in two parts:

1. Strategy and Policies:

Sets out the spatial vision, strategic objectives, and a comprehensive set of policies that will guide the scale, location and type of development in the District until 2031. This document also provides the basis for determining detailed issues when dealing with planning applications. This is the main reference document for this sustainability statement.

2. Allocations and Designations:

This document provides a set of site allocations and designations to meet the vision and objectives of the Strategy. The document includes land allocations to meet anticipated development needs relating to housing, employment and mixed-use development.



5 BIODIVERSITY

This section describes the proposed biodiversity strategy for the North Bierley development to pursue the sustainability framework objective to *'Support biodiversity across the development by integrating with surrounding habitats and increasing the ecological value of the site'*.

5.1 Key Requirements

The biodiversity strategy will seek to meet national and local planning policies as well as the targeted level of performance across the sustainability framework KPIs. These are summarised below.

Table 3 Biodiversity planning policies

DRIVER	POLICY/STRATEGY/TARGET REQUIREMENT
The National Planning Policy Framework	Conserving and enhancing the natural environment.
	LP1 Presumption in Favour of Sustainable Development
Kirklees Council Local Plan Strategy and Policies	LP24 Design
	LP30 Biodiversity and Geodiversity
	LP31 Strategic Green Infrastructure Network
	LP32 Landscape
	LP33 Trees

Table 4 Key Performance Indicators and Targets for Biodiversity

KEY PERFORMANCE INDICATOR	UNITS	TARGET VALUE
Biodiversity net gain (on or off-site)	% (Biodiversity Unit)	5-10%

5.2 Strategy

The biodiversity strategy is based on the Ecological Impact Assessment and Habitat surveys which identify existing natural assets across the site and opportunities to enhance the ecological value within the development and inform the landscape strategy.

The ecological appraisal has indicated the site comprises of large areas of neutral grassland, and vacant/derelict ground from the site's former operation as a wastewater treatment plant. These areas generally have low ecological value. Small parts of the site such as the mixed scrub are of greater value and are mapped as part of the Kirklees Wildlife Habitat Network (KWHN), although following consideration they are not considered to support rare or otherwise notable species.

There are two watercourses running across the site, open and within culverts. The larger of the two is known as the Hunsworth Beck and is mapped within the KWHN. Site proposals have been developed to ensure both of these watercourses are protected during construction as well as operation, and opportunities to enhance them have been proposed wherever possible.

A part of the southern grassland, mixed scrub and Hunsworth Beck area of the site lies within the Kirklees Wildlife Habitat Network, which '*connects designated sites of biodiversity and geological importance and notable habitat links*' as defined in the Local Plan.

Wildlife surveys have also been completed to identify amphibian, bird, bat, riparian mammal, white-clawed crayfish, badger and reptile activity across the site, as well as any Invasive Non-Native Species (INNS). Very limited activity was identified requiring detailed consideration within the design, however the site proposals will look to support habitat enhancement through the landscape design where possible.

Whilst there is limited current ecological value within the site, construction of the development will have an impact on existing habitats and result in habitat loss to some extent. Due to the outline nature of the application, a detailed landscape strategy has not yet been developed however overarching principles have been defined to help address these impacts:

- To minimise the impacts from construction activities such as site clearance, vehicle movements, noise and pollution; a **Construction Environmental Management Plan** will be developed. This plan will set out detailed protection and mitigation measures for the site. This will include barrier protection for areas of retained trees, silt fencing to mitigate watercourse pollution and other measures to be defined in the next stages.
- Due to the loss of habitats from the proposed development, a **detailed landscape design** will be developed proposing new habitat areas and enhancements to existing areas. This will be developed in alignment with the local Biodiversity Net Gain requirements. This assessment promotes not just quantity of habitat but also quality allowing biodiversity improvements to be delivered.
- Complimentary to the landscape proposals a **Biodiversity Management Plan** will be developed to ensure the long-term management and success of the biodiversity proposals is achieved.

A Biodiversity Net Gain calculation has been completed based on indicative ecological strategies which demonstrate likely potential for delivering a net gain on the site. The indicative calculation is included within the Ecological Impact Assessment, although this is to be confirmed in later design stages.



6 MATERIALS

This section describes the proposed materials strategy for the North Bierley development to achieve the sustainability framework objective to *'Promote sustainable material use and minimise waste generated during construction and operation'*.

This strategy is based on minimising the impacts of material use both within the construction and operation of the North Bierley development.

6.1 Key Requirements

The materials strategy will seek to meet national and local planning policies as well as the targeted level of performance across the sustainability framework KPIs. These are summarised below.

Table 5 Materials planning policies

DRIVER	POLICY/STRATEGY/TARGET REQUIREMENT
The National Planning Policy Framework	Facilitating the use of sustainable minerals.
Kirklees Council Local Plan Strategy and Policies	LP1 Presumption in Favour of Sustainable Development
	LP24 Design
	LP43 Waste management hierarchy
	LP52 Protection and improvement of environmental quality

Table 6 Key Performance Indicators and Targets for Materials

KEY PERFORMANCE INDICATOR	UNITS	TARGET VALUE
Operational waste diverted from landfill	% (tonnes)	No less than 65%

6.2 Strategy

Measures to support efficient use of materials will be employed across all aspects of the North Bierley development. With the buildings being submitted in outline, detailed information will be developed during the next design stages however the overarching principles are discussed below.

6.2.1 Construction Materials

Construction materials have far-reaching environmental, economic and social impacts, with irresponsible selection and use having consequences that can lead to further habitat destruction, global warming and economic exploitation. Due to a decarbonising electricity grid and improving levels of building energy

efficiency, the carbon emissions associated with construction materials often now outweigh the operational carbon emissions over a building's lifetime.

The proposed North Bierley development will respond to these concerns through several ways, which may include:

- Material use will be minimised as much as possible through efficient design and innovative construction processes where possible.
- Material sourcing including both type and location to be considered when selecting materials.
- Materials with relevant environmental certification credentials (e.g. FSC timber) will be selected where possible to ensure materials are coming from responsible and sustainable sources.

Detailed design of the buildings and their material palette will be developed during the next stages, where the above strategies will be employed within the design process.

6.2.2 Construction Waste

To minimise waste generated from construction activities a construction Site Waste Management Plan (SWMP) will be developed prior to starting on-site. This document will establish detailed targets informed by the sustainability framework for construction waste management, prevention methods and cost saving opportunities.

Due to the likely nature of the development (e.g. large warehouse structure) the potential for off-site pre-fabrication is relatively limited but will be considered for some internal areas (e.g. bathrooms, offices) during detailed design stages. This method of manufacturing building elements in a controlled factory setting not only delivers efficiency as discussed above, but can also significantly reduce construction waste generation. Any generated waste from construction will be segregated as much as possible to enable diversion from landfill.

Due to the existing on-site structures from the former wastewater treatment plant, construction of a level plateau is required to provide a level area for the development. Detailed earthworks proposals are not yet developed, however a cut/fill balance will be targeted wherever possible (and subject to possible ground contamination in parts) reducing waste generation and the need for additional vehicle movements.

6.2.3 Operational waste

Regarding operational waste the North Bierley development will employ a waste hierarchy, with the aim of first reducing waste, before considering reuse and recycling where appropriate.

The key aims informing the development of the waste management strategy are as follows:

- Waste is to be managed in line with the waste hierarchy to minimise the quantity of waste sent to landfill.
- Encourage waste minimisation and promote recycling and reuse.
- Provide appropriate space and storage facilities for recyclables, organic (food) and residual wastes.
- Raise awareness of waste management issues with staff and visitors.

The plot design is yet to be developed in detail, however appropriate space and facilities for waste management will be included within the designs. Sufficient space for segregated storage of waste streams will be provided, to support recycling aligned with local waste collection infrastructure. In occupied areas of the development such as office areas, appropriate signage and collection points will be installed to

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support and encourage waste segregation at source. An Operational Waste Management Plan (OWMP) will be defined for the development during the next stages.



7 WATER

This section describes the proposed water strategy for the North Bierley development to pursue the sustainability framework objective to *'Maximise water efficiency across the site through reducing consumption and exploring alternative sources where possible.'* This will create a positive impact on the wider catchment area and reduce reliance on potable water supply from the municipal network.

This strategy is based on employing a water hierarchy, and the premise that water is a critical resource and should be valued as such. Implementing conservation measures and maximising opportunities to produce and use alternative low impact sources can minimise stress on traditional supplies and reduce the associated energy consumption and CO₂ emissions from mains water treatment and supply.

7.1 Key Requirements

The water strategy will seek to meet national and local planning policies and target levels of performance across the sustainability framework KPIs for the implementation of a water efficient development. These are summarised below.

Table 7 Water planning policies

DRIVER	POLICY/STRATEGY/TARGET REQUIREMENT
The National Planning Policy Framework	Meeting the challenge of climate change, flooding and coastal change
Kirklees Council Local Plan Strategy and Policies	LP1 Presumption in Favour of Sustainable Development
	LP24 Design
	LP27 Flood Risk
	LP28 Drainage

Table 8 Key Performance Indicators and Targets for Water

KEY PERFORMANCE INDICATOR	UNITS	TARGET VALUE
Water per capita consumption (PCC) per day	Litres	Less than 50

7.2 Strategy

7.2.1 Approach

Key drivers for the North Bierley water strategy are as follows:

- To ensure efficient resource use and demand.

- To align with key targets and policy, for site water use management.
- To ensure whole life cost savings associated with efficient water resource system design and operation are outlined and achieved.

The proposed water strategy will follow a hierarchical approach to support the conservation of water supplies and resources. This approach looks to minimise water demand as a priority, before considering the later steps of the hierarchy: efficient fixtures, fittings and distribution and alternative sources for lower grade use.

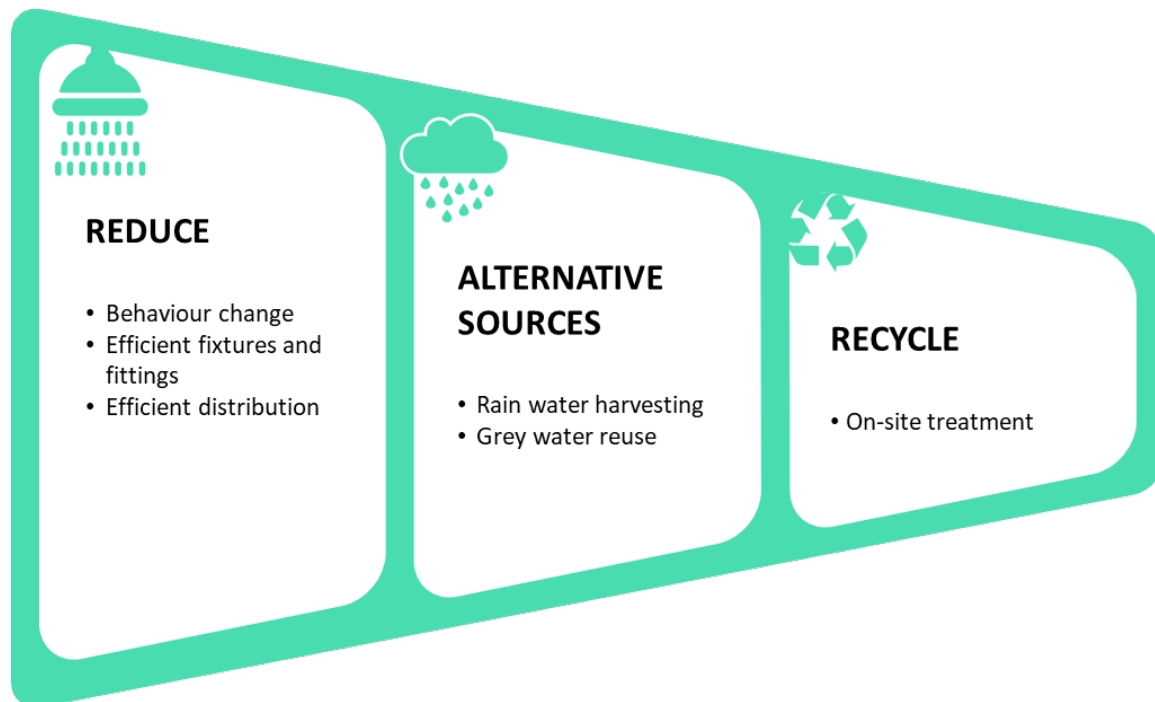


Figure 4: Water hierarchy

7.2.2 Proposals

Measures to conserve and minimise water consumption which will be considered during detailed design of the North Bierley development are explained further below aligned with the hierarchical approach:

1. **REDUCE:** High-performance water efficient fixtures and fittings can help reduce site water consumption and demands on wastewater services. These represent passive measures and require no behavioural changes by the end-users. Specific flow rate targets will be confirmed during detailed design.

System efficiency can also be optimised by improvements in the design and distribution of the water system. Intelligent design that reduces the number of dead legs and minimises overall distribution lengths shall be sought, whilst additional features such as flow restrictors will be considered. The use of metering and leak detection will be encouraged to enable close monitoring and management of water use during operation.

2. **ALTERNATIVE SOURCES:** The use of alternative water sources, primarily for non-potable use, can help to alleviate demand on scarce water sources and reduce costs associated with potable water supply to the development.

Rainwater is considered as a relatively clean water source, needing only minimal treatment before use in non-potable water systems such a toilet flushing and irrigation. The use of onsite rainwater harvesting can

help reduce the development's demands on the mains water supply and can minimise stress on site drainage systems.

The quantities of rainwater available for use depends on the collection area, surface, filter efficiency and average rainfall. As rainfall is not a steady daily supply, storage vessels are required to be sized to hold several days' supply at a time to meet continual daily demands. All rainwater storage will also require a mains water backup supply to accommodate periods of low rainfall.

The potential to utilise rainwater harvesting systems will require further exploration within the detailed design. It would most likely provide a possible solution for toilet flushing.

3. **RECYCLE:** Due to the intended employment use of the proposed development, there are anticipated to be relatively limited wastewater flows from the development meaning the viability of water recycling systems is unlikely. This will be confirmed during detailed design.

7.2.3 Drainage Strategy

The drainage strategy for the site will be developed to ensure there is no increase in offsite flood risk caused by the proposed development through the provision of attenuation measures across the site. A mixed drainage solution is likely using a combination of below-grade and open storage solutions across the development. Sustainable urban drainage systems (SUDS) will be explored where possible utilising natural approaches which provide additional amenity and biodiversity benefit, although the detailed strategy is to be developed during detailed design.



8 ENERGY & CARBON

This section describes the proposed energy & carbon strategy for the North Bierley development to pursue the sustainability framework objective to *'Minimise energy consumption and carbon emissions from the development through employing a hierarchical approach to energy'*.

This strategy is based on employing a hierarchical approach to energy to reduce energy demand and demonstrating how on-site renewable energy generation can be utilised to reduce CO₂ emissions from residual energy use on the site.

8.1 Key Requirements

The energy strategy will seek to meet national and local planning policies as well as the targeted level of performance across the sustainability framework KPIs. These are summarised below.

Table 9 Energy & Carbon planning policies

DRIVER	POLICY/STRATEGY/TARGET REQUIREMENT
The National Planning Policy Framework	Meeting the challenge of climate change, flooding and coastal change.
Kirklees Council Local Plan Strategy and Policies	LP1 Presumption in Favour of Sustainable Development LP24 Design LP26 Renewable and low carbon energy

Table 10 Key Performance Indicators and Targets for Energy & Carbon

KEY PERFORMANCE INDICATOR	UNITS	TARGET VALUE
Building energy demand	kWh/m ² /year	TBC*
Reduction in regulated carbon dioxide emissions by on-site renewable energy technologies	%	10

*To be defined in the next stages with detailed energy modelling

8.2 Strategy

8.2.1 Applying the Energy Hierarchy

A 'Lean, Clean, Green' hierarchical approach is proposed for the North Bierley development. This approach aims to minimise energy demand and consumption from the outset through the use of low energy, passive measures and efficient systems before the deployment of low and zero-carbon (LZC) technologies.

The rationale is that it is more cost effective to reduce energy demands by prioritising passive design measures and energy efficient systems, before considering deployment of LZC technologies. This approach also ensures that contributions from LZC systems are maximised.

The energy hierarchy is summarised as follows;

- Lean: Reduce demand through passive design measures,
- Clean: Supply energy efficiently and use market leading energy efficient equipment,
- Green: Incorporate on-site low and zero carbon systems.

The following sections present potential measures that can be employed across the energy hierarchy to minimise the energy demand and CO₂ emissions of the North Bierley development.

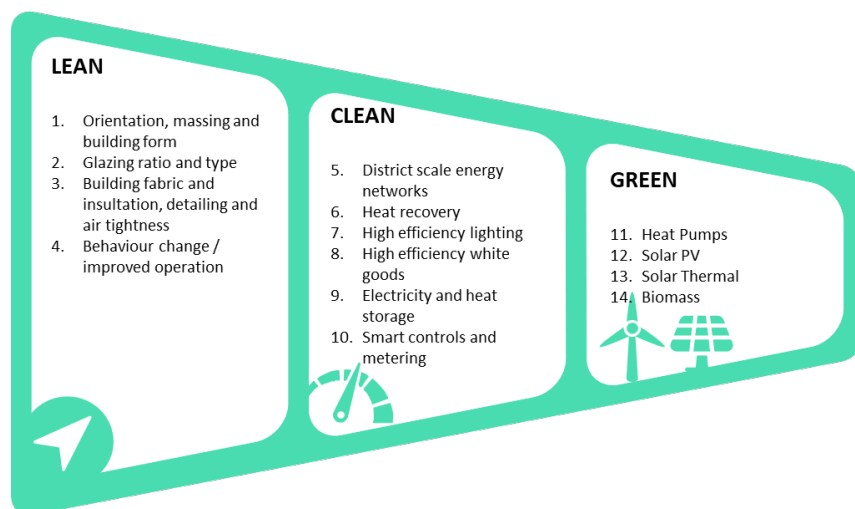


Figure 5: Energy Hierarchy

8.2.1.1 Lean

Lean energy strategies and measures utilise passive design approaches to reduce the onsite energy demand from the outset, and thus associated CO₂ emissions. Potential strategy measures that should be considered through detailed design stages for the North Bierley development are:

- **Optimised orientation, massing and form:** This approach aims to maximise seasonal free heating and cooling as well as reducing the need for artificial lighting.
- **Glazing Ratio and type:** Optimised amount of glazing to support thermal/solar performance.
- **Building fabric and Insulation, Detailing and airtightness:** Highly insulated building fabric with high airtightness.
- **Behaviour change / Improved operation:** Findings from post-occupancy evaluation studies used to inform and incentivise behaviour change to further reduce energy demands and promote energy efficient behaviour.

The energy strategy will ensure that these approaches are explored and employed where possible during the next stages, and that the infrastructure and building control strategies are intuitive and promote a culture of energy conservation across all users.

8.2.1.2 *Clean*

Clean energy strategies and measures utilise highly efficient processes and controls to reduce energy demand. Highly efficient building services systems (e.g. pumps, fans) and smart infrastructure such as smart meters, controls and appliances, energy storage and electric vehicle charging systems will be included where viable. This can help future proof development, improve air quality and reduce CO₂ emissions.

District heating systems can deliver significant energy and CO₂ savings when implemented effectively. There are unfortunately no existing or planned heat networks in the area which the site could connect to. Instead, high efficiency building-level heating systems will be proposed for the development. The viability of combustion-free all-electric systems will be explored as an effective strategy to minimise carbon emissions and deliver local air quality benefits.

8.2.1.3 *Green*

Following the reduction of energy demands through 'lean' and 'clean' measures, the final stage is to consider on-site LDC technologies i.e. 'Green' measures. Deployment of on-site LDC technologies should help to further reduce the development's CO₂ emissions.

Solar Photovoltaics are considered the most viable LDC technology for the North Bierley development and will be explored further at detailed design. Solar PV's are a highly mature LDC technology, which could be installed on roof areas across the development. Due to the likely nature of the buildings with large unobstructed areas, roof mounted is considered the most suitable location for solar PV modules. Ground mounted arrays could be installed, but this would require large areas of land which would otherwise be used for other amenity and biodiversity value.

Heat pumps, either air source or ground source, could also be a viable LDC technology to deliver further carbon emissions reductions across the development. This will be considered in detail during the next stages in conjunction with the MEP design to deliver the most appropriate solution for the North Bierley development.

It is hoped that 10% of the site's energy demands could be delivered from renewable energy systems, but this will be confirmed in the next stages.



9 TRANSPORT & MOBILITY

This section describes the proposed transport and mobility strategy for the North Bierley development to pursue the sustainability framework objective to “*Promote sustainable transport and mobility options for all staff and visitors.*”

9.1 Key Requirements

The transport and mobility strategy will seek to meet national and local policies as well as performance targets across the sustainability framework KPIs. These are summarised below.

Table 11 Transport and mobility planning policies

DRIVER	POLICY/STRATEGY/TARGET REQUIREMENT
The National Planning Policy Framework	Promoting sustainable transport.
	LP1 Presumption in Favour of Sustainable Development
	LP19 Strategic transport infrastructure
	LP20 Sustainable travel
Kirklees Council Local Plan Strategy and Policies	LP21 Highways and access
	LP22 Parking
	LP23 Core walking and cycling network
	LP24 Design
	LP47 Healthy, active and safe lifestyles
	LP51 Protection and improvement of local air quality

Table 12 Key Performance Indicators and Targets for Transport and Mobility

KEY PERFORMANCE INDICATOR	UNITS	TARGET VALUE
Percentage of development parking spaces dedicated to low-emitting and/or electric vehicles	%	10
Percentage of sustainable transport mode share for workers' journeys to work (modes other than single-occupancy vehicle)	worker % mode share	20%

9.2 Strategy

A Transport Assessment (TA) and Framework Travel Plan (FTP) has been developed for the North Bierley development. The purpose of the TA is to review the local highway network, the sustainable accessibility of

the proposed development and to assess the development proposals in a local transport context. The TA informs the FTP which discusses the accessibility of the site and outlines a range of travel plan measures that will be promoted to site occupants to encourage sustainable travel patterns and reduce the frequency and impact of single-occupancy car travel.

As Keyland Developments will not be the ultimate site occupier, it is proposed to utilise an FTP coordinator to ensure that the proposed transport outcomes continue to be delivered from design through to operation. This role will coordinate the delivery of pre-occupation actions (for example relating to the site design), and then communicate and handover responsibility to the site occupiers where a similar role will be required. This role will then support operational activities such as engaging with staff, overseeing on-site initiatives etc.

9.2.1 Vehicular access

Access to site will be from Cliff Hollins Lane via the new road being constructed as part of the adjacent 'Interchange 26' development.

A total of 142 parking spaces are shown on the indicative site layout, although this will be confirmed during detailed design and again once the site occupier is confirmed. Whilst frequent vehicle access may be required to support the business activities of the site tenants (e.g. deliveries and logistics), all efforts will be made to minimise the use of private vehicles for employee commuting.

Alternative modes of transport will be clearly communicated and promoted to staff, for example through the provision of an Employee Travel Guide. Where private vehicle use is required, lift-sharing services such as *liftshare.com* will be promoted to reduce the number of trips and associated environmental impacts of these journeys. This could be further encouraged through internal match-making systems, priority parking for car sharers and rewards/incentive schemes.

9.2.2 Walking and Cycling

Walking and cycling will be encouraged within the development as both a low-carbon mode of transport and an excellent way to promote staff health and wellbeing. Following an isochrone analysis, Bradford and surrounding villages are considered an acceptable commuting distance utilising National Cycle Route 66. Where viable for staff, walking and cycling would further encourage a local workforce and the benefits this delivers as discussed within other themes.

A series of on-site design and operational strategies will be explored in detail in future design stages to further support staff commuting by walking and cycling, these include:

- High-quality routes within the site providing a safe connection with the local infrastructure.
- Cycle parking provision.
- Possible provision of cycling facilities such as showers and lockers (this will be discussed with the site occupiers).
- Communication of information regarding local routes, on-site facilities and safety advice to all staff via an Employee Travel Guide. Site tenants may also offer incentive schemes such as Cycle to Work.

9.2.3 Public transport

Good existing public transport connectivity exists for the site with regular bus connections to Bradford and Wakefield, as well as the Low Moor railway station which provides frequent services to local, regional and national destinations.

NORTH BIERLEY: SUSTAINABILITY STATEMENT

Employees will be encouraged to utilise public transport services through easily accessible information as well as ticket financing options such as season ticket loans and discounted travel through possible corporate deals.



10 ADDITIONAL THEMES

Due to the outline nature of the application, there has been limited consideration of the broader sustainability framework themes within the design to date. An overview has been provided below with a summary of the key strategies and design measures which will be considered in the next stages.

THEME	STRATEGY	SUSTAINABILITY FRAMEWORK PERFORMANCE TARGET
 ACCESSIBILITY	- Provision of appropriate facilities such as priority parking spaces, level entry access points including ramps or lifts, and accessible building facilities such as bathrooms. - Considerations for working environments and other areas to be explored with potential tenants.	100% of public areas accessible to those with physical disabilities
 SKILLS & EMPLOYABILITY	- Creation of valuable employment opportunities for the local region. - Explore opportunities to support local employment within nearby residential areas for example. - Consider potential for apprenticeships with local education providers and the appointed contractor.	Direct, indirect and induced jobs created within the the development
 HEALTH & WELLBEING	- Green and blue infrastructure providing access to nature, visual amenity and wellbeing. - Promoting active travel options for employees and customers by providing appropriate facilities such cycle storage, lockers, showers, etc. - Creation of new safe and high-quality footpath and cycle connections through the site. - High quality internal environments including daylighting and good levels of ventilation.	Provision of cycle storage facilities at a ratio of 1:10 employees.
 SMART INFRASTRUCTURE	- Comprehensive building management systems (BMS) to enable close management of building performance. - Control of internal spaces based on temperature as well as air quality indicators such as CO2 to maximise energy efficiency as well as occupant comfort and wellbeing. - A continuous programme of monitoring and evaluation to identify poor performance/faults which need addressing as well as areas of opportunity for further efficiency savings.	SMART infrastructure with half hourly reporting and high digital connectivity.

NORTH BIERLEY: SUSTAINABILITY STATEMENT

THEME	STRATEGY	SUSTAINABILITY FRAMEWORK PERFORMANCE TARGET
 RESILIENT ASSETS	- Buildings will be designed to limit overheating risks through measures such as shading devices, thermal mass and natural ventilation. - Dynamic thermal modelling using future weather data will be used to inform mitigation strategies.	Buildings and infrastructure designed for future climate scenarios.
 ECONOMIC GROWTH	- Where possible, local materials and supply chains will be used to maximise the local economic benefit. - The development will be a key generator of local jobs and investment both in construction and operation.	Gross Value Added to the local region from both construction and operation.

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