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LEYLAND

Sustainability Statement

The Re-Development of the
Former Moss Side Test Track, Leyland

Sustainability & Energy Statement

Leyland Test Track

October 17



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This report has been prepared by Turley Sustainability on behalf of BDW Trading Ltd and Property Capital PLC to support the hybrid application for a development of 950 dwellings, a local centre, employment floor space, a primary school and on-site green space.

Client

BDW Trading Ltd and Property Capital PLC

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BDW and Property Capital will deliver a sustainable, resource efficient new residential-led development that supports local and national sustainability policy.

1. Executive Summary

This Sustainability Statement illustrates the measures incorporated within the development which ensure it is sustainable in the context of local and national policy.

This Sustainability Statement demonstrates that the proposed development site is in a sustainable location for residential development and also illustrates the measures incorporated which ensure it is sustainable in the context of local and national policy.

Achieving Sustainable Development

This report also demonstrates how the proposed new development of the former Leyland Test Track will deliver a sustainable new settlement in accordance with the National Planning Policy Framework and Planning Practice Guidance as well as local sustainability policies.

The scheme presents proposals that aim to effectively balance economic, social and environmental impacts in accordance with national and local sustainability priorities.

The key sustainability benefits of the application are split between Economic, Environmental and Social benefits, and include:

Economic

- Creation of new homes and employment opportunities, providing a significant

contribution to the growth of the local economy.

- Homes with good access to local services and amenities in Leyland and the construction of a new local centre, including a medical centre, primary school and employment floorspace.
- Financial support for the local council through new additional Council Tax revenue and New Homes Bonus.
- An increase in expenditure on convenience and comparison retail by new residents supporting local businesses and economy.

Environmental

- New sustainable, energy efficient, low carbon homes delivered through a fabric first approach to design and construction.
- Provision for connections into the existing local cycle and pedestrian routes, linking the site to local services and sustainable transport opportunities.
- Development in an area at a low risk of flooding with the risk of surface water flooding mitigated through a comprehensive site-wide Sustainable Drainage System (SuDS).
- Protection and enhancement of the existing site habitats through the retention of existing woodland, ponds and hedgerows, and the strengthening of the green link throughout the site.
- Development that does not adversely impact on local air quality during both construction and occupation of the site.

- Development designed to reduce potable consumption to below national average levels.

Social

- A range of dwelling sizes designed to meet the variety of local need, creating a diverse and vibrant community.
- Well-designed new homes with comfortable living environments which are resilient to future climate change.
- Development which includes informal green spaces providing recreational opportunities, enhancing opportunities for community interaction and wellbeing.
- The inclusion of clearly defined and well lit public, private and semi-private spaces and well defined routes which benefit from natural surveillance.
- Development which will adopt the principle of Secured by Design.

The measures outlined above demonstrate how the proposed development at the former Leyland Test Track will be sustainable reflecting local priorities and the latest government guidance.

2. Introduction

This Sustainability and Energy Statement has been prepared to demonstrate how the proposed new development at Leyland Test Track will support local and national sustainability policy.

1.1 Site and Surroundings

The Proposed Development site is 53.18ha in size and is located in the Moss Side area of Leyland, 2.5km to the west of Leyland town centre. It is sited within the authority of South Ribble.

1.2 Proposed Development

The Leyland Test Track site is a major strategic development site with a key role to play in the future of South Ribble Borough. Its regeneration, to deliver new homes and businesses, is identified as ‘crucial’ in the South Ribble Local Plan and as such the site has been allocated in planning documents for mixed use development since 2000. Regeneration of the Leyland Test Track site is also a key part of the Preston, South Ribble and Lancashire City Deal, which aims to secure investment for the region.

The site occupies a former testing facility operated by Leyland Motors and is surrounded by existing development with a mix of residential and commercial uses. To the south, the site is bound by residential properties in Moss Side, including those on Greystones, Robin Hey, Nookfield and The Laund; Longmeanygate runs around the edge of the



site from west to north and comprises The Brambles School and several private residences; in addition to the north of the site there is a predominantly industrial area with several warehouse buildings accessed off Aston Way and a commercial/ industrial facility operated by TNT.

The description of the Proposed Development includes:

“A hybrid planning application which comprises the following:

- *An application for full planning permission for site enabling works, the development of highway and drainage infrastructure for the full application site (“the site”) (Phase 1) and 197 new homes and associated internal access roads, public open space and green infrastructure (Phase 2);*
- *An application for outline planning permission for the development of up to 753 new homes, up to 5,000 sqm of Business Park (Use Classes B1) up to 15,000 sqm (Use Class B2) and up to 8,000 sqm Industrial Estate (Use Class B8), local centre comprising up to 3,000 sqm of accommodation for any combination of uses*

*within Classes A1, A2, A3, A4, A5, B1 or D1
(including health centre / clinic) (which shall not
exceed 2,500 sqm of main town centre uses), a
Primary School (1.60ha) and associated public
open space and green infrastructure (Phases 3-
5).*

3. Policy Context

This section of the report details the local and national sustainability planning policy that is relevant to the proposed new residential-led development at Leyland Test Track.

This section provides an overview of relevant National and Local sustainability policies which aim to ensure development proposals are sustainable, responding to local, national and global objectives.

2.1 UK Sustainable Development Strategy

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

One of the key aims of this strategy is to recognise the threats of climate change and ensure that the UK develops a strategy to mitigate and adapt to this phenomenon.

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

- Living within Environmental Limits
- Ensuring a Strong, Healthy and Just Society
- Achieving a Sustainable Economy
- Promoting Good Governance
- Using sound science responsibly.



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

2.2 Climate Change Act

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

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

The House of Lords passed the Carbon Budget Order 2016 on 19 July, making the budget and its target law. A bill passed in early July to abolish the Department of Energy and Climate Change (DECC) and absorb its functions into the new Department for Business, Energy and Industrial Strategy, will not affect the implementation of the Carbon Budget.

2.3 UK Carbon Plan

In 2011, the Government published an updated Carbon Plan setting out how the UK will achieve decarbonisation and make the transition to a low

carbon economy. It sets this objective within a framework of mitigating and adapting to climate change and maintaining energy security in a way that minimises costs and maximises benefits to the economy.

With regards to development, the Carbon Plan presents the UK Government's approach to promoting the delivery of low carbon, resilient and adaptive buildings and enabling sustainable transportation as positively contributing to these national carbon reduction targets.

2.4 Building Regulations

Whilst not planning policy, the Building Regulations, and specifically Approved Documents Part L: Conservation of Fuel and Power are relevant as they determine the energy efficiency and carbon emission standards required by new buildings.

The primary mechanism for reducing carbon dioxide emissions in new development is through progressive changes to Part L. The most recent update in 2013 requires dwellings to achieve an aggregated 6% reduction in CO₂ emissions and non-domestic buildings to achieve an aggregated 9% improvement over the 2010 Regulations.

These changes aim to strike a balance between the commitment to reducing CO₂ emissions and improving energy efficiency and ensuring that the overall effect of regulation upon consumers and businesses does not stifle growth. The Government has stated that developers will continue to have flexibility in how they meet reduction targets; however, particularly in dwellings, with the introduction of a fabric efficiency target in dwellings, the emphasis of these changes is on using a fabric first approach.

2.5 Housing Standards Review

On 27 March 2015 the Government confirmed a new approach to the setting of technical housing standards in England and published a written Ministerial Statement which outlined the policy on the application of these technical standards.

The Statement set out that from the date the Deregulation Bill 2015 is given Royal Assent (30 March 2015) "*local planning authorities should not set any additional local technical standards or requirements relating to the*

construction, internal layout or performance of new dwellings".

This includes the winding down of the Code for Sustainable Homes (The Code). It also set out that local planning authorities may need to review their local information requirements to ensure that technical detail that is no longer necessary is not requested.

The National Planning Practice Guidance was also updated in March 2015 to reflect the Ministerial Statement and now highlights that planning authorities need to take account of government decisions on the Housing Standards Review when considering local sustainability requirements relating to new homes.¹

2.6 National Planning Policy Framework (NPPF)

Following its publication in March 2012, national planning policy is now provided by the NPPF which sets out the government's planning policies for England and how these are expected to be applied. It also sets out the requirements for the planning system only to the extent that it is relevant, proportionate and necessary to do so.

The Government has made clear its expectation that the planning system should positively embrace well-conceived development to deliver the economic growth necessary and the housing we need to create inclusive and mixed communities.

The NPPF states that: 'The purpose of the planning system is to contribute to the achievement of sustainable development'. It states clearly that in order to deliver sustainable development, the planning system must perform three distinct roles, aligned to the three pillars of sustainability, economic, social and environmental sustainability, which must not be taken in isolation and should be pursued jointly.

2.8 Fixing the Foundations

Following the general election in May 2015, Government produced a number of policy documents including "Fixing the Foundations" published in July 2015.

The document sets out Government's plan for future carbon reduction requirements in new

¹<http://planningguidance.planningportal.gov.uk/blog/guidance/climate-change/what-are-governments-national-standards-for-a-buildings-sustainability-and-for-zero-carbon-buildings/>

development and outlines the government's intention to no longer continue with the Allowable Solutions scheme and postpone any increases in on-site energy efficiency standards in 2016 which were planned as part of the national zero carbon buildings policy.

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

2.7 National Planning Practice Guidance (PPG)

In March 2014 the Government released the updated National Planning Practice Guidance (the Guidance). The Guidance provides information to local authorities on how to implement the policies of the NPPF and approach specific policy aims.

The guidance sets out how local authorities should include policies that protect the local environment and strategies to mitigate and adapt to climate change. It reiterates that local authorities should set sustainability policies for new development that are line with the Government's Zero Carbon Buildings Policy and nationally described standards. It supports development of good design that is functional and adaptable for the future.

2.8 Local Development Framework

The Central Lancashire Core Strategy was adopted in July 2012 and covers the three local authority districts of Preston, South Ribble and Chorley, for the period 2010 to 2026.

The Core Strategy is the centrepiece of Central Lancashire's Local Development Framework and its purpose is to help co-ordinate development in the area and contribute to boosting investment and employment. It aims to encourage sustainable managed growth, whilst protecting and enhancing green spaces.

Chapter 12 of the Core Strategy addresses climate change and sets out strategic objectives to reduce energy use and CO₂ emissions from new development; manage flood risk and the impacts of flooding; and to reduce water usage, protect and enhance water resources and minimise the

pollution of water, air and soil. Specific policies include:

Policy 27 – Sustainable Resources and New Developments: states that all new dwellings will be required to meet Level 3 of the Code for Sustainable Homes, increasing to Level 4 from January 2013 and Level 6 from January 2016². Minimum Energy efficiency standards for other new buildings will be to achieve BREEAM Very Good.

For new build development of five or more dwellings or non-residential units of 500sqm or more of floorspace, evidence must be provided that demonstrates:

- the design, orientation and layout of the building minimises energy use, maximises energy efficiency and is flexible enough to withstand climate change;
- either additional fabric insulation measures or appropriate decentralised, renewable or low carbon energy uses will be installed and implemented to reduce the carbon dioxide emissions of predicted energy use by at least 15%; and
- appropriate storage space will be provided for recyclable waste materials and composting.

Policy 29: Water Management: states that the use of potable mains water in new development should be minimised, the adoption of Sustainable Drainage Systems is encouraged to improve water quality, water management and reduce the risk of flooding.

Policy 30: Air Quality: states that the delivery of Green Infrastructure initiatives should be prioritised to improve air quality.

2.7.1 South Ribble Development Plan

South Ribble Borough Council has prepared a Development Plan which as a suite of documents, sets out their vision, planning strategies and policies. The new Local Plan was adopted in July 2015 and is the key document within the Development Plan, setting out the vision for the borough and the Council's interpretation of the Central Lancashire Core Strategy including development management policies.

² It should be noted that this policy was adopted prior to the Housing Standards Review and the requirements for residential dwellings are no longer applicable.

Chapter J of the Local Plan reinforces the policies set out in the Core Strategy relating to climate change.

2.7.2 Supplementary Planning Documents (SPDs)

To provide additional guidance in support of the implementation of policies set out in the Local Plan, a number of SPDs have been produced; relevant to this document, this includes the Design Guide (Central Lancashire) adopted in 2012 and the Renewable and Low Carbon Energy (South Ribble) adopted in 2012.

2.8 Policy Review

There are consistent themes that emerge from the review of national and local sustainability policy which are considered relevant to this application. At a regional and local level the climate change and sustainability policies of the adopted Central Lancashire Local Plan highlight the need to reduce energy and carbon dioxide emissions, consider low carbon and renewable energy and provide sustainable design and construction.

The Applicant is supportive of the sustainable development objectives of the Council and has developed a sustainability strategy that responds positively to the requirements of Central Lancashire Core Strategy and South Ribble Local Plan.

The following sections of this report detail the proposed climate change and sustainability strategy for Leyland Test Track and how and this will support an energy efficient, low-carbon, sustainable new residential-led development.

3. Sustainability at Leyland Test Track

This chapter summarises the Sustainability Strategy for the proposed new residential development at Leyland Test Track, taking into account local and national policy.

The benefits of the development proposals are highlighted in this section and presented under the following headings to demonstrate consideration of the Council's sustainability requirements as well as broader sustainability issues.

- 1. Mitigating Impact on Climate:** How the development has been designed to mitigate greenhouse gas emissions through energy efficiency and renewable energy measures.
- 2. Adapting to Climate Change:** How the development is designed to adapt to the potential future impacts of climate change.
- 3. Sustainable Procurement, Construction & Waste:** How the development will procure sustainable materials and support the local economy; mitigate construction site impacts; and reduce waste during design, construction and operation.
- 4. Promoting Green Infrastructure:** How the sensitive use of Green Infrastructure across the development contributes to the protection and enhancement of ecological value of the site, and local health and wellbeing.
- 5. A Sustainable Location:** How the development will be designed to prioritise sustainable modes of



transport and is well-located for amenities, delivering environmental, social and economic benefit.

3.1. Mitigating Climate Change Impacts

One of the main challenges facing the UK and new development is the need to mitigate and adapt to a changing climate. The government is committed to tackling climate change and has an ambitious long-term goal to reduce CO₂ emissions by 80% by 2050.

In the context of development, energy reductions will be achieved by applying the Energy Hierarchy outlined in Figure 2, which promotes a 'fabric first' approach to reducing CO₂ emissions and is considered best practice and the critical first step in the delivery of low carbon and sustainable buildings.

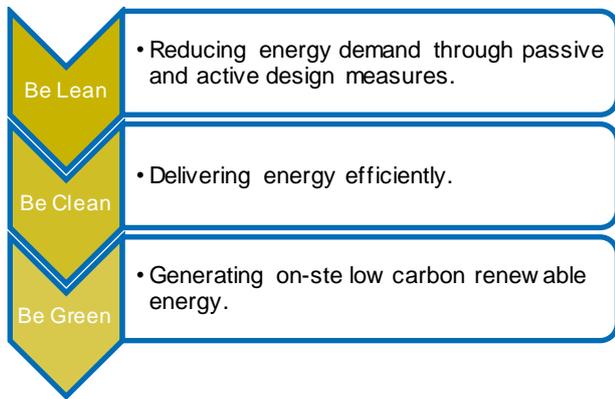


Figure 2: The Energy Hierarchy

3.1.1 Energy Demand Reduction (Be Lean)

Reducing the demand for heat and power through a well-constructed and insulated building fabric and energy efficient services is recognised as the most effective way of minimising CO₂ emissions.

For dwellings, this is now enshrined in Part L1A of the Building Regulations, which requires that a minimum Target Fabric Energy Efficiency (TFEE) is met for each dwelling; this is based on a notional dwelling with a concurrent specification that would meet the requirements. Table 2 outlines the model specification that the dwellings at Leyland Test Track will target in terms of fabric and efficiency performance, though it should be noted that there may be alternative ways of achieving the same level of performance and the final specification will be determined through detailed modelling of individual dwelling types:

Table 2: Part L 2013 Model Specification

Element or System	Values
Opening areas (windows & doors)	Up to 25% of floor area
External walls	0.18 W/(m ² K)
Party walls	0.0 W/(m ² K)
Floors	0.13 W/(m ² K)
Roofs	0.13 W/(m ² K)
Windows	1.4 W/(m ² K) g-value = 0.63
Doors	1.0 W/(m ² K)
Airtightness	5.0 m ³ /(h.m ²)
Linear Thermal Transmittance	Standard psi values

This 'fabric first' approach has a number of distinct benefits including:

- CO₂ savings delivered are 'locked-in' for the lifetime of the building (60 years or more) rather than the much shorter lifespan (around 25 years) of a renewable energy technology.
- Virtually no maintenance and/or replacement costs to maintain carbon dioxide reductions through improved fabric.

By targeting low air leakage and improved fabric U-values, it is intended that a meaningful contribution to the Target Emission Rate (TER) will be delivered through energy efficiency measures alone.

Good air tightness design will also reduce unwanted heat losses in winter and heat gains in summer and will increase the efficiency of the mechanical ventilation.

The following measures to reduce energy use and CO₂ emissions have been considered in the layout and design of the new dwellings:

- Design of new homes to optimise natural daylight in all the habitable spaces with suitable window sizes relative to living spaces and bedrooms.
- Where appropriate the design of new homes will include the specification of sustainable materials which aim to balance the aesthetics, robustness and durability with optimal thermal benefits.
- New homes which target building element U-values and air tightness.
- High performance glazing with appropriate window U-values and g-values to reduce heat loss and optimise positive solar gain while reducing the potential for overheating.
- Incorporating 100% high efficiency low energy lighting.
- Use of high efficiency condensing natural gas boilers to reduce energy consumption.
- Where appropriate, specification of high energy efficient rated appliances that use less energy and water.

New non-domestic buildings are required to meet the requirements of Part L2A; although this does not set a minimum fabric standard, it is recognised that fabric improvements are a cost-effective way of meeting the required energy targets and a similar approach will be adopted.

3.1.2 District Heating (Be Clean)

The next step in the energy hierarchy, once conservation of energy and energy efficiency have been addressed, is the provision of low carbon heat and power.

District Heating - District Heating Networks (DHN) comprise a centralised heat generator, typically a gas-fired Combined Heat and Power (CHP) engine, and a series of pipework to distribute hot water for space heating and hot water use into individual properties via individual heat interface units.

The use of community heating systems enable the benefits of low carbon technologies to be optimised: over the course of the day, heat demand shifts between residential consumers to commercial occupiers and back again; a heat network can match and manage these flows, whilst maximising the utilisation of the plant providing the heat. However, heat networks require a critical mass of heat demand to be both feasible and viable in operation.

DHNs are suited to development with high thermal demand, typically provided by sufficient density or a large anchor load, i.e. leisure centres and industrial processes.

Whilst there is a mixture of commercial and residential use at Leyland Test Track, there is no concentrated anchor load, and the development of well-insulated, low-density, high-efficiency homes - such as those proposed - limits the heating demand of the development and therefore the feasibility and viability of the installation of district heating.

Combined Heat and Power – The benefits of CHP relate to the concurrent generation of heat and electricity; although this occurs at much lower efficiencies than via standard gas boilers, the higher carbon factor for grid electricity has traditionally displaced greater emissions overall.

However, the benefit of the technology is significantly reduced as more grid energy is produced from renewable sources and the grid 'decarbonises'. Gas CHP will as a result generate more emissions than a standard gas boiler over the lifespan of the engine.

Whilst other, lower-carbon primary fuels could be utilised, these are not without issues. Biomass for example, is not a zero-pollution option, generating

greenhouse gases to cut, transport and burn the fuel, with some debate over how long it takes for trees to re-absorb the carbon emitted; the burning of the fuel also contributes to local air quality issues and there are additional issues associated with the sourcing and transport of . Hydrogen fuel cells may be a future potential option, but the infancy of the technology and prohibitive cost currently preclude its use.

3.1.3 Renewable Energy (Be Green)

Generating low carbon energy onsite can reduce reliance on fossil fuels and minimises energy lost through transmission, contributing to security of supply and better connections between energy demand and generation.

A review of potential low carbon renewable energy technologies has been carried out to determine potential technologies which could be incorporated into the development.

Solar Photovoltaic (PV) Panels - Solar PV systems can generate electricity for use in homes and commercial buildings and is particularly suitable on south facing, unobstructed roof spaces. Only a proportion of the new homes proposed across the development have south facing roof areas, limiting the application of this technology.

Solar Thermal Systems – Solar thermal systems are used to generate hot water and similarly to solar PV above, a proportion of new homes have suitable roof spaces for solar thermal hot water. They have a higher cost per unit of CO₂ displaced than solar PV and have therefore been discounted.

Heat Pump Systems – Heat pumps provide low grade heat from the ground (Ground Source Heat Pumps, GSHP) or air (Air Source Heat Pumps, ASHP).

Air Source Heat pump systems could be technically feasible however there is evidence that systems are delivering substantially lower efficiencies than predicted, and there are an increasing number of cases where such systems are being removed post- occupation on the basis of poor performance.

The feasibility of Ground Source Heat Pumps is subject to specific ground constraints and in addition their cost is very high compared to CO₂ savings and this technology has therefore been discounted.

Waste Water Heat Recovery (WWHR) - WWHR systems extract heat from waste water used in the home, usually from the shower or bath in residential properties, and could be installed in new homes at Leyland Test Track.

3.1.4 Energy Strategy Summary

It is anticipated that the development will meet the requirements of Part L 2013 through the application of the 'fabric first' approach and the implementation of energy efficiency measures described in Section 3.1.1.

As such, it is not expected at this stage that decentralised or renewable energy will be required to meet Part L requirements.

3.2 Adapting to a Changing Climate

Climate change will cause the UK to become warmer, winters to become wetter, and summers to become drier. Adapting to a changing climate will impact on the design, construction, location, cost and operation of all new buildings over the next few decades.

One of the NPPF's core planning principles is to encourage development to consider climate change adaptation and mitigation during the planning process.

3.2.1 Potable Water

Potable water is an increasingly important natural resource and with the majority of the UK classed as being in an area of moderate or severe water stress, the conservation of water is becoming a more significant sustainability metric.

In this context, Part G of Building Regulations requires new residential development to incorporate features to reduce water consumption to no greater than 125 litres/ person/ day; this compares with average water use in the UK of around 150 litres/ person/ day.

The Applicant is committed to the development of sustainable dwellings and to conserve water, will incorporate a range of water efficient fittings, and where appropriate, appliances including:

- Flow restrictors to kitchen taps, basin taps and showers
- Dual flush toilets
- Reduced capacity baths (where provided)
- Low water use appliances (where provided).

3.2.2 Flood Risk

A Flood Risk Assessment and Drainage Management Strategy have been produced by Betts Hydro Consulting engineers to support this application.

As indicated in Figure 3, the site is located in Flood Zone 1.

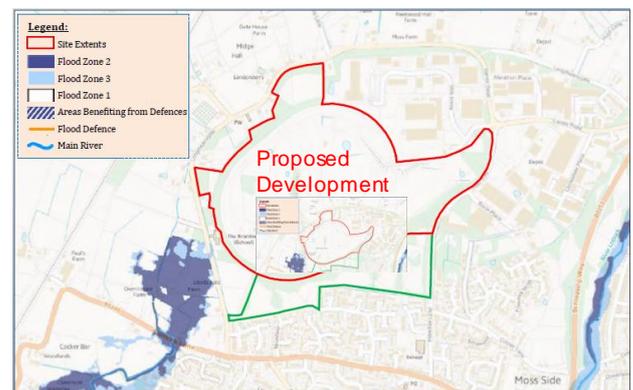


Figure 3: Environment Agency Flood Map

The report has reviewed all sources of flood risk to both the proposed development and to the existing adjacent development as a result of the proposals, including: fluvial, tidal, pluvial, groundwater, sewers and flooding from artificial sources. Overall the development is considered to be at low flood risk; however there have been some historic instances of surface water flooding within the highway to the north-west of the site. Although alleviation works have been undertaken to mitigate the potential risk, some residual risk associated with overland run-off due to inadequate capacity in the existing drainage systems remains.

It is proposed that the residual surface water risk is managed through the use of Sustainable Urban Drainage systems.

3.2.3 Surface Water

The total site covers 52.880ha, 44.100 ha of which forms the development area; this is considered to

be 20% impermeable at present. Based on the indicative masterplan for the site, the impermeable area post-development is assumed to cover approximately 53% of the development area, resulting in an increase in un-restricted run-off rates.

To A SuDs Drainage Strategy Plan has been produced for the site which consists of a network of new and expanded balancing ponds, connecting ditches and swales, and water meadow inundation zones. These will hold and safely disperse all surface and storm water collected from the site, ensuring that there is no increase in the risk of flooding at the site or the surrounding area.

The collective measures proposed are designed to cater up to and including the 1 in 100 storm event, with additional allowance for climate change.

Further information on the proposed measures can be found in the Flood Risk Assessment and Drainage Management Strategy that supports the application.

3.3 Sustainable Procurement, Construction & Waste Management

The proposed development will ensure the sustainable procurement of materials; that measures are in place to reduce the impacts of construction; and that waste is minimised and recycling is maximised during the construction and occupation of the proposed buildings.

3.3.1 Sustainable Procurement

At this stage, decisions on material specifications have yet to be made, but full consideration will be given to the responsible sourcing of materials during detailed design and construction. This will include consideration of:

- Embodied and/ or cradle-to-grave impacts of materials.
- Responsible procurement of materials such as timber.
- Sourcing from manufacturers with recognised environmental management systems in place.
- Sourcing from local supply chains to reduce transportation emissions and support the local economy.

It has been established that sourcing local suppliers is a priority where possible, supporting the local economy and reducing transport emissions.

A number of opportunities to recycle existing materials on the site have also been identified and include the reuse of:

- the test track and its granular bedding material to form new road bases; and
- the topsoil/sub-soil, which forms the acoustic earthworks surrounding the test track, within landscape areas.

3.3.2 Construction Impacts

It is not anticipated that there will be any long-standing detrimental impacts to air quality, ground water or surface water. To ensure protection of these natural resources during construction, procedures and measures will be put in place to prevent pollution.

A best practice dust mitigation plan will be implemented prior to any demolition, earthworks or construction activities being carried out. This will set out the practical measures that should be incorporated as part of a best working practice scheme, taking into account the recommendations of relevant guidance.

3.3.3 Minimising Waste

Sustainable Design - The first stage of reducing waste from new development is the use of design measures to reduce primary resource use, to help minimise waste during construction the design of the new units will aim to:

- Include measures to minimise material use through efficient design.
- Prioritise the reuse of materials from the current site and recycled materials from other sources.
- Design for and specify the use offsite pre-fabrication with production of materials in low waste environments.

These measures will help reduce primary resource use and reduce waste from the manufacture of materials and the overall development design.

Construction Waste Management - Prior to the construction phase, a plan will be developed to identify measures to minimise waste during the construction phases of the development. This is likely to include:

- The supervision of deliveries and secure storage of materials to minimise on-site damage.
- Where possible, the use of a scheme for recycling and reusing materials on site.
- Minimisation of the excavation and landscaping requirements of the proposed development by making best use of the site topography.
- Monitoring of resource use, reviewing energy and water use and putting in place measures to minimise resource use.
- Monitoring of construction material with waste stored in a dedicated storage areas, including an area provided for waste susceptible to water damage.
- Storage and labelling of waste in dedicated skips to ensure collection and storage of common waste streams to facilitate reuse and recycling.

Operational Waste Management - To encourage best-practice waste management across the development, dedicated spaces will be identified for the internal and external storage of refuse, recycling and food waste.

Each dwelling will be provided with suitable external space for the storage of both non-recyclable waste and recyclable waste, as well as dedicated storage spaces internally for general waste, recyclables and food waste to encourage residents to select the most appropriate waste routes.

Full consideration has been given to the Council's waste management infrastructure and services to ensure that residents have the necessary infrastructure to participate in kerbside recycling services.

The anticipated waste generation of each non-domestic building will be assessed during their detailed design and appropriate waste management measures will be designed to suit the specific needs of each building.

3.4 Promoting Green Infrastructure

Green infrastructure provides multiple environmental, economic and social benefits and it is in recognition of this that the proposed development seeks to protect and enhance the existing natural environment.

3.4.1 Ecological Value & Protection

An Ecological Survey and Assessment has been carried out by ERAP Consulting Ecologists to support the planning application. This concludes that the proposals can be achieved without any adverse effect on designated sites, or ecologically valuable or significant habitats.

Approximately 35ha of the site comprises the former Vehicle Test Track Area which is now abandoned and unmanaged. Other areas comprise agriculturally managed land to the north of the Vehicle Test Track Area (circa 5.8ha) and Paradise Park (circa 12.4ha) to the south. In habitat terms, the site comprises:

- Planted belts of woodland and scrub
- Established trees and shrubs along the former Doll Lane
- Fragments and copses of scrub and young trees within the Test Track site
- Semi-improved grassland
- Improved grassland
- Amenity grassland
- Hard-standing and colonising sparse ruderal herbs
- Hedgerows
- Ditches
- Ponds.

Four types of Priority Habitat occupy 3.5ha of the site and developing woodland of varying quality but with habitat connection function occupies 11.5ha of the site. The largest area of Priority Habitat is the Lowland Mixed Deciduous Woodland, with the areas of greatest quality associated with Doll Lane.

All ponds within the Vehicle Test Track Area support breeding common toad and therefore meet the criteria to be Priority Habitat.

Surveys have been undertaken to detect the presence of various protected species and animal life; of particular interest are the following:

Common Toad - The site supports a 'good' population of common toad, with ponds identified as being particularly suitable for breeding and unmanaged grassland providing optimal conditions for sheltering and feeding.

Breeding Birds - A number of bird species were recorded during surveys in 2015 and 2017. Thirty-six species were exhibiting territorial song and behaviour indicative of breeding at or near the site, seven of which are Priority Species; no nesting birds were present. All bird species present are typical of the broad habitats present and the geographical area and no rare or locally distributed species or bird species with restricted or specialised habitat requirements were recorded.

Bats - Four dusk transect surveys have been carried out, which identified four species active over the site; overall the total level of bat activity at the site is considered to be low.

Other observations made during site visits by the ecologist include that:

- No brown hares were recorded.
- There were no sightings or evidence of European hedgehog found on site, although it is considered probable that hedgehog will use the site for foraging as well as for hibernating.
- No dragonfly species were recorded, but the Common Blue Damselfly was frequent around one of the ponds.
- Eleven butterfly species, all common and typical of the habitats present and the geographical area were identified and associated with the grassland and woodland margin habitats.

3.4.2 Ecological Enhancement

A combination of conservation and enhancement of existing habitat and creation of new woodland, meadows and wetlands will provide a network of green spaces running through and connecting the site. The conservation and creation of biodiversity features and the commitment to long-term habitat management will be of benefit to fauna and species such as the common toad, nesting birds and butterflies.

The proposed SuDS network will create a variety of wetland features throughout the site; as well as forming part of the drainage network; these will provide valuable biodiversity habitats for key protected species, such as toads. They will also enhance the landscape character of the site through the creation of attractive wetland features.

3.4.3 Health & Wellbeing

According to a report published in 2014 by Public Health England³, there is growing evidence of the health benefits of access to good quality green spaces. These benefits include better self-rated health; lower body mass index and obesity levels; improved mental health and wellbeing; and increased longevity. The report concludes that increasing the use of good quality green space for all social groups is likely to improve health outcomes and reduce health inequalities. It can also bring other benefits such as greater community cohesion and reduced social isolation.

The creation of a pleasant and desirable environment for new and existing residents, by setting aside land for woodlands, ponds, footpaths and cycle trails, will help to support local health and wellbeing.

Village squares and tree lined streets will be introduced throughout the development to create a leafy suburban feel and encouraging community interaction. The former Doll Lane will be reinstated as a new footpath, cycleway and bridleway, creating a key route through the neighbourhood and providing an attractive route for sustainable travel and exercise.

3.5 A Sustainable Location

Key to sustainable development are locations which have good access to services, amenities and employment opportunities and are accessible by a range of sustainable transport measures. The proposed development at Leyland Test Track will support both existing communities

3.5.1 Sustainable Transport

A transport assessment has been produced by SCP, which states that the access strategy for the site is consistent with that detailed in the Masterplan Vision document.

The Masterplan Vision established a route hierarchy in conjunction with the Green Infrastructure network and forms the basis of the layout of Doll Lane. The primary element is the Avenue, which takes the form of a wide street, flanked by homes and street trees. It will include a footpath/cycleway which links the residential

³ Public Health England (2014). Local action on Health Inequalities: Improving Access to Green Spaces

neighbourhood to all the existing surrounding facilities.

In addition, new cycle and footpaths within the site will connect to the surrounding area, and a comprehensive Bridleway network will also be provided. Within the site, these paths and trails offer a choice of routes, either linked to multi-modal traffic routes or via the Green Infrastructure network, offering standalone 'leisure' routes through and around the development.

The inclusion of clearly defined and well lit public, private and semi-private spaces and well defined routes also provides opportunities for natural surveillance, minimising the vulnerability of the development to crime and anti-social behaviour; the development will also adopt the principles of Secured by Design to reinforce this principle.

3.5.2 Economic Impact

A long term economic boost will be delivered in the local area by attracting new residents to Leyland which will increase footfall in the Town Centre, increasing spending in local businesses and services.

Space for new businesses, totalling 6.08 hectares, could include a mix of light industrial and distribution uses, and offices. The new local centre, providing facilities such as a primary school, medical centre and local retail will total a further 1.85 hectares, providing local employment opportunities.

It is estimated that 130 gross direct full time equivalent jobs will be created during the construction of the development, and a further 750 gross full time equivalent jobs will result from its operation. During the construction and operation phases, the scheme will add £16.1 million in GVA to the local area and £47.3million to the wider area.

4. Conclusion

This Sustainability Statement demonstrates the measures incorporated into the proposed development to deliver a sustainable new residential development at Leyland Test Track.

The proposed new development at Leyland Test Track supports the sustainability objectives of the local and national policy and will deliver a sustainable new residential-led development.

Key measures are noted below to demonstrate how the principles of sustainable development set out in local and national policy will be implemented at the proposed development:

- The Energy Hierarchy will be adopted, ensuring the delivery of energy efficient homes that prioritise passive measures and energy efficiency in meeting the requirements of Building Regulations.
- Measures will be put in place during construction to reduce waste, prevent pollution, and to source materials responsibly.

- The new dwellings will include the installation of water efficient fixtures and fittings to reduce water consumption.
- The development is sited within Flood Zone 1 and incorporates a mixture of sustainable urban drainage techniques to reduce the potential for surface water flooding.
- The provision of extensive high-quality blue and green infrastructure will also support existing biodiversity and enhance the wellbeing of residents.
- Proposals to enhance pedestrian, cycle and bridleway links within the site and to the surrounding areas will encourage sustainable methods of transport and provide better connectivity to well-established local services and facilities.

In conclusion, the proposed development at Leyland Test Track will meet the requirements of national and local sustainability policy and deliver a sustainable new residential led development.

Turley Sustainability

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