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WORLD OF PETS AND LEISURE, TIMPERLEY

SUSTAINABILITY AND ENERGY STATEMENT

SEPTEMBER 2021 REF: 2019.019



ELEMENT SUSTAINABILITY – ISSUE NOTES

Project No:	2019.019
Title:	Sustainability and Energy Statement
Site:	World of Pets and Leisure, Timperley
Client:	Harlex Property
Status:	Final

Version:	1.1		
Date:	16 th September 2020		
Prepared by:	Checked by:	Approved by:	

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Version	sion Issue Notes		lssuer
0.0	Draft for client comment	24 th July 2020	КН
1.0	Final version issued following minor edits	19 th August 2020	КН
1.1	Update following amendments to masterplan and update to local planning policies	16 th September 2021	КН



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1. INTRODUCTION

Element Sustainability has been commissioned by Harlex Property to review the sustainability performance of the proposed residential development on land off Thorley Lane at the former site of World of Pets and Leisure in support of an outline planning application.

The purpose of this statement is to summarise the relevant policy background and requirements of Trafford Council (hereafter referred to as the council) and demonstrate the ways in which these policies may be addressed through the proposals, ensuring all practicable measures will be taken in order to deliver a sustainable development at this site.

Details of the design attributes, specifications and characteristics that may be implemented within the scheme are appraised to demonstrate how the proposals may contribute to sustainable development in the Metropolitan Borough of Trafford and would seek to mitigate the environmental impacts of the development.



2. DEVELOPMENT PROPOSALS

2.1 Development Site Description

The proposed development site comprises approximately 2.9ha. of land situated within a predominantly residential area of Timperley, Altrincham. The site formerly accommodated the World of Pets and Leisure and World of Water aquatics Centre, associated car parking, storage areas and fields. The site is bound by Timperley Brook to the south and residential developments to the north and west. Fields form the immediate boundaries of the proposed development site to the south and east (see Figure 2.1).

Located approximately 2.5km from Altrincham town centre, the site is situated in the Green Belt area of Timperley and includes a wildlife corridor through the southern extent of the development plot. It is also located within an area known as the Timperley Wedge that has been identified within the Draft Places for Everyone Joint Development Plan for removal from the Green Belt allocation.

Figure 2.1 – Pre-development Site



2.2 Development Proposals

The outline application forms part of the Timperley Wedge Allocation masterplan and demonstrates how it could deliver up to one-hundred and sixteen residential dwellings with associated highways, infrastructure, and landscaped areas. The indicative masterplan layout (see Figure 2.2) displays a mixture of dwellings, indicating how the site could be appropriately developed with all matters reserved aside from access, for which detailed consent is sought.

Hard and soft landscaped shared amenity areas will be designed to enrich the development and incorporate sustainable urban drainage initiatives. The intention is to maintain the Timperley Brook wildlife corridor through the southern extent of the plot and incorporate an attenuation pond within



this area to a form a park amenity space for residents to enjoy whilst supporting wildlife and biodiversity within the site.

Figure 2.2 – Indicative Masterplan Layout





3. POLICY REVIEW

3.1 Local Planning Policy

Energy performance of new buildings in the Borough of Trafford is guided, in part, by policies contained within the Trafford Core Strategy of the **Trafford Local Development Framework** – DPD1 Core Strategy (adopted January 2012). This contains the following relevant policies:

Policy L5: Climate Change requires new development to mitigate and reduce its impact on climate change factors.

CO₂ Emissions Reduction

Major built development proposals (for residential development, this means equal to or greater than 10 units) will be required to demonstrate how they will seek to minimise their contribution towards and/or mitigate their effects on climate change, in line with both national standards and local opportunities and programmes.

Spatial Areas have been identified within the borough which have distinct opportunities for major development to deliver different CO₂ reduction targets, as follows:

- Low Carbon Growth Areas (LCGAs) where there is potential to deliver CO₂ reduction target of up to 15% above current Building Regulations; and
- Outside LCGAs where there is potential to deliver CO₂ reduction target of up to 5% above current Building Regulations.

Low Carbon Growth Areas have been established at the following locations within the borough:

- Altrincham;
- Carrington;
- Old Trafford; and,
- Trafford Park

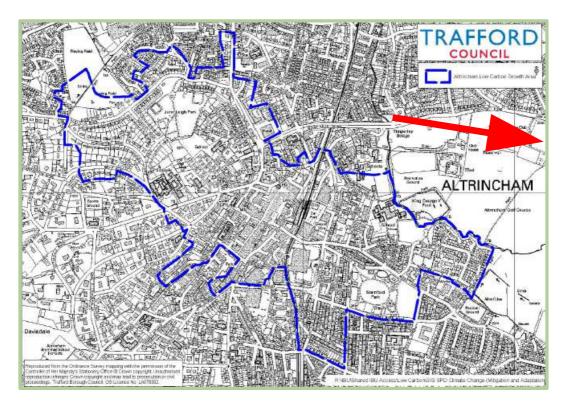
The application site is located approximately 1 kilometre from the south east boundary of the designated Altrincham Low Carbon Growth Area which is the nearest LCGA to the development.

The 5% CO₂ reduction target is therefore applicable to this site.

Figure 3.1 illustrates the approximate site location relative to the Altrincham LCGA.



Figure 3.1 – Altrincham Low Carbon Growth Area Map



Pollution

Development that has potential to cause adverse pollution (of air, light, water, ground), noise or vibration will not be permitted unless it can be demonstrated that adequate mitigation measures can be put in place.

Water

Developers will be required to demonstrate, where necessary by an appropriate Flood Risk Assessment (FRA). They will also be required to improve water efficiency and reduce surface water run-off through the use of appropriate measures such as rainwater harvesting, water recycling and other Sustainable Drainage Systems (SUDS)

SPD1: Planning Obligations Technical Note 3 is an accompanying document to **Policy L5: Climate Change** and summarises a range of climate change adaption measures to help developers ensure that their development is resilient to changes in the climate including:

- Use of Sustainable Drainage Systems;
- Green roofs; and,
- Enhancing tree cover.

Flood Risk

The SPD1: Planning Obligations Technical Note 3 also addressed development within Critical Drainage Areas and recommends the following:



ELEMENT SUSTAINABILITY

- A detailed Flood Risk Assessment; and,
- Development should aim to deliver Greenfield runoff on Greenfield sites up to a 1 in 100-year storm event, considering climate change;

Policy L4: Sustainable Transport and Accessibility requires development to prepare Transport Assessments and Travel Plans in order to achieve a balanced and integrated transport network which makes the most efficient and effective use of road, rail and water transport.

Policy L7: Design is a key element to making places better and delivering environmentally sustainable developments. This includes:

- Providing appropriate provision of (and access to) waste recycling facilities, preferably on site;
- Demonstrating that development it is designed in a way that reduces opportunities for crime; and,
- Providing good connections within the site and to adjoining areas.

3.2 Climate Emergency

A **Climate Emergency** was declared by Trafford Council on the 28th November 2018 in response to the findings of the Intergovernmental Panel on Climate Change (IPCC) report. The Council believe that there is serious risk to Trafford of climate change affecting economic, social systems, environmental wellbeing and supply chains – including food security, financial systems and local weather, amongst many other implications.

3.3 Emerging Policies

The previous Draft Greater Manchester Spatial Framework 2020 has been superseded following Stockport Council's decision to withdraw from the GMSF in December 2020. The Draft 'Places for Everyone' Plan is a new long-term plan of nine Greater Manchester districts (Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan) for jobs, new homes, and sustainable growth. It has been prepared by the GMCA on behalf of the nine districts.

The Draft Plan will determine the kind of development that takes place across the city-region, maximising the use of brownfield land and urban spaces while protecting green belt land from the risk of unplanned development.

It will also ensure all new developments are sustainably integrated into Greater Manchester's transport network or supported by new infrastructure.

A final period of public consultation is taking place with regards to the Draft 'Places for Everyone' Plan between 9 August 2021 and 3 October 2021. Following this there is an intention to submit the Plan to the Secretary of State. It is therefore considered that the Plan is in an advanced stage of preparation and will hold some weight in the determination of planning applications within Greater Manchester. The Places for Everyone Plan contains the following relevant emerging policies:

Policy JP Allocation 3.2 - **Timperley Wedge** outlines the emerging requirements for the allocation of land for development within the Timperley Wedge. Development of this site will be required to:



• Be in accordance with a masterplan or Supplementary Planning Document (SPD) that has been approved by the Local Planning Authority;

Residential Development

• Deliver around 2,500 homes of which 1,700 will be in the plan period as set out in the Allocation Policy Plan;

Transport Integration and Accessibility

- Deliver accessible streets which prioritise cycling, walking and public transport over the private car;
- Deliver a network of new safe cycling and walking routes through the allocation, including enhancements of Brooks Drive and creating new/enhancing existing Public Rights of Way;

Green Belt

- Create defensible Green Belt boundaries utilising, where appropriate, existing landscape features;
- Mitigate any impact on and improve the environmental quality and accessibility of remaining Green Belt land;

Green Infrastructure

- Create wildlife corridors and steppingstone habitats within the development areas to support nature recovery networks, provide ecosystem services and accessible green infrastructure including green links;
- Provide a range of types and sizes of open space within the allocation boundary in accordance with the Council's open space standards, including local parks and gardens; natural and semi-natural greenspace, equipped and informal play areas; outdoor sports pitches and allotment plots, ensuring arrangements for their long-term maintenance;

Natural Environment

- Protect and enhance natural environment assets within the site and surrounding area, including SBIs, woodland and hedgerows;
- Deliver a clear and measurable net gain in biodiversity, including provision for long-term management of habitats and geological features which may include SUDs systems of high biodiversity value created as part of the overall flood risk and drainage strategy;
- Protect and enhance the habitats and corridors along Fairywell Brook and Timperley Brook to improve the existing water quality and seek to achieve 'good' status as required under the northwest River Basin management plan (2019);



Landscape

- Retain important landscape views and landscape features such as ponds, woodland and hedgerows and use these features to develop a distinct sense of place;
- Provide appropriate landscape buffers across the site, including a substantial landscape buffer along the Green Belt boundary to mitigate the impact on the rural landscape to the southwest of the allocation area;

Design

- Ensure new development is place-led, creative and contextual in its response, respecting the local character and positive local design features of the area;
- Be in accordance with the Council's adopted Design Guide embracing strategic design principles, including creating connected communities, redefining streets, delivering inclusive characterful design and responding to heritage;

Utilities, Environmental Protection and Climate Change

- Mitigate the impacts of climate change and utilise the most energy and water efficient technologies to achieve zero carbon by 2028;
- Explore and deliver the most appropriate solutions to providing decentralised low carbon heat and energy as part of new residential and employment development. This will include exploring the potential for the development of district heat, cooling and energy networks, energy centres, the implementation of renewable and low carbon heat and energy technologies in design;
- Ensure new development maximizes on-site renewable energy measures in line with the energy hierarchy, for example, via solar PV and other low carbon technologies;
- Make provision for other necessary infrastructure such as utilities, full fibre broadband and electric vehicle charging points;
- Mitigate flood risk and surface water management issues including provision of SUDS through the design and layout of development in accordance with a flood risk, foul and surface water management strategy;
- Incorporate on-site measures to deal with surface water and control the rate of surface water runoff. Planning applications will be expected to apply the full surface hierarchy and ensure water is managed close to where it falls by mimicking the natural drainage solution;
- Seek to actively reduce the impact of potential flood risk both within and beyond the site;
- Incorporate appropriate noise and air quality mitigation, such as woodland buffers, particularly along the M56 motorway, the Metrolink and HS2/NPR corridor in line with Environmental (Noise) Regulations



Policy JP-S 2 Carbon and Energy aims to deliver a carbon neutral Greater Manchester no later than 2038, with a dramatic reduction in greenhouse gas emissions. There is an expectation that new development will:

- a) Be zero net carbon from 2028 by following the energy hierarchy (with any residual carbon emissions offset), which in order of importance seeks to:
 - I. Minimise energy demand;
 - II. Maximise energy efficiency;
 - III. Utilise renewable energy;
 - IV. Utilise low carbon energy; and
 - V. Utilise other energy sources.

With an interim requirement that all new dwellings should seek a 19% carbon reduction against Part L of the 2013 Building Regulations, or until such time that this level is superseded by changes to national building regulation.

- b) Incorporate adequate electric vehicle charging points to meet likely long-term demand;
- c) Where practicable, connect to a renewable/low carbon heat and energy network;
- d) Achieve energy demand reductions for residential development in terms of space heat demand; hot water energy demand and the delivery of on-site renewable energy generation.

For renewable energy generation priority should be given to PV installation where technically feasible, alternative technologies will be appropriate where the equivalent generation is evidenced.

e) Include a detailed energy statement to demonstrate via site relevant evidence how the development has sought to maximise reductions in carbon emissions in line with relevant policy targets, including the minimisation of overheating risks and appropriate measures for post occupancy evaluation. Whole life cycle emissions should be considered where possible.

3.4 National Planning Policy

In addition to the local planning policies, the National Planning Policy Framework (NPPF) 2021 is a material consideration. The NPPF (amended July 2021) replaces all previous PPSs and PPGs.

The NPPF states that the planning system should play an active role in guiding development to sustainable solutions. At the heart of the 2021 updated NPPF lies the 'presumption' in favour of sustainable development; the golden thread running through plan-making and decision taking (para. 11). There are three dimensions to sustainable development, as stated within the NPPF: economic, social and environmental. These dimensions give rise to the need for the planning system to perform a number of roles:

An economic role – contributing to building a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure;



A social role – supporting strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating beautiful and safe places, with accessible local services that reflect the community's needs and support its health, social and cultural well-being; and

An environmental role – contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.

These dimensions are considered to be mutually dependent with the NPPF, in its entirety, defining sustainable development.

The NPPF states that 'the purpose of the planning system is to contribute to the achievement of sustainable development' (paragraph 7). It summarises the objective of sustainable development as meeting the needs of the present without compromising the ability of future generations to meet their needs. It goes on to state that at a similarly high level, members of the United Nations – including the United Kingdom – have agreed to pursue the 17 Global Goals for Sustainable Development in the period to 2030. These address social progress, economic well-being and environmental protection.

3.5 Regulatory Framework

3.5.1 Building Regulations

Building Regulations, Part L - Conservation of Fuel and Power sets the compliance standards for energy demand and carbon dioxide emissions from buildings. Guidance on how to meet the requirements of this regulation is provided within a number of approved documents. The relevant documents are referenced below:

Approved Document L1A addresses the conservation of fuel and power in new dwellings. The proposed development may be registered against Building Regulations, Part L (2013) which requires all newly constructed dwellings need to comply with 5 criteria set out in Approved Document L1A, unless exempted through the transitional provisions:

- I. The predicted rate of carbon dioxide emissions from the dwelling (the Dwellings Emission Rate DER) is not greater than the Target Emissions Rate (TER). Additionally, the Dwelling Fabric Energy Efficiency (DFEE) is not greater than the Target Fabric Energy Efficiency (TFEE);
- II. The performance of the building fabric and fixed building services should be no worse than the design limits set out in Table 2 of the Approved Document;
- III. The dwelling has appropriate passive control measures to limit the effect of solar gains on indoor temperatures in summer;
- IV. The performance of the dwelling as built, is consistent with the DER, including site checking that the air permeability is within reasonable limits; and
- V. The necessary provisions for energy efficient operation of the dwelling are put in place including operating and maintenance instructions aimed at achieving economy in the use of fuel and power in a way that householders can understand.



Approved Document L1A (2021) standards will come into effect in June 2022. Emerging Part L 2021 standards are expected to reduce dwelling carbon emissions by 31% in relation to Building Regulations Part L, 2013. The criteria for Fabric Energy Efficiency has also become significantly more onerous to achieve relative to current Part L1A (2013) building standards. The proposed development could be designed to meet the criteria of the upcoming 2021 regulations as well as the new metric being introduced for Primary Energy Rate.

It is understood that all energy efficiency targets stipulated under local planning policy will still apply to the proposed development under the prevailing Building Regulations (subject to transitional arrangements). Key dates in the implementation of upcoming Building Regulations are as follows:

- December 2021 Interim uplift Part L, F and Overheating Regulations are published
- June 2022 Interim uplift Part L, F and Overheating Regulations come into legislation
- Spring 2023 Consultation on Future Homes Standard
- 2024 Future Buildings Standard published
- 2025 Future Buildings Standard comes into force



4. SUSTAINABILITY PERFORMANCE

This report section provides an appraisal of the outline development proposals and details the approach, design features and specifications which could reduce the environmental impact of this scheme.

The proposals have the potential to ensure this scheme contributes to sustainable development whilst meeting the Council's policy aims throughout both the construction stage and the future occupation of the development. The following sustainability performance categories are considered herein:

- Energy and CO₂ emissions;
- Water and Surface Water Run-off;
- Materials;
 - Waste management;

- Health and wellbeing;
- Landscape and Biodiversity; and,
- Location and transport.

4.1 Energy

In order to limit energy demand and associated carbon dioxide (CO_2) emissions from the operation of the new dwellings, the following design features could be integrated within the scheme to enable the occupants to lead a low environmental impact lifestyle:

4.1.1 Energy Strategy

- A fabric led approach to emissions reduction at this site allied with efficient mechanical and electrical systems, designed in accordance with the principles of the Energy Hierarchy;
- The proposed energy strategy should provide improvements in the energy performance of the building above national building regulations Part L1A (2013) criteria in relation to heating energy demand, primary energy consumption and carbon dioxide and could incorporate the following measures:
 - o Significantly enhanced building fabric specification; and,
 - Renewable energy and low carbon technologies including wastewater heat recovery systems and solar (photovoltaic) modules.

Further details of the potential approach to reducing the energy demand and associated carbon dioxide emissions of the dwellings are presented in Section 5.

4.1.2 General Principles

• Provision of A and A+ rated white goods (where applicable);



- Provision of energy efficiency labelling scheme details to inform decision making when purchasing energy efficiency white goods.
- Space and equipment provided for drying of clothes;
- 100% low energy and/or LED internal lighting;
- All external space lighting provided by dedicated energy efficient fittings and controls;
- Individual cycle storage provided for each dwelling to promote more sustainable modes of transport;
- Electric vehicle charging points provided on all parking bays for the houses, with an allowance for electric vehicle charging points for the apartment block parking provisions; and,
- Provision of home office services and space within each dwelling to reduce the need for commuting to work.

4.2 Water

The buildings will be designed to reduce mains/potable water consumption and will include water efficient devices and equipment as per the following:

- A water efficiency strategy will be determined for the site. This will include 'A' rated appliances (where provided);
- Specification of water-efficient fixtures throughout the scheme (low flow taps and showers, dual flush WCs and low volume baths);
- In order to reduce the demand, the sanitary fixtures would be specified to achieve a calculated daily consumption below the regulatory compliance standard, of no more than 105 litres/person/day; and,
- The landscaped areas of the development would be irrigated solely by precipitation throughout all seasons of the year to reduce unregulated water consumption. Private landscaped areas could be irrigated with water from individual water butts to further reduce potable water consumption and promote the recycling of rainwater.

4.3 Materials

This development presents an opportunity to contribute towards more efficient use of non-renewable material resources, thus reducing the lifecycle impact of materials used in construction. This could be demonstrated by the selection of:

- Materials with low environmental impact throughout their lifecycle;
- Materials responsibly sourced from suppliers operating an Environmental Management System or procuring timber from FSC and PEFC sources; and,



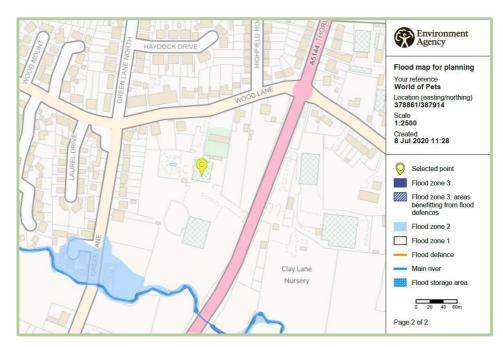
• Construction materials procured from local sources where feasible, which will contribute to the retention of the local housing characteristics of the area and minimise the impact of carbon dioxide emissions associated with the transportation of materials.

4.4 Surface Water Run-off

Flood Risk -

• The majority of the development site benefits from being located in a Low Flood Risk Zone. Data provided on the Environment Agency website confirms the development has a low probability of flooding and lies within Zone 1 for the most part (see Figure 4.1). There is a small area around Timperley Brook to the south end of the site that is located in Flood Risk Zone 2 and 3.

Figure 4.1 – Flood Risk Map



On Site Surface Water Management -

Curtins Limited have carried out a Flood Risk Assessment to minimise the risk and impact of localised flooding on and off-site, as well as associated environmental damage. The report concludes that the site is not at risk of flooding and will result in a betterment over the existing scenario with the inclusion of SuDS and controlled flows. The proposed development site will accord with the following measures:

- On-site surface water will be managed through SUDs techniques to limit the discharge of surface water off-site to 6.38l/s. Allied with an attenuation pond and swales, the proposals will provide sufficient on-site attenuation up to the 1 in 100 year rainfall event with a 30% allowance for climate change; and,
- The detailed design of this strategy will limit surface water discharge to be no greater than previous green-field run-off rates.



4.5 Waste Management

Construction Waste -

Best practice techniques to prevent and minimise waste during the design and construction phases of the development could be adopted, as follows:

- A site waste management plan (SWMP) prior to commencement of the above ground construction phase produced by the developer. This would contain procedures for waste minimisation, as well as optimisation of waste recovery and recycling, in accordance with the Waste Hierarchy. The SWMP would limit the on and off-site environmental impacts of construction and would detail:
 - o Recycled and secondary materials;
 - o Waste reduction;
 - o Waste segregation;
 - o Waste recovery; and,
 - o Waste disposal.
 - A site waste management plan to identify opportunities to minimise waste generation and divert at least 85% of construction waste from landfill; and,
 - Promote the minimisation of waste from the site development and seek to maximise the use of recycled materials in construction.

Domestic Waste -

The dwellings will provide infrastructure and facilities that meet the need of the residents for segregated waste storage, thereby optimising the ability to recycle waste:

• Recycling bin storage provisions will enable residents to make full use of Local Authority recycling services.

4.6 Pollution

To reduce emissions of gases with high global warming potential (GWP) into the atmosphere, the new build dwellings could be specified with:

• Insulating materials that have a GWP of less than 5 throughout the development to reduce the construction phase impact of this scheme.

Additionally, the following measures would be implemented:

• Pollution Prevention Guidance will be adhered to with respect to air (dust) and water (ground and surface) pollution during the demolition and construction phases;



• External light fittings may be controlled through a time switch and daylight sensor to prevent operation during daylight hours. This would limit the impact of artificial lighting for the development's residents and surrounding natural environment; and,

Excess noise can have a significant impact on local ecology as well as human physical and psychological health therefore, the impact of sound associated with the occupied development will be mitigated by the design and specification of the dwellings. Sound insulation would be specified to achieve Building Regulation Part E compliance (this to be verified by pre-completion testing). Furthermore, the landscaping proposals include for the retention and planting of new trees, new hedgerows and shrubbery around the site borders. These measures will help to further buffer any noise generated by the development.

4.7 Health and Wellbeing

To enable the occupants of the new build homes to lead lower environmental impact lifestyles and enhance their quality of life, the following measures may be delivered at the proposed development:

- Good levels of natural day lighting within the dwellings. This would provide a good quality of life for the occupants and reduce the need for energy to light the dwellings;
- Private outdoor space in the form of individual rear gardens as well as communal green space and a park would encourage residents to access the outdoors, thereby creating a more socially sustainable residential development;
- The landscaped areas will also facilitate natural surveillance and create busy, overlooked routes at the site to reduce the opportunity for crime, creating a safer and more secure environment; and,
- Compliance with National Space Standards, to ensure that all dwellings are of a sufficient size, provide flexibility and comfort for the future occupants and can easily be adapted to meet the needs of wheelchair users.

4.8 Construction Management

In order to minimise the impact of the development during construction and operation, whilst providing a safe place to live, the proposals have the ability to provide:

- A secure development with adopted crime prevention measures to assist in reducing the opportunity for, and fear of, crime; and,
- Minimal construction site impacts and adoption of best practice policies in respect of air and water pollution.

4.9 Ecology and Land Use

Land Use



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• The proposed development would make effective use of land in meeting the need for homes and other uses while safeguarding and improving the environment, ensuring safe and healthy living conditions.

Ecology

An Ecological Impact Assessment has been prepared by Tyler Grange for the World of Pets site and confirms that habitats of local and ecological importance are to be retained where possible while maximising the use of native species within the landscaping proposals. The assessment recommends measures to maintain the connectivity for wildlife throughout the site including provisions such as hedgehog highways.

Landscaping

The landscaping proposals (see Figure 4.2) developed by Barnes Walker Ltd provide an opportunity to deliver a clear and measurable net gain in biodiversity. Measures have been incorporated into the landscaping designs to secure this including:

- Maintenance of the existing wildlife corridor that runs through the southern edge of the site;
- Soft landscaping including native planting, hedgerows, trees and shrubs of local progeny that support blossoms and fruit to support invertebrates. This will also encourage foraging birds and bats.



Figure 4.2 – Landscaping Proposals

This abundance of green infrastructure within the area would enhance the biodiversity and further measures could also include:

- Bird and bat boxes erected onto retained trees wherever possible; and,
- Bee Bricks incorporated into the new buildings, on south-facing walls to help sustain the local bee population.



Furthermore, the landscaping proposals will also assist in flood management, maintaining the blue infrastructure of the borough. Measures employed would include swales that line roads throughout the development in combination with an attenuation pond. The pond edges are to be given over to wildlife to provide additional habitat and shelter. Furthermore, there is potential for the attenuation pond to be sculpted ecologically, providing shallow shelves to allow amphibian access.

4.10 Transport

To enhance the sustainability credentials of the site, a Transport Assessment has been prepared by Curtins and concludes that:

- The proposed development is well-situated to benefit from surrounding facilities and amenities for residential uses; and,
- The public transport accessibility score (GMAL) rating for the site ranges between 2 and 3.

Transport Links –

The proposed site is in a sustainable location in relation to cycling and key pedestrian and public transport routes:

- <u>Bus</u> The nearest bus stops are located 350m away from the site along Wood Lane and Green Lane. These stops provide frequent services to into Altrincham, Timperley and Stockport where further connections can be accessed.
- <u>Rail</u> The nearest railway station is Navigation Road Station which is approximately 2.4km from the development site. The station regularly services to destinations including Manchester Piccadilly and Chester. Residents can also access the Metrolink at this station.
- <u>Cycle</u> There are cycle networks close to the proposed development that residents could easily take advantage of and many of the local roads are suitable for cycling. Cycling will also be encouraged through the provision of cycle storage in accordance with local authority guidelines.
- <u>Pedestrian</u> The development location is suitable and accessible by foot and the proposed improved pathway links would strengthen the connectivity on the site for pedestrians.

Encouraging sustainable modes of transport, the development could also incorporate active charging points in parking bays for electric vehicles (EVs) with an additional provision of EV charging points for the proposed apartments.

Travel Plan -

Further enhancing the sustainable credentials of the proposal, the site is underpinned by a Travel Plan prepared by Curtins to encourage sustainable modes of transport.

• This plan seeks to promote existing transport routes, complement the sustainable location of the site and meet the needs of future residents and visitors.

Local Amenity Access -

• The site location benefits from very good links to local amenity space, recreational and educational facilities such as:



- <u>Recreational Space</u> There is significant green space within walking distance of the site for residents to enjoy including Timperley Brook and facilities such as Altrincham Golf Course and Bowdon Rugby Club.
- <u>Local Amenities</u> The town centre attractions and amenities of Timperley and Altrincham can be easily reached via public transport nodes.
- <u>Education</u> There are several nurseries within a 1km vicinity of the site including Thorley Day Nursery and Kids Unlimited. Cloverlea Primary School is just 600m north of the proposed development with Altrincham College just 750m south of the site.

Disability Access -

• Disabled access provision within the scheme itself will be in accordance with Building Regulation, Part M criteria as far as possible.



5. ENERGY STRATEGY

An overview of the potential energy strategy for this outline application, which could include an enhanced 'fabric led' approach to dwelling emission rate reduction combined with efficient mechanical and electrical servicing and low carbon/renewable technologies, are reviewed below.

Priority is given to reducing energy demand and the associated carbon emissions as required by Trafford Council by means of on-site measures and applying the principles of the energy hierarchy. This scheme has the potential to deliver:

- 35% reduction in dwelling CO₂ emissions on site; and,
- A further opportunity to deliver a net zero carbon development by means of offsetting remaining on-site regulated emissions through an offset fund.

5.1 Local Planning Policy Targets

Policy L5: Climate Change requires new development to mitigate and reduce its impact on climate change factors.

CO₂ Emissions Reduction

Spatial Areas have been identified within the borough which have distinct opportunities for major development to deliver different CO₂ reduction targets, as follows:

- Low Carbon Growth Areas (LCGAs) where there is potential to deliver CO₂ reduction target of up to 15% above current Building Regulations; and
- Outside LCGAs where there is potential to deliver CO₂ reduction target of up to 5% above current Building Regulations.

The application site is located approximately 1 kilometre from the south east boundary of the designated Altrincham Low Carbon Growth Area which is the nearest LCGA to the development.

The 5% CO₂ reduction target is therefore applicable to this site.

The Greater Manchester Spatial Framework 2019 (Draft) contains the following relevant emerging policies:

Policy GM-S 2 Carbon and Energy aims to deliver a carbon neutral Greater Manchester no later than 2038, with a dramatic reduction in greenhouse gas emissions. There is an expectation that new development will comply with the following:

• An interim requirement that all new dwellings should seek a 19% carbon reduction against Part L of the 2013 Building Regulations.



5.2 Build Fabric and Thermal Performance

A combination of enhanced building fabric specification (significantly beyond the regulatory compliance standard), efficient mechanical and-electrical systems and controls could be a potential approach to achieve compliance with Part L of the building regulations and secure an onsite 35% dwelling emission rate reduction.

The standard measurement of heat transfer through a given building material or construction type is the U-value (W/m^2K). In buildings, heat loss generally occurs through the following areas and elements of the construction:

- Ground Floor;
- External Walls;
- Roofs;
- Doors and windows;
- Thermal (cold) Bridging (heat loss through construction joints); and
- Uncontrolled ventilation.

The lower the U-value, the more slowly heat transfers out, and is therefore lost, from a building. The material specification could be designed with low U-values to limit heat loss and ensure efficient operation of the dwellings. The dwellings' specification could be designed to provide some of the following benefits:

- High performance thermal insulation will ensure low U-values for all heat loss elements;
- Thermally efficient, double glazed windows with argon gas fill and low emissivity coatings to limit heat loss through the panes. Thermal breaks incorporated within the frame would further limit heat loss. The glazing G-Value can be specified to optimise beneficial solar gains but limit the propensity for the dwellings to overheat;
- Low air permeability targets for all house and apartment types in order to minimise uncontrolled ventilation. This would reduce heat losses and provide high levels of occupant comfort. Focus on the quality of the build is vital to deliver airtight buildings;
- Wastewater heat recovery systems could lower the (carbon dioxide) dwelling emissions rate for the buildings. This acts as a pre-heat to the incoming cold-water feed for the boilers whilst the showers are in operation. These systems passively recover waste heat energy, reducing energy loads for hot water and consequently
- Gas fuelled, condensing boilers would ensure space and water heating is delivered efficiently;
- **Sophisticated controls** would ensure the efficient delivery of heat from the condensing boilers will further reduce the dwellings' energy demand;
- No mechanical cooling would be required for the dwellings. The dwellings are not considered to be at risk from overheating due to the orientation of the buildings and openable windows; and,
- Attention to cold bridging junctions including the provision of insulation to reduce heat and limit heat losses that occur at the junctions between building elements and around openings. This would significantly improve the emission rate of the dwellings.



The above specifications would help deliver an energy efficient development that achieves an emission rate reduction and fabric energy efficiency performance beyond the requirements set by building regulation Part L1A, 2013, the Trafford Core Strategy and Places for Everyone JDP.

5.3 Low and Zero Carbon Energy Provision

The enhanced fabric specification could be supplemented by renewable energy technology as part of the site wide energy strategy to optimise the on-site dwelling emission rate reductions by up to 35%. To ensure the selection of the most appropriate solutions, several renewable energy technologies have been considered for this site, including:

- Combined Heat and Power (CHP);
- District Heating;
- Solar Hot Water (SHW);
- Photovoltaics (PV);
- Wind;
- Ground Source Heat Pumps (GSHP); and
- Biomass heating.

A review of the development proposals and site location concludes that two of these options are feasible for the scheme at this time, as detailed below:

***** Combined Heat and Power (CHP) is effectively an on-site mini power plant providing both electrical power and thermal heat energy. It is an energy efficient and low carbon measure rather than a renewable energy technology. A CHP system operates by burning a primary fuel (normally natural gas) by use of either a reciprocating engine or turbine, which in turn drives an alternator to generate electrical power. The heat emitted by the engine and exhaust gases is recovered and used to heat the building or to provide hot water.

The viability of CHP is dependent upon the buildings base load requirements for both heat and power. Buildings with high heat / hot water demands and constant power demands lend themselves to CHP. This proposed scheme at the World of Pets has neither of these. Given there will be a very low space heating and hot water demand at the development, the commercial viability of this type of system cannot be proven.

✓ **District Heating** systems provide multiple buildings or dwellings with heat and hot water from a central boiler house, or 'energy centre'. The system can provide heating or cooling which is transferred from the energy centre through a network of highly insulated pipes carrying the heated water to each dwelling.

The Timperley Wedge masterplan identifies the development as within an area of opportunity for potential future connections to a heat and energy networks. However, there are currently no existing networks local to the site. Provision of infrastructure for a potential future connection to a planned DHN would limit the dwelling heating and hot water designs to a complex centralised, wet systems. In turn, this would add significant additional capital costs as a consequence of metering and distribution network requirements as well as increased management and ongoing maintenance costs. Furthermore, given the trajectory of the UK electricity grid towards zero carbon power within the next ten years, the relative environmental benefit of electric systems in relation to a district heat network is unclear. Nevertheless, this opportunity may be reviewed should the reserved matters application be progressed at a later date.



***** Solar Hot Water utilises the energy in sunlight and diffuses daylight to heat water for use in buildings. The main component of any solar water heating system is the collector, which absorbs the radiant energy of the sun and converts it to heat energy. Solar thermal is considered to be a technically feasible option for the residential buildings but is discounted on the grounds of viability. Available roof space would be better utilised for PV panels which offer a better energy yield and emissions reduction per pound (£) of capital expenditure. Furthermore, there are numerous technical constraints associated with integrating solar thermal within buildings.

 \checkmark Photovoltaic (PV) panels harness solar thermal energy and convert it into electricity which can then be used within a building. The panels may be roof mounted and orientated in a southerly direction to enable this technology to operate efficiently. This technology is considered to be a feasible option for this site.

***** Ground Source Heat Pumps collect low-grade heat from the ground to supply useful heat for space and water heating requirements. By applying additional energy input (in the form of electricity), it is possible to raise the temperature of the source heat to the temperature required. Such technology is considered unsuitable for this site due to prohibitive costs and technical complexity of installing the vertical ground collector boreholes within the site boundary.

✓ Air Source Heat Pumps collect low-grade heat from the air to supply useful heat for space and water heating requirements. They operate in the same way as a ground source heat pump, by applying additional energy input (in the form of electricity), it is possible to raise the temperature of the source heat to the temperature required. This technology is considered to be a feasible option for this site.

***** Wind Turbines are considered unsuitable for this site due to a poor wind resource. In order to operate efficiently a wind speed of at least 6m/s is typically required. The NOABL wind speed database records a wind speed of approximately 4.8m/s at 10m above ground level for this site (see Figure 5.1) for this site, postcode WA15 7PJ.

Wind speed at 10m above ground level (m/s)		
4.7	4.7	4.7
4.8	4.8	4.8
4.9	4.9	4.9

Figure 5.1 - Wind Speed Data for the Proposed Development Site

Biomass heating would be capable of delivering CO₂ emission reductions but is considered inappropriate for this type of development due to the need for a large fuel storage facility and frequent, large fuel deliveries combined with regular maintenance.

5.4 Proposed Renewable Energy Solution

Photovoltaic Array



Photovoltaic (PV) arrays are therefore selected as an appropriate renewable energy technology that could contribute towards the CO_2 emission reductions at this site. PV arrays are relatively straightforward to install, benefit from low maintenance costs and will reduce the operational cost of the building. The use of PV in general would provide the following benefits:

- Reducing the building's electrical energy grid load;
- Simple installation and commissioning;
- Low maintenance; and,
- Reliable, proven technology.

Proposed System Details -

It is proposed that PV panels could be mounted upon the roof of the apartment block and houses in tilted arrays and orientated due south (where feasible to do so) in order to optimise the operating efficiency of the system.

- The development has the potential to install sufficient PV capacity t achieve up to a 35% dwelling emissions reduction site wide (relative to Part L1a 2103) in combination with an enhanced fabric specification and an efficient mechanical and electrical servicing strategy; and,
- SAP calculations demonstrate that the requisite PV capacity may easily be accommodated within the available roof areas on the apartment block and houses to deliver this level of CO₂ emissions reduction.

Land Use -

• There are no land use issues associated with PV technology at this site.

Local Planning Issues -

• There are no planning policy issues associated with this technology, as PV is covered under permitted development (for existing dwellings) and encouraged at all tiers of planning policy.

Payback -

• The typical payback period is around 9 years for installations such as this.

Noise Issues -

• PV is silent in operation.

Whole life cost and lifecycle impact -

- Current installed costs for PV are approximately £1,000 per kilowatt peak installed.
- Additional costs throughout the system's 30-year lifecycle are limited to:
 - o Cleaning of the arrays;
 - o Potential vandal damage to the arrays; and,
 - Replacement of the DC / AC inverter unit which typically have a lifespan of around 10 years.



- Energy payback estimates for rooftop PV systems are between 4 to 2 years for systems using current multi-crystalline, silicon PV modules.
- With energy paybacks of 2 to 4 years and assumed life expectancies of 30 years, 87% to 97% of the energy that PV systems generate will be 'clean' zero carbon energy.

5.5 Net Zero Carbon

On the 28th of November 2018 a Climate Emergency was declared by Trafford Council. Furthermore, it is understood that the Greater Manchester Spatial Framework (Draft, 2019) includes an expectation that new development will be Net Zero Carbon from 2028 by following the principles of the energy hierarchy.

The aim of the zero-carbon standard is to achieve significant carbon reductions on site and to get as close to zero carbon as possible. In order to maximise the contribution that development can make to tackling climate change, where further on-site measures are unfeasible, it is proposed that an offset payment may be made to mitigate any shortfall in required CO_2 emissions reduction through a financial contribution mechanism. This model offers a well-established solution to meeting Net Zero Carbon targets and is recognised in other boroughs within England as a means to mitigating environmental impact associated with new developments.

5.5.1 Carbon Offsetting

The cost of offsetting -

The financial contribution may be calculated based on the currently recognised price of carbon. This price of carbon is proposed to be set at ± 60 /tonne for a lifespan of 30 years i.e. $\pm 1,800$ /tCO₂.

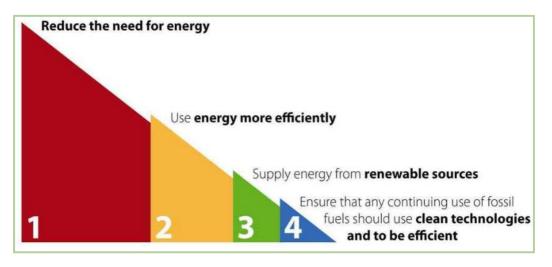
5.6 Energy Hierarchy

The proposed scheme could incorporate an enhanced material specification along with high quality design and construction standards in order to improve energy efficiency through a 'fabric led' energy strategy. The construction, design and specification proposed for this scheme has the potential to deliver dwellings that are inherently efficient and cost-effective during occupation.

The Energy Hierarchy provides a framework to guide energy policy and decision making to achieve practical and cost-effective carbon emission reduction strategies. The hierarchy prioritises demandside activities to reduce wastage and improve efficiency (see Figure 5.2).



Figure 5.2 – The Energy Hierarchy



First Principle

The dwellings could be constructed with materials and incorporate design specifications which exceed minimum Building Regulation standards, including numerous efficiency measures designed to reduce heat losses and minimise energy demand.

100% low energy lighting provision and sophisticated control systems for the space and water heating within the dwellings would ensure the energy consumed by the dwellings is used efficiently.

This 'fabric led' approach to minimising energy demand and associated carbon dioxide emissions is aligned with the first principle of the Energy Hierarchy, which states that reduction in energy demand should be achieved initially by energy efficiency.

Second Principle

Combined heat and power technology is not proposed as part of a likely energy strategy for this scheme.

Third Principle

Wastewater heat recovery systems combined with roof integrated photovoltaic arrays and/or heat pump technology could significantly reduce the carbon dioxide emissions arising from the proposed development, as per the third principle of the Energy Hierarchy.

Fourth Principle

The space and water heating demand of the dwellings may be met by high efficiency, low Nitrogen Oxide (NOx) emission, gas-fuelled condensing boilers delivering all space and water heating loads within the houses and apartments. This will ensure that fossil fuels consumed by the dwellings for heating purposes will be burnt cleanly and efficiently. Insulated distribution pipework could further minimise energy losses from the system, often referred to as 'standing losses'.

These outline proposals for the World of Pets development are therefore, aligned with the Energy Hierarchy.



6. CLIMATE CHANGE EMERGENCY

A Climate Emergency was declared by Trafford Council on the 28th November 2018 in response to the findings of the Intergovernmental Panel on Climate Change (IPCC) report. The Council believe that the impacts of global temperature rise above 1.5°C, are so severe that governments at all levels must work together and make this their top priority. In support of this, the developer wishes to highlight the following measures that may form part of the specification of this development:

- An energy strategy that delivers and exceeds the current Core Strategy carbon dioxide emission reduction and renewable energy generation targets:
- Unregulated energy demand (that is, the energy demand associated with appliances and cooking) typically accounts for over half of the total carbon dioxide emissions from modern residential developments such as this. To limit this:
 - o A+ energy rated, integrated white goods (as a minimum) could be specified; and,
 - A Welcome Pack provided to all residents to encourage selection of green energy providers to enable them to make informed decisions.
- Waste is a misuse of natural resources, and also contributes a large proportion of the UK's carbon footprint:
 - Waste minimisation during construction will raw reduce materials demand, thereby reducing the building's embodied carbon footprint; and,
 - During occupation, the dwellings would benefit from recycling facilities to enable the local authority waste reduction targets, diverting more materials away from landfill and reducing the occupants' carbon footprint further
- The buildings will be designed to incorporate features that will serve to reduce energy demand, and in turn, carbon emissions arising from access to the dwellings:
 - The lighting provision within the common and amenity areas could include active sensors; and,
 - The fit-out specification of the dwellings will seek to minimise water demand. Water efficiency measures (such as dual flush toilets, flow restrictors and reduced volume baths) could limit potable water demand to <105litres/person/day. This would reduce water heating energy loads and also cut the process energy required to supply clean drinking water.
- As part of the Timperley Wedge masterplan, there are numerous opportunities for improved transport connections in and around the site. Through development of the Timperley Wedge and its transport infrastructure, the site's location will enable a low carbon, sustainable lifestyles. The residents would have the option to utilise various future sustainable modes of transport facilitated by:
 - Extensions to the rail networks and Metrolink with new stops running through the Timperley Wedge site;



- o Enhanced pedestrian and cycle routes;
- o Electric vehicle charging provisions for parking bays; and,
- New local amenities within easy walking distance of the site, enabling residents to live local with a reduced need to travel.

These commitments, in combination, seek to work towards the carbon reduction target of no more than 1.5°C global temperature increase and assist Trafford Council in meeting their Climate Change Emergency objectives.



7. CONCLUSION

This Statement has reviewed the potential sustainability performance of the proposed residential development at Timperley World of Pets and Leisure, Altrincham against national and local planning policies both current and emerging. The outline proposals demonstrate the scheme is able to positively to the requirements of the Places for Everyone Joint Development Plan Document (JDPD) Policy JP Allocation 3.2 - Timperley Wedge whilst also delivering a zero-carbon development at this site.

Energy Strategy –

Policy regarding the energy performance of new developments in Trafford is guided, in part, by the Places for Everyone JDPD. Specifically, Policy JP-S 2 Carbon and Energy which includes an interim target 19% CO₂ reduction in regulated emissions reductions over and above the 2013 Target Emissions Rate (TER). Compliance with the key criteria of the Trafford Core Strategy Policy L5: Climate Change have also been addressed by the proposed energy strategy, whilst taking the Council's declaration of a Climate Emergency into consideration with a view to becoming net zero carbon.

Priority is given to achieving the target carbon emissions reductions by means of on-site measures through the application of the energy hierarchy. The scheme has the potential to deliver up to a 35% savings in CO_2 emissions on site and by virtue of doing so, accords with both Core Strategy Policy L5 and Places for Everyone Policy JP-S 2. This could be achieved through the following measures:

- A significantly enhanced fabric and servicing specification for the houses and apartments;
- Efficient heating systems with sophisticated controls and heat recovery; and,
- The integration of renewable technology, potentially including photovoltaic modules on the roofs of the dwellings. This responds positively to Policy JP-S 2 which states that for renewable energy generation, priority should be given to PV installation where technically feasible.

Further opportunity has been identified to secure a net zero carbon development by means of offsetting the remaining on-site regulated emissions through an offset fund contribution.

These cumulative measures will reduce the on-site carbon dioxide emissions from the development thereby delivering a potentially zero-carbon scheme that is inherently efficient and cost-effective during occupation.

Sustainability Performance –

Key issues of Trafford Council's Local Development Framework planning documents in accordance with the Places for Everyone policies, including the Timperley Wedge allocation have been addressed by the proposals. These are as follows:

• Internal water management will be achieved through the provision of water efficient fittings and appliances to reduce the developments internal water demand. The internal water strategy will meet and exceed the regulatory standard specified to achieve a calculated daily consumption of <105 litres/person/day. This is aligned with the Core Strategy Policy L5 and L7 as well as Places for Everyone Policy JP Allocation 3.2 which states that development within the Timperley Wedge must mitigate the impacts of climate change and utilise the most energy and water efficient technologies.



- The majority of the residential development site is located within Flood Risk Zone 1. The site drainage strategy will be designed to manage the surface water runoff to ensure that the peak rate and volume of surface water run-off will be no greater post-development than predevelopment, greenfield run-off rates. SuDS techniques and attenuation will limit the discharge of surface water off-site up to the 1 in 100-year rainfall event with a 30% allowance for climate change. This approach accords with Core Strategy Policy L5 and SPD1: Planning Obligations Technical Note 3. Furthermore, in direct alignment with the Places for Everyone Policy JP Allocation 3.2, the landscaping proposals will also assist in flood management, maintaining the blue infrastructure of the borough. Measures employed would include swales and / or attenuation ponds.
- Waste arising during construction and occupation/operation will be minimised. A site waste management plan could be adopted during construction in accordance with Core Strategy Policy L7. The provision of suitable space and facilities will allow residents to segregate and store operational recyclable waste.
- Construction site management procedures will minimise adverse impacts on the environment and control pollution generated during the construction phase. A waste management strategy would reduce the quantity of waste generated, and to increase re-use and recycling of materials. A commitment will be made to minimise waste and pollution in-line with adopted policies.
- In accordance with Places for Everyone Policy JP Allocation 3.2, materials could be responsibly sourced which would contribute to the retention of the local housing characteristics of the area, ensuring new development is sensitivity integrated. Materials with low environmental impact will be selected and local suppliers could be prioritised. This procurement strategy would conserve energy associated with transportation and waste generation.
- Sound insulation would be specified to achieve Building Regulation Part E compliance (this to be verified by pre-completion testing). The landscaping proposals include for the retention and planting of new trees, new hedgerows and shrubbery around the site borders. These measures will help to further buffer any noise generated by the development. This is in accordance with Policy JP Allocation 3.2 which requires development to incorporate appropriate noise and air quality mitigation measures, such as woodland buffers as well as appropriate landscape buffers across the site to mitigate the impact on the rural landscape to the southwest of the allocation area;
- In accordance with Places for Everyone Policy JP Allocation 3.2, the planting provision and landscaping designs will be designed to provide an enhancement to the aesthetic value of the post-developed site and to improve and strengthen the ecological value of the site to deliver a measurable net gain in biodiversity. This responds directly to the Places for Everyone Policy JP Allocation 3.2 requirement to deliver a clear and measurable net gain in biodiversity. The Timperley Brook wildlife corridor will also be preserved and enhanced in accordance with the JP Allocation 3.2. in addition to the retention of important landscape views wherever possible and landscape features such as ponds, woodland and hedgerows. The provisions of bird and bat boxes could also provide positive contribution to the protection and enhancement of the borough's natural environment and biodiversity.
- The proposed site is in a sustainable location in relation to cycling and key pedestrian and public transport routes. The location of the site within the Timperley Wedge Masterplan will also provide the opportunity for use of more sustainable forms of transport. Cycle storage spaces and enhanced pedestrian links will improve the connectivity of the site and there could be



capacity to provide all parking bays with electrical vehicle charging points to facilitate the increasing, widespread transition to electric car usage. This accords with Policy JP Allocation 3.2, and Core Strategy Policy L4.

Furthermore, the proposals accord with the aims of the National Planning Policy Framework, as follows:

- Construction practices that minimise adverse impacts on the environment will be adhered to. A waste management strategy could be used to reduce the quantity of waste generated and to increase re-use and recycling; and,
- There is potential to significantly exceed the regulatory compliance criteria in terms of the energy strategy and in doing so, mitigating the impact of climate change.

In conclusion, the outline development proposals reviewed within this statement for the scheme at the World of Pets, Trafford could deliver an extremely energy efficient scheme, providing a quality development that accords with guidance provided within the Council's adopted and emerging planning policies.

