Sustainability and Energy Statement

Land at Brook Farm, Daws Heath

June 2022

Turley
Sustainability

Contents

Client

Countryside

Turley Reference

COUZ3029

Document Status

Final

Date

June 2022

1. Introduction

This Sustainability and Energy Statement has been prepared to demonstrate the sustainability credentials of the development proposal for Land at Brook Farm, Daws Heath

It provides details of the sustainable design measures incorporated into the proposals to meet both local and national sustainability related requirements.

Site Context

The site is located immediately to the south east of the town of Daws Heath, within Essex County, and approximately 2.3km to the north east of the town of Hadleigh.

The site is bounded to the north by the residential area of Daws Heath and to the south by Dodds Grove and Great Wood. A number of trees form the east and south perimeter of the site, Daws Heath Road sits at the western perimeter, and the northern perimeter consists of trees and rear gardens of properties located on Fairmead Avenue.

The existing site is mainly open field with continuous vegetation along the boundary. It consists of agricultural land with associated agricultural outbuildings / barns and storage areas for caravans, as well as a residential dwelling located close to the site entrance. The existing farm buildings will be demolished as part of the development, however, the residential dwelling will remain.

Proposed Development

The development proposals comprise 173 homes, including a variety of one- and two-bedroom apartments and a range of two, three, four and five+ bedroom houses.

The development description is as follows: *"Construction of 173 new dwellings including Public Open Space, Landscaping, Access, Drainage, Parking, Servicing, Utilities and all associated Infrastructure and ancillary Buildings."*

The illustrative proposed masterplan is shown in **Figure 1.**

The following chapters set out the local and national sustainability objectives, followed by a review of the measures incorporated into the design of the development and those to be considered during the detailed design of new homes, in order to demonstrate the social, economic and environmental benefits of the development.

Please note, the terms "carbon", carbon dioxide (CO_2)" and "greenhouse gas (GHG)" are used interchangeably in this Strategy depending on the terminology of referenced documents.

Figure 1: Land at Brook Farm Proposed Site Layout Plan (Source: DAP Architecture Ltd)

2. Policy Context

This chapter provides an overview of the relevant sustainability planning policy and guidance from a national and local perspective.

2.1 National Policy

This section sets out a summary of current national guidance and policy in relation to sustainable development.

2.1.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) provides a framework for the development of locally prepared plans and the government's planning policies for England and how these are expected to be applied.

Paragraph 7 of 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 objectives, aligned to the three pillars of sustainability, which must not be taken in isolation and should be pursued jointly:

An **economic** objective to help build 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, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure.

A **social** objective supporting strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and

An **environmental** objective contributing to protecting and enhancing our natural, built and historic environment; including, making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

These objectives are key to the development of plans and the NPPF sets out a number of key themes for consideration which guide the preparation of local plans and policies, ensuring the delivery of sustainable development.

2.1.2 Planning Practice Guidance

Planning Practice Guidance (PPG) provides further advice on various planning issues associated with development, including those linked to sustainability and renewable energy and underpins the policies within the NPPF.

PPG is a material consideration in planning decisions and should generally be followed unless there are clear reasons not to. It sets out how local authorities should include polices that protect the local environment and strategies to mitigate and adapt to climate change and supports developments that are functional and adaptable

for the future.

The March 2019 PPG update confirmed that Local Authorities have the option to set technical requirements exceeding the minimum requirements of the Building Regulations in respect of access, water and space where sufficient evidence is produced to justify the target.

2.1.3 National Design Guide

The National Design Guide published in October 2019 and is based on the national planning policy practice guidance and objective for good design as set out in the NPPF. The Guide introduces ten characteristics of well-designed places which work together to create developments Character and Community, while positively addressing environmental issues affecting climate.

2.1.4 Building Regulations

Whilst not planning policy, the Building Regulations (and specifically Approved Document Part L: Conservation of Fuel and Power) set out the requirements for energy and carbon performance in new buildings.

Periodic updates to these national regulations will drive energy efficiency and carbon reduction improvements. Government has stated that developers will continue to have flexibility in how they meet carbon reduction targets; but that the emphasis is on using a "fabric first" approach.

The latest (2016) Building Regulations Part L (England) made technical changes to the wording of some of the definitions and requirements regarding energy efficiency, though no substantive changes were made relative to previous (2013) Part L standards. These regulations are currently in force.

In December 2021, the UK government confirmed the latest update to Part L in England. The regulations aim to deliver buildings that are of a higher quality, with lower energy bills and reduce GHG emissions by around 30% for new homes and 27% for non-domestic buildings. The new regulations will take effect in June 2022. There will be a transition period of one year from that date.

This will allow any new building, where full plans are submitted before June, one year to make a meaningful start and be allowed to comply with the previous regulations. These transitions will apply at a plot level, not at a site level.

The government has also confirmed that this update will be an interim step, with a further update to the "full" Future Building Standard in 2025.

In addition, the UK government has announced two new Building Regulations due to take effect in June 2022, Part S and Part O. New approved document Part S sets out guidance for electric vehicle (EV) charging infrastructure and specifies that EV charge points must be provided for each dwelling (or where the total number of parking spaces is less than each dwelling, all spaces should be provided with an active EV charging point). Any remaining spaces must have cable routes for charge points to be installed. For non-residential car parks with more than 10 spaces, at least one active EV charge point must be provided, with cabling to the remaining 20% of spaces.

Part O sets out new requirements for mitigating overheating, specifying that residential developments must limit unwanted solar gains in the summer and provide means to remove heat. Compliance with Part O can be demonstrated using two methods to demonstrate the risk of overheating from rising summer temperatures has been mitigated:

- Following a simplified prescribed glazing and free area ratio; or,
- Use of a Dynamic Simulation Modelling.

2.2 Local Policy

This section sets out a summary of Castle Point Council's planning policy and related guidance in relation to sustainable development.

2.2.1 New Castle Point Local Plan 2018 - 2033

Castle Point Council are in the process of adopting a new Local Plan. The new draft Local Plan has been found to be sound subject to modification

which the council are currently considering. The new draft Local Plan contains a number of sustainability-related policies the proposed development will have to adhere to, a summary of which has been provided below.

Policy HO14 Land at Brook Farm, Hadleigh - Land at Brook Farm, Hadleigh is allocated for residential purposes to deliver around 173 new homes by 2033. A master plan approach should be taken at the site, ensuring that the development is of a high quality and responds to local circumstances. The development should:

- Adopt a Contextual approach to design across the northern parts of the site to integrate with the existing built form;
- Adopt the Arcadia approach to design across the southern parts of the site to integrate with the semi-rural environment;
- Incorporate mature planting along the southern boundary of the site;
- Respect and retain the established hedge and tree-lined field boundaries;
- Provide greenways through the site, linking to the existing network of green infrastructure and providing opportunities for active travel and recreation;
- Achieve a measurable net gain in biodiversity. This may include habitat enhancement on land adjoining the allocation where compatible with the Green Belt;
- Implement sustainable drainage measures to ensure no increase in the risk of surface water flooding to the site or nearby properties;
- Take main vehicular access from Daws Heath Road; and
- Safeguard access for the maintenance of foul and surface water drainage infrastructure, and any other utility infrastructure identified on site.

Detailed proposals must have regard for the Council's Residential Design Guidance SPD. A contribution should be made to the improvement of active and sustainable travel infrastructure, including improvements to cycling infrastructure and public transport services along Daws Heath Road to improve accessibility to the site and reduce the need for travel by car.

Strategic Policy CC4 Sustainable Buildings - This policy requires all new residential development to minimise its impact on the environment by:

- Firstly, demonstrating how its design, siting and layout has maximised the opportunities for solar gain, and daylight penetration to reduce energy consumption;
- Secondly, integrating measures to achieve high levels of energy efficiency and on-site renewable or decentralised energy generation to meet the energy efficiency requirements of the Building Regulations as a minimum;
- Residential development should comply with optional water efficiency requirements set out in part G2 and Regulation 36(2)(b) of the Building Regulations, which will secure consumption levels at 110 lpppd, and encourage measures such as rainwater harvesting, and greywater recycling;
- Space should be made available for segregated waste storage;
- The materials, including aggregates, used in the construction of all new buildings should be sustainable in terms of the energy that has been expended in their production, and the energy that is required to transport them to the location of the development;
- Construction waste should be managed in a way that maximises the re-use and recycling of materials, including aggregates, on-site where possible; and
- Sustainability measures must be consistent with the overall architectural approach of the development.

Strategic Policy CC1 Responding to Climate Change – States the Council will seek to mitigate and adapt to climate change by:

- Identifying development locations with good access by foot, cycling and public transport to services and public transport provision which reduce the need for travel;
- Providing improvements to the public

transport network, and footpaths and cycle paths;

- Providing opportunities to deliver multi-functional green infrastructure and habitat creation;
- Promoting the efficient use of natural resources such as water and energy;
- Encouraging high-quality sustainable design and construction techniques that contribute to climate change mitigation and adaptation; and
- Encouraging opportunities for the provision of renewable energy, low carbon technologies and decentralised energy as part of development proposals as appropriate.

Strategic Policy CC3 Non-Tidal Flood Risk Management - New development within Flood Risk Zones for fluvial flooding, or at risk from surface water flooding in a 1 in 1,000-year event, will be considered against the sequential test set out in the NPPF. All development should manage surface water run-off so that the rate is no greater than prior to development, or run-off rates and volumes should be reduced as far as possible. Where possible, SuDS should be incorporated to deliver additional benefits to the built, natural, and historic environment.

Strategic Policy NE1 Green and Blue Infrastructure and the Undeveloped Coast - Development which results in the creation, restoration, enhancement, expansion and improved connections between and blue green infrastructure features will be encouraged. The council will seek:

- Preservation and enhancement of green and blue infrastructure;
- A measurable net increase in biodiversity, with a focus on priority habitats and species;
- A reduction in pollution to air, water, and soil;
- Opportunities for local food production; and
- Recreational benefits for local people

Proposals that result in the loss or degradation of existing green and blue infrastructure will not be supported, unless it can be demonstrated that the provision green and blue infrastructure in other areas of the Borough will result in no overall adverse impact.

Strategic Policy NE7 Pollution Control - Proposals should manage and reduce pollution through energy and water efficient design, the installation of sustainable drainage systems, and the delivery or enhancement of green infrastructure. Development should not cause a significant adverse effect upon the environment, the health of new and existing residents by pollution to land, air or water, or as a result of any form of disturbance including, but not limited to, noise, light, odour, heat, dust and vibrations. Development adjacent to existing uses will need to demonstrate the ongoing use of the site is not compromised, and all major development proposals must be accompanied by a Construction Environment Management Plan (CEMP).

Strategic Policy HS1 Strategy for Healthy Communities - Proposals should promote healthy lifestyles by ensuring access to high quality open spaces, providing opportunities for people to walk and cycle, ensuring the accommodation needs of older people and disabled adults are met in a location that enables residents to remain active members of the community, contribute towards the provision of healthcare services, incorporation of active design principles and avoidance of development in locations that might cause harm in terms of human health or pollution. Health Impact Assessments should be undertaken for all developments over 50 houses to ensure new development is designed to promote good health.

Strategic Policy HO4 Securing more Affordable Housing - Proposals for housing development of 10 or more homes will be required to make provisions for 40% affordable housing in Benfleet, Hadleigh, and Thundersley.

Strategic Policy TP1 Transport Strategy -The transport network in Castle Point will be enhanced to support opportunities to walk and cycle to access education, employment, services and recreation opportunities, and greater opportunity

to link different modes of transport.

Local Policy TP3 Improvements to Active Travel Infrastructure - To enhance opportunities for walking, cycling and horse-riding, the following improvements will be sought:

- Improvements to local footpaths, bridleways and cycling networks across Castle Point, linking to the Thames Estuary Path and any other appropriate green infrastructure links, addressing gaps in the network and ensuring that all routes are of a high quality; and
- Provision and enhancement of cycling infrastructure, in accordance with the latest Essex County Council Cycling Strategy, and local action plans for delivery, including cycle parking facilities and crossings at public transport nodes and other appropriate destinations.

Strategic Policy TP4 Improvements to Public Transport Infrastructure and Services - To improve public transport, the following improvements will be sought through the Infrastructure Delivery Plan, Section 106 Agreements, Community Infrastructure Levy or grant funding:

- Enhanced public transport services connecting towns in Castle Point with employment locations in Basildon, Thurrock and Southend;
- The extension of any Passenger Transport Corridors through the borough to neighbouring destinations for employment, education, services and leisure/recreation opportunities; and
- Additional public transport infrastructure provision in and around development sites and town centres.

Strategic Policy TP6 Safe and Sustainable Access - To ensure proposals offer safe and sustainable access, the following requirements must be met:

- Safe access to the highway network for all users;
- Safe access to the site for cyclists and pedestrians, including to and from the nearest public transport node; and
- Access to public transport services within 400m of the site, or a contribution towards improving access to public transport services or residential travel packs.

Strategic Policy TP7 Parking Provision - Proposals are expected to make provision for safe and secure car parking, parking for people with disabilities and parking for bicycles, in accordance with the Essex Vehicle Parking Standards. All new development should provide for charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

2.2.2 Castle Point Adopted Local Plan

The Council's current Local Plan was adopted in November 1998. Currently, only certain 'saved policies' are still in place, which are due to be replaced by policies in the new Local Plan in due course. Whilst the new Local Plan is under development, the 1998 adopted Local Plan should be considered alongside the National Planning Policy Framework (NPPF) and other Supplementary Planning Documents (SPDs). The adopted plan contains a number of sustainability-related policy requirements, including:

Policy EC2 Design - A high standard of buildings is expected throughout the borough. Spaces around buildings should be enhanced with appropriate landscaping and all modes of movement should be safe and convenient.

Policy EC3 Residential Amenity - Proposals that have a significant adverse effect upon traffic, noise, fumes, or other forms of disturbance will be refused.

Policy EC4 Pollution - Proposals that have a significant negative effect on health, the natural environment, or general amenity though release of pollutants to water, land, or air, or due to noise, dust, vibration, light or heat will be refused.

Policy EC6 Energy Efficiency - Proposals are expected to consider energy conservation through their siting, orientation, layout and design.

Policy EC7 Natural & Semi-Natural Features - Natural and semi-natural features and open spaces

in urban areas should be retained and enhanced wherever possible, safeguarding their physical, visual, recreational and wildlife value.

Policy EC13 Protection of Wildlife and Their Habitats - Development which is detrimental to wildlife and the retention and management of important habitats will be refused.

Policy EC14 Creation of New Wildlife Habitats - Proposals that create new habitats in conjunction with development will be promoted.

Policy EC22 Retention of Trees, Woodland and Hedgerows - Trees, Woodlands, and Hedgerows should be retained wherever possible. Loss should be kept to a minimum and trees and shrubs should be suitably protected throughout the duration of construction.

Policy T4 Large Scale Development - Any development considered to overburden the highway network should be refused. Proposals should minimise the extent of car travel and maximise opportunities for the use of alternative means of transport.

Policy T10 Cycleways - The council will promote the provision of facilities for cycling, including bicycle parking in development proposals.

2.2.3 Residential Design Guidance Supplementary Planning Document

The Residential Design Guidance Supplementary Planning Document was adopted in November 2012. Sustainability-related guidance and requirements include:

RDG9 Energy & Water Efficiency & Renewable Energy - Designs should incorporate measures for achieving high levels of energy and water efficiency, and demonstrate how development's design, siting and layout has maximised the opportunities for solar gain, daylight penetration, and the re-use/recycling of water. Where appropriate, construction should follow nationally agreed principles for sustainable dwellings.

RDG13 Refuse & Recycling Storage - Which specifies all residential development must be provided with safe and accessible refuse and recycling storage facilities.

2.3 Planning Policy Summary

Both local and national policy aims to ensure the delivery of sustainable and well-designed homes and other buildings which mitigate and adapt to the impacts of climate change.

The new Castle Point Local Plan, adopted plan, and SPDs confirm the Council's commitment to the creation of sustainable new developments in the Borough.

Latest national planning policy and guidance confirms the Government's approach to sustainable development is being driven through the updates to the Building Regulations to ensure that new buildings are well designed and reduce emissions in line with the UK's national carbon targets.

The Local Plan requires developments to consider a range of sustainable design measures, including green infrastructure, SuDS, energy efficient and low carbon buildings, access for all and enhancing biodiversity and health and wellbeing of a community.

The following sections of this Sustainability and Energy Statement set out the sustainable measures incorporated into the design of the development to ensure the delivery of a sustainable development and address the requirements of local policy.

3. Countryside's Corporate Sustainability Strategy

This section summarises Countryside's Corporate Sustainability and Nete Zero Strartegy.

Countryside aims to be an industry leader in Corporate Social Responsibility delivering environmentally responsible, ethical, safe and sustainable development. Including a pathway to delivering Net Zero.

3.1 Countryside's Approach to Sustainability

Countryside's primary focus is to create sustainable homes and communities. In May 2021 Countryside published a new approach to sustainability and the 2021 Sustainability Report[1] summaries Countryside's approach and progress.

The companies strategic framework includes 31 targets and provides a vision for the next nine years. These targets fall within three pillars and commitments to create Places People Love, these include:

- Built to Last – including building responsibly, efficiently and with pride.
- Sustainability Communities – creating nature rich healthy places, community embrace, and affordable and thriving space.
- Thriving Together – including developing, growing and thriving; being inclusive, diverse and fair; and happy and healthy and engaged.

Built to Last

Over the last year Countryside has responded positively to key targets on building responsibly, efficiently and with pride. This includes in 2021 building a second modular panel factory in Leicestershire helping deliver high quality developments efficiently and sustainably. Key performance against targets includes:

- 71.7% of the supply chain has signed up to the Supply Chain Sustainability School against a target of 85% by 2025;
- 99.6% of the timber used came from sustainable sources;
- 33.7% of homes built using Modern Methods of Construction positively progressing towards the target of 50% of homes by 2025;
- Reducing embodied carbon from factory built homes by 30%.
- Continuing to divert more than 99% of waste from landfill.

Over the next year measures will be put in place to respond to a number of existing and new targets, including reducing Scope 1 and 3 operations emissions, carrying out Post Occupancy Evaluations and improving water efficiency in new homes.

Sustainable communities

In supporting Sustainable Communities Countryside has achieved the following:

- A 15.9% generation of Social Value, as well as c.£697,000 donations to local charities and Communities Fund.
- Planting of 5,718 trees against and target of 250,000 trees by 2025.
- Delivery of 2,107 affordable homes, 39% of the homes delivered over the last year.

Thriving Together

[1] Countryside Properties PLC Sustainability Report 2021 (countrysidepartnerships.com)

Countryside has delivered the following results against targets designed to demonstrate how the company Thrives Together.

- 7% of the workforce in apprentice trainee and graduate roles against a target of 5%.
- Placing 52 Mental Health first aiders on site.

A number of new targets were added in 2021, over the next year focus will be given to enhancing training and achieving the Living Wage Foundation accreditation.

3.2 Net Zero Pathway

Countryside recently launched their Pathfinder to introduce their net zero strategy and set a target to be net zero by 2030. Countryside aims "to create places where people love to live, with sustainable communities to last".

Countryside launched their new approach to sustainability in May 2021 setting out a focused, ambitious and impact-driven strategy to respond to the big environmental and social challenges, like climate change and developed a route to **becoming net zero**.

They have taken a "whole lifecycle" approach to **measure the carbon footprint of their value chain**, including, suppliers, operations, customers and end of life.

Countryside have set targets following the **Science-Based Target initiative's (SBTi) criteria to become net zero by 2030**, achieving Net Zero will involve:

- Reducing homes carbon emissions by 31% through fabric efficiency, renewable energy and heat recovery systems by 2022 and 75% by 2025.
- Achieving an 80% reduction in carbon emissions for on-site plant through use of alternative fuels.
- Ensuring 60% of suppliers have set science based targets by 2025.
- Planting 250,000 trees by 2025.
- Reducing embodied carbon in timber frame homes by 40%
- Reducing Scope 1 and 2 emissions by 42% and Scope 3 emissions by 52% by 2030.

4. Sustainability at Land at Brook Farm

This section summarises the sustainability and energy strategy for the Proposed Development at Land at Brook Farm, Daws Heath

This section of the report outlines the sustainability and energy strategy for the proposed development at Land at Brook Farm, Daws Heath, demonstrating how the development responds to both national and local planning policy, including policies HO14, CC1, CC3, CC4, TP3, EC2, EC6, and the NPPF.

In this context the sustainable design measures incorporated into the development at the detailed application stage and measures to be considered during the detailed design are set out under the following headings which reflect the themes of the NPPF.

4.1 Building a Strong and Competitive Economy

The proposed development will contribute to positive economic growth for the district through construction and occupation, providing sustainable new homes, supporting the aims of the NPPF.

Construction - The economic benefits of construction are well known with considerable direct and indirect positive impacts resulting from new residential construction.

A study by the Confederation of British Industries (CBI) in February 2020[2] demonstrates that construction projects have a significant benefit on the local and wider economy. The report concludes that for every £1 of construction expenditure £2.92 is injected into the economy.

The construction of 173 new homes will therefore provide opportunities for local employment as well as increased revenue locally for materials, services and goods.

In addition, as part of the development, provision of a financial contribution to the Council to support local infrastructure projects will be made.

Occupation – Further positive economic impacts of the proposed development resulting from the occupation of new homes and related increase in local population are noted as follows;

- The construction of 173 new homes will increase the population resulting in local benefits through the demand for goods and services;
- The increase in local population will also help support local facilities and businesses; and

[22] https://www.cbi.org.uk/media/4121/fine-margins-february-2020-cbi.pdf

- The development of new homes will provide an increase in Council Tax revenue helping support local Council services.

4.2 Promoting Sustainable Transport

A Transport Assessment has been prepared by Iceni summarising existing conditions in the vicinity of the site, the accessibility of the site relative to local facilities and services and outlines the development proposal for the site.

This section of the report provides a summary of the sustainable access and transport measures available and incorporated into the development.

The site is located on the eastern side of Daws Heath Road, between the towns of Rayleigh to the north and Hadleigh to the south. A large number of residential properties are located to the south-west and north of the proposed development and the majority of the south-east, north-east and west of the site consist of open fields.

The roads surrounding the site are mainly residential roads and country lanes. Access arrangements for the development include upgrading the existing Daws Heath Road/Daws Heath Road East priority junction and providing a new priority junction via the proposed access road to retain access to existing dwellings on Daws Heath Road East.

Walking/Cycling Services – Most of the residential roads local to the site feature footways along both sides of the road, varying in width between 1.5m-2.5m wide and benefitting from adequate street lighting. There are no footways on either side of Daws Heath Road at the immediate west of the site.

There are a number of Public Rights of Way (PRoW) in close proximity to the site, however, there are no formal cycle routes nearby, although some of the local residential roads are considered suitable for all levels of cyclists use.

To facilitate sustainable travel in accordance with **Policies TP3 and TP7** of the new Local Plan, the development will be designed to prioritise pedestrians and cyclists, through provision of roads with footways throughout the internal site layout and cycle storage for each dwelling. Cycle storage will be included within each of the houses and additional storage will be provided within the external amenity area for the apartments. A total of 12 cycle storage spaces are proposed for the apartments.

Bus Services – The closest bus stops to the site are located approximately 160m from the site on Daws Heath Road and are served by bus route number 3. Further bus stops are located 1.5km from the site on London Road serving a number of bus routes connecting the site to the wider area.

A summary of the current bus routes and services are listed in **Table 1**.

Table 1: Bus Routes and Services

Service	Destinations	Frequency
1	South Benfleet – Rayleigh Railway Station	6 per hour Monday - Friday 5 per hour on Saturdays 2 per hour on Sundays
1	Leigh-on-Sea – North Shoebury – Southend-on-Sea	6 per hour Monday - Friday 5 per hour on Saturdays 2 per hour on Sundays
3	Rayleigh – Battlesbridge – Great Baddow – Chelmsford	6 per day Monday - Saturday
3	Hadleigh – Leigh-on-Sea – Southend, Victoria Station	6 per day Monday - Saturday
21	Thundersley – South Benfleet - Canvey	2-3 per hour Monday - Friday 2 per hour on Saturdays Hourly on Sundays
21	Leigh – Southend Hospital	2-3 per hour Monday - Friday 2 per hour on Saturdays Hourly on Sundays

27 / 27A / 827	South Benfleet – Canvey	3 per hour Monday – Saturday 2 per hour on Sundays
27 / 27A / 827	Leigh - Southend	3 per hour Monday – Saturday 2 per hour on Sundays
28	South Benfleet - Basildon	3 per hour Monday – Saturday 2 per hour on Sundays
28	Leigh - Southend	2-5 per hour Monday – Friday 2-4 per hour on Saturdays 1-2 per hour on Sundays
Z3	Benfleet – Tilbury, Amazon	4 per day Monday - Sunday
Z3	Leigh – Southend – Southchurch	4 per day Monday - Sunday

Rail Services – The closest rail station is Rayleigh Station, approximately 3.6km north of the site. It is operated by Great Anglia trainline and has 110 sheltered cycle storage spaces. The station provides services eastbound to Southend Victoria and westbound to London Liverpool Street.

Leigh-on-Sea station is located approximately 4.3km to the south east of the site and provides services to Shoeburyness and London Fenchurch Street. The station also has cycle storage provision for 22 spaces.

Electric Vehicle Charging – The development will include provision of electric vehicle charging infrastructure in accordance with **Policy TP7** of the new Local Plan. All dwellings will include one electric car charging point.

Local Services and Amenities - The Transport Assessment indicates the proximity of the site to key services and amenities. There are a range of healthcare, education, retail, employment, leisure, recreation, and community facilities within walking and cycling distance of the site. Within 2km of the site are a medical centre and dental practice, a pharmacy, two primary schools, a secondary school, food and non-food retail along London Road. In addition Brook Road Industrial Estate provides local employment opportunities, with Weir Retail Park including dealerships and larger retail stores also nearby. There are also several PRoW's and open fields within 550m of the site that are suitable for walking and leisure.

The development proposals also include significant outdoor open spaces providing additional recreational facilities and promoting community interaction. Formal areas will include a paved feature square and formal green with amenity grass enclosed by hedgerows and trees and informal spaces will be more naturalistic with a range of trees, wildflower grassland and vegetation specific to the local character and water conditions.

Residential Travel Packs – Each dwelling will be provided with a Travel Pack upon occupations to provide information to residents regarding sustainable transport alternatives to the private car.

More detailed information on transportation considerations is contained in the Transport Assessment accompany the planning application.

4.3 Delivering a Wide Choice of High-Quality Homes and Development

A total of 173 dwellings will be provided on site, with a mixture of types and sizes, including 40% affordable housing, in accordance with the targets set in **Policy HO4** of the new Local Plan. The site will contain a mix of dwelling types including 1- and 2- bed apartments and 2-5 bed bungalows and houses.

4.4 Requiring Good Design

The design of the development at Land at Brook Farm aims to respond to the site-specific constraints and includes sustainable elements, to

create a well-designed development in line with principles set out in **Policy HO14** of the new Local Plan and the residential Design Guidance SPD. It will include:

- Orientation of dwellings designed to maximise natural lighting and solar gain whilst providing good levels of passive surveillance;
- Retention of trees and vegetation to the northern boundary and bungalows located along the northern edge to reduce building heights and, therefore, limit the visual impact on existing dwellings along the northern edge.
- Well-connected public open space and recreational facilities with formal and informal open space for future residents and the local community to use;
- A series of well-overlooked streets to provide passive surveillance and feelings of safety, coupled with private gardens and outdoor spaces;
- Inclusion of sustainable drainage features; and
- Inclusion of sustainable transport infrastructure, including cycle storage and electric car charging points.

Further details on how the design of the development has evolved to incorporate a range of good design measures are set out in the Design and Access Statement (DAS) which accompanies the application.

4.5 Promoting Healthy Communities

Creating a high-quality development that promotes health and wellbeing for residents and local people is a key aim of the scheme. In this context the design has been developed incorporating a number of features to enhance the health and wellbeing of the residents, including:

- Creation of 'open space' which includes parks and gardens, green space, Sustainable Drainage System, boundary buffer and additional planting;
- A series of strategic footpaths throughout the internal site layout to encourage walking; and
- The encouragement of activity, leisure and social interaction to enhance both physical and mental wellbeing of the future population.

In addition, the design of new homes will consider measures to improve internal living environments to promote health and wellbeing including:

- Prioritisation of natural ventilation, contributing to good internal air quality;
- Orientation of dwellings designed to maximise natural lighting and solar gain providing visual and thermal comfort;
- Homes which are adaptable for the future; and,
- Utilisation of materials and services that have low emission rates and pollutants.

More information on how the development has incorporated healthy living opportunities is contained within the DAS which accompanies the outline planning application.

4.6 Meeting the Challenge of Climate Change

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 in 2019 set out an ambition to extend the UK Carbon reduction target to reduce carbon emissions by 100% by 2050.

Climate change will cause the UK to become warmer, winters will become wetter, and summers will become drier. Adapting to this changing climate will impact on the design, construction, location, cost and operation of all new buildings in the next few decades. One of the NPPF's core planning principles is for development to consider climate change adaptation and mitigation during the planning process.

Castle Point's Local Plan supports the Government's objectives for sustainable development, reducing energy use and carbon dioxide emissions, adapting to and mitigating the effects of climate change.

In this context the following sections outlines the key climate change mitigation and adaptation measures considered appropriate for this development based on the latest local and national guidance.

4.6.1 Mitigating Climate Change

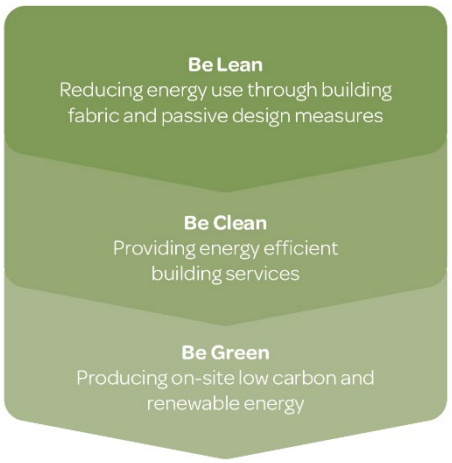
Developing energy efficient, low carbon buildings is a key objective of national policy and anticipated changes to the Building Regulations is to support the reduction of energy demand though efficient building design to reduce carbon emissions.

The Future Homes Standard aims to deliver homes that are efficient, adaptable and fit for the future. Results of consultation were published by the Government in January 2021, confirming that from 2025, Building Regulations will require at least a 75% reduction in carbon emissions above the current Part L (2013), with an interim carbon reduction target of 31% from June 2022. This includes consideration of the decarbonisation of the electricity network.

Given the proposed development's construction timetable, the homes at Brook Farm will take into account future changes to the Building Regulations and aim to achieve a minimum 31% reduction in carbon emissions beyond Part L of the 2013 Building Regulations through compliance with the Interim FHS.

To achieve these reductions, homes will be designed in accordance with the energy hierarchy, as shown in **Figure 2,** which aims to reduce energy demand through passive design measures and a fabric first approach, before utilising low carbon energy and the production of on-site renewable energy.

Figure 2: The Energy Hierarchy



The following sections set out the measures included to deliver an energy efficient, low carbon development.

Be Lean – Reducing Energy Use

Central to the delivery of low carbon and energy efficient buildings is the 'Fabric First' principle which recognises the most effective way of minimising carbon emissions is to reduce the demand for heat and power through a well-insulated, energy efficient building fabric and services.

Reducing the primary energy demand of a building through the use of efficient fabric and services is widely regarded as best practice and is therefore the first and most important step to reducing carbon emissions.

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

- Carbon 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 reductions through improved fabric;
- No reliance on an occupier's behaviour to deliver carbon reductions. Achieving carbon

savings from renewable energy technologies require education, awareness and often, behavioural changes from occupants.

Energy Efficiency Measures – The design of new buildings will aim to reduce thermal energy demand by targeting improved insulation levels and air leakage and fabric u-values where possible exceeding the Building Regulations requirements.

The following measures to reduce energy use and carbon emissions will be considered during the detailed design of individual buildings:

- Design to promote passive solar gains, maximise natural daylight, sunlight and ventilation;
- Design which aims to optimise natural daylight;
- Buildings which target element u-values and air tightness that exceed current Building Regulation requirements;
- Incorporating high efficiency lighting targeting 100% of all light fittings as low energy lighting;
- Use of high efficiency heating systems appropriate to the building use to reduce energy consumption; and,
- Where appropriate, specification of high energy efficient equipment that uses less energy and water.

Be Clean – Efficient Energy

The next stage of the Energy Hierarchy is the provision of energy efficiently, i.e. from a decentralised energy system such as a Heat Network.

District Heating Networks (DHN) comprise a centralised heat generator, typically a gas fired Combined Heat and Power (CHP) engine. CHP systems generate electricity and waste heat which can be fed into a network of insulated pipes which deliver low carbon heat to buildings to provide heating and hot water via individual heat transfer units.

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

The continued decarbonisation of the national electricity grid as supported by the draft SAP10.1 document published in October 2019 and to be incorporated into the update of the Building Regulations in 2021 is also reducing the carbon benefit of gas CHP systems.

While other technologies are available to generate heat as part of a heat network, including heat pumps and fuel cells, these have higher running costs and do not benefit from the sale of energy generated through CHP systems which is sold back the grid. The use of alternative technologies could lead to significant costs for residents and therefore at this time it is not considered economically viable to make use of an electricity lead district heating system.

In this context, given the type of development proposed it is considered that the installation of a heat network is unsuitable for this development because:

- There are no known nearby heat networks or potential anchor loads to support a network;
- The enhanced fabric performance of the development reduces the heat demand and limits the potential efficiency of a CHP system;
- The decarbonisation of the heat network reducing the potential carbon benefit of gas fired systems; and
- Increased residential costs for residents using alternative heat led networks.

Be Green – Low Carbon Renewable Energy

The final stage of the energy hierarchy is the generation of on-site low carbon renewable energy. The use of a fabric first approach to design and construction and provision of energy efficiency measures recognises that the most effective route to delivering long term energy and carbon reductions is through efficient building design.

This approach is reflected by government guidance that aims to improve developments energy use and

carbon emissions through changes to the Building Regulations. The FHS changes are likely to require the use of low carbon renewable energy technology.

A review of potential low carbon renewable energy technologies which may be suitable for inclusion in building designs, taking into account changes to the Building Regulations have been completed below.

Solar Photovoltaics (PV)

Solar photovoltaic (PV) systems generate zero carbon electricity from sunlight and are well suited to dwellings with unobstructed south-east to south-west facing roof space. Excess power is exported to the grid or can be harnessed using battery storage. Maintenance requirements are typically minimal. The detailed design of the development will aim to ensure homes are orientated towards the south to enable installation of Solar PV if specified.

Solar Thermal

Solar thermal systems generate zero carbon hot water from sunlight in a similar manner to Solar PV. They require insulated tanks to store the hot water and have greater maintenance demands than solar PV given the need to ensure anti-freeze in the pipework is topped up every few years. They can be a highly cost-effective technology particularly where mains gas supplies are not available, however, in energy efficient new homes, their benefit can be limited.

Heat Pumps

Heat pumps provide low carbon heat sourced either from the ground (Ground Source Heat Pumps) or air (Air Source Heat Pumps). This type of system is suited to thermally efficient buildings. They require mains electricity to operate but typically generate at around three units of heat for every unit of electricity that is consumed. Because the heat generated is at a lower temperature than that produced by a gas boiler, heat pumps typically require underfloor heating or over-sized radiators to ensure the heat is distributed efficiently. The government anticipates that the decarbonisation of the electricity network will shift design to using electric heating systems, including heat pumps.

At this stage potentially suitable technologies for consideration during the detailed design of individual homes in conjunction with future changes to the Building Regulations include Solar PV and Heat Pumps. These are noted within the FHS as the most likely technologies to be used to meet the forthcoming interim carbon reduction target.

Summary

In summary, the proposed dwellings will be designed in accordance with the principles of the energy hierarchy to include measures to reduce the primary energy use and carbon emissions which will achieve compliance with the Interim FHS.

Energy performance at this level will ensure the development minimises carbon emissions through the utilisation of the fabric first approach in line with the requirements of **Policy CC1 and CC4** of the new draft Local Plan, **Policy EC6** of the adopted Local Plan, and RDG9 of the Residential Design Guide SPD.

The feasibility and viability of low carbon and renewable energy technologies will be assessed during the detailed design of individual homes.

4.6.2 Climate Change Adaptation

To ensure the proposed development is resilient to the effects of climate change it will incorporate a number of key design measures in response to the climate predictions set out in the UKCP18 projections.

The UKCP18 projections demonstrate that over time the UK will experience increased summer and winter temperatures with significantly increased maximum temperatures, reduced summer rainfall, increased winter rainfall and an increase in extreme weather events.

The UK Climate Change Risk Assessment was updated in 2022 and identifies the key risks associated with the effects of climate change and in relation to the built environment, namely reduced summer water availability, increased winter rainfall and increased summer temperatures.

This section identifies key measures which will be incorporated into the design of new buildings and the proposed development to adapt to climate change.

Water Efficiency

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.

Essex and Suffolk Water is classed as being in an area of serious water stress[3], therefore, the new development will aim to reduce water consumption through a range of water efficiency measures such as:

- Dual flush WCs;
- Water meters;
- Low flow fittings; and
- Where appropriate, water efficient equipment.

Through the use of these measures new homes will target a water consumption rate of at least 110lpp/d, in line with **Policy CC4** of the new draft Local Plan, exceeding the national baseline requirement of 125l/p/d and significantly below the UK average of 150l/p/d.

Flood Risk and Drainage

A Flood Risk Assessment and Drainage Strategy has been prepared by Ardent Consulting Engineers, which indicates that the majority of the site is almost entirely located within Flood Zone 1 (there is a very low risk of fluvial flooding with an annual flood probability of less than 0.1%). The nearest areas at risk of fluvial flooding are associated with Prittle Brook, located along the southwest boundary of the site, containing small areas which are within Flood Zones 2 and 3. Proposed developable areas, however, are approximately 200m to the north and elevated by approximately 8m, therefore, fluvial flooding is not considered a risk to the development.

The site is not considered to be at risk of tidal flooding due to the lack of rivers and coastlines close to the site.

The site was deemed to be at low or very low risk of flooding from pluvial, groundwater, sewers, and other artificial sources. A surface water drainage strategy has been designed to manage the impact of a 1 in 100-year event plus a 45% allowance for climate change.

In accordance with **Policy CC3** of the new Local Plan, surface water run-off will be attenuated within a series of cascading Sustainable Urban Drainage features prior to being discharged to the existing ditch network at a restricted rate.

Further information on the sites flood risk and the proposed surface water management system can be viewed in the accompanying FRA and Drainage Strategy.

Overheating

With increasing summer temperatures there is an increasing risk of overheating in buildings which could adversely affect building occupants and users.

In recognition of this, new Part O of the Building Regulations specifies that new developments must take steps to mitigate the risk of overheating. Brook Farm will mitigate the risk of overheating and, through the provision of mitigation measures, so buildings will be able to adapt to and be resilient to future climatic changes.

4.7 Conserving and Enhancing the

[3] Water stressed areas – 2021 classification - GOV.UK (www.gov.uk)

Natural Environment

The proposed development will incorporate measures to support and enhance the environment through consideration of the existing site ecology, including measures to mitigate the impact of the site and enhance site biodiversity, as well as incorporate measures to reduce pollution from the site.

4.7.1 Ecology

An Ecological Impact Assessment and Biodiversity Net Gain Assessment has been prepared by SES to establish the ecological status of the site and the ecological implications of the proposed development at Land at Brook Farm, Daws Heath.

Measuring approximately 18.7 hectares, the site comprises mainly improved grassland fields bordered by hedgerows as well as scattered trees, dense scrub and ponds. A residential development and some farm buildings are also located to the southwest of the site. The site is bound to the north by the residential development of Daws Heath and Great Wood and Dodd's Grove Site of Special Scientific Interest (SSSI) lie to the south. Pound Wood Local Wildlife Site (LWS) also sits to the north of the site. Urban developments and mosaics of farmland and woodland can be found in the wider landscape.

Phase 1 and 2 ecology desk study, surveys and assessments have been undertaken which identified that the habitats within the site were not of high ecological value, apart from the hedgerows as some were classified as more important under the hedgerow regulation act (1997) and three ponds. A range of protected species could be found within the site including, a badger sett, foraging and commuting bats, breeding birds, invertebrates, priority species of mammal and reptiles.

The development proposals include 173 dwellings which will be developed within 6.43ha of the site and the remaining 12.27ha will be green space, providing habitats for protected species.

To minimise the impact of the development the following mitigation measures are proposed:

- Development proposals retain the majority of hedgerows and trees of importance;
- New native species hedgerows will be planted where minor loss is unavoidable and existing hedgerows will be enhanced through management plans;
- Fencing will be installed during construction and night works will be avoided, where possible, to protect hedgerows and woodland from construction damage;
- A sensitive lighting scheme will be designed for the development to protect hedgerows, woodland and ponds during occupation;
- A Construction Environmental Management Plan (CEMP) will be produced to prevent damage to habitats and wildlife during construction.

To enhance site biodiversity, a range of measures are included within the development proposals:

- Hedgerows will be enhanced through forming a buffer zone of at least 1m of ground flora;
- Enhancements will be achieved through connectivity on site between woodlands by enhancing hedgerows and providing species rich grassland. Stepping-stone habitats such as patches of scrub will also be included to increase connectivity;
- Ponds will be enhanced to provide biodiversity net gains through removal of fish and planting of native species. Additional ponds will also be included within development proposals and some will form part of the SUDS strategy.

As part of the development a Biodiversity Net Gain (BNG) calculation has been carried out and the development is committed to putting in place measures to ensure the development achieves a BNG gain.

More information is available in the Ecological Impact Assessment and Biodiversity Net Gain Assessment which accompanies the application.

4.7.2 Pollution

The proposed development will aim to minimise any negative impacts on the natural environment considering the impacts of air quality, noise, water use and materials. Some of the measures are listed below.

Maintaining and improving air quality:

- Cover skips and trucks loaded with construction materials and continually damp down with low levels of water;

Protecting and improving surface water and groundwater quality by:

- Reduce erosion and run-off by minimising land disturbance and leaving vegetation cover where possible;
- Segregate, tightly cover and monitor toxic substances to prevent spills and possible site contamination;
- Use non-toxic paints, solvents and other hazardous materials wherever possible;
- The construction works will be carried out in such a manner as to avoid adverse effects on the ponds, streams and downstream habitats in accordance with Environment Agency Pollution Prevention Guidance (PPG);
- To improve water quality during the occupation of homes the surface water drainage strategy will give consideration to measures to minimise pollution run-off; and
- Oil separators are proposed to treat surface water runoff from parking areas and the petrol forecourt area.

Minimising light and noise pollution by:

- Directional lighting and Variable Lighting Regimes will be used to suit both human and wildlife usage of the proposed development which involves switching off, or dimming lights, for periods of the night;
- Construction Environmental Management Plan (CEMP) to manage noise and light pollution during construction; and

Ensuring remediation of contaminated land so as not to pose a risk to health and the environment.

Noise Pollution - A Noise Assessment has been undertaken by Ardent Consulting Engineers to demonstrate how measured noise levels have been used to calculate and assess suitable glazing and ventilation specifications. The Noise Assessment confirms the following:

- The provision of closed windows and alternative ventilation, provided by trickle ventilation, is recommended for dwellings affected by road traffic noise;
- External sound levels within external amenity areas across the site will meet the required standards;
- There will be a negligible change in noise levels as a result of operational traffic at the site.

Sustainable Materials – In addition the development will aim to use a range of sustainable materials and design features in accordance with **Policy CC4** of the new Local Plan and will make use of;

- Sustainable timber from FSC (or equivalent) sources; and
- Materials specified using the BRE Green Guide to construction.

Insulation materials containing substances known to contribute to stratospheric ozone depletion or with the potential to contribute to global warming will not be used. Natural insulation materials such as mineral wool, rock wool or cork board will be considered as they are amongst the lowest Global Warming Potential (GWP) rating.

To further enhance the development a number of additional measures will be considered during the detailed design of new homes to minimise pollution, including:

- The use of key internal finishes and fittings which comply with best practice emissions levels of Volatile Organic Compounds (VOCs) and other substances;
- Where appropriate, the use of low NOx emission boilers, further reducing the impact of the development; and

- Specification of low Global Warming Potential (GWP) and zero Ozone Depleting Potential (ODP) insulation materials.

4.8 Waste Management

Construction Waste Management

Prior to the construction phase a Construction Environmental Management Plan (CEMP) will be developed to ensure the use of measures to minimise waste during the construction phases of the development, including the use of a scheme for recycling/disposing of waste arising from demolition and construction works. In addition, the development will be registered with the Considerate Constructors Scheme and achieve certification against the Code of Considerate Practice.

Operational Waste Management

In accordance with the principles of the waste hierarchy the development will make provision for the storage of non-recyclable waste and recyclable waste including dedicated storage for waste in new homes to encourage residents to recycle waste materials.

Full consideration will be given to the Council's waste management infrastructure and services to ensure that the occupiers have the necessary infrastructure to participate in any kerbside recycling services.

5. Conclusion

This Sustainability and Energy Statement has been prepared to demonstrate how the Proposed Development at Land at Brook Farm responds positively to national and local sustainable policy requirements.

The proposed development at Land at Brook Farm in Daws Heath has been designed to respond positively to national and local plan policy incorporating measures to deliver social and economic benefits, while also protecting and enhancing the environment where possible. This includes the consideration of measures to mitigate and adapt to the effects of climate change.

This Sustainability and Energy Statement which accompanies the application sets out key sustainable design measures incorporated at this stage and to be considered during the detailed design of homes.

Social and Economic Benefits – The development aims to provide a range of social and economic benefits to both new and existing residents, through:

- Provision of 173 new homes providing opportunities for local people;
- Provision of 40% affordable housing units;
- A development in a sustainable location adjacent to a wide range of existing services and amenities, including a medical centre and dental practice, a pharmacy, two primary schools, a secondary school, food and non-food retail, areas of public open space, an industrial park, and a retail park;
- Homes designed to create healthy living environments which are flexible for the future; and
- Provision of formal and informal open spaces for future residents and the local community to benefit from.

Environmental Protection and Enhancement – Through a range of design measures the development aims to protect and enhance the local environment, including:

- Buildings which will be designed to make use of sustainable materials to reduce environmental impacts of construction;
- Development designed to prioritise sustainable and active modes of travel including walking and cycling through the provision footways throughout the site. Cycle storage and electric car charging points will also be provided across the development;
- Provision of measures to protect on-site ecology, such as retention of species of importance, enhancement through management plans, implementation of a CEMP during construction, design of a sensitive lighting scheme for occupation, and protective fencing during construction;
- Measures to minimise the impact of the development and enhance site biodiversity, including retaining hedgerows and trees as far as possible, increasing connectivity on-site through enhancement of hedgerow, provision of species-rich grasslands and stepping-stone habitats, and enhancement of existing ponds as well as provision of new ponds; and
- Provision of measures through construction and operation of the site to reduce pollution, minimise waste and encourage recycling.

Mitigating and Adapting to Climate Change – The development will incorporate a range of measures to reduce carbon emissions, mitigating the effects of climate change, and adaptation measures to ensure the long term resilience of the development to the effects of climate change. Measures include:

- Buildings designed to reduce carbon emissions in accordance with anticipated changes to the Building Regulations through the use of energy hierarchy, using a fabric first approach to design to reduce energy demand, helping mitigate the effects of climate change;
- The deployment of renewable energy technologies such as roof mounted solar PV and/ or heat pumps;
- Provision of EV charging points;
- Specification of water efficient fittings to reduce water consumption to 110 litres per person per day in line with the government's higher water efficiency standard;
- Development of new homes in a low flood risk area and provision of a surface water drainage system designed to manage a 1 in 100 annual probability plus 45% climate change rainfall event; and
- Homes designed to comply with Part O of the Building Regulations, taking into account increasing annual temperatures set out in the UKCP18 climate projections to minimise the risk of overheating.

Countryside is committed to the delivery of sustainable homes which include measures which provide economic and social benefits, protect and enhance the environment, as well as mitigating and adapting to the long term effects of climate change.

Turley Birmingham

9 Colmore Row,
Birmingham
B3 2BJ

T 0121 233 0902

Turley
Sustainability