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EFDC SUSTAINABILITY GUIDANCE & CHECKLIST / MAJOR DEVELOPMENTS *(+10 units)*

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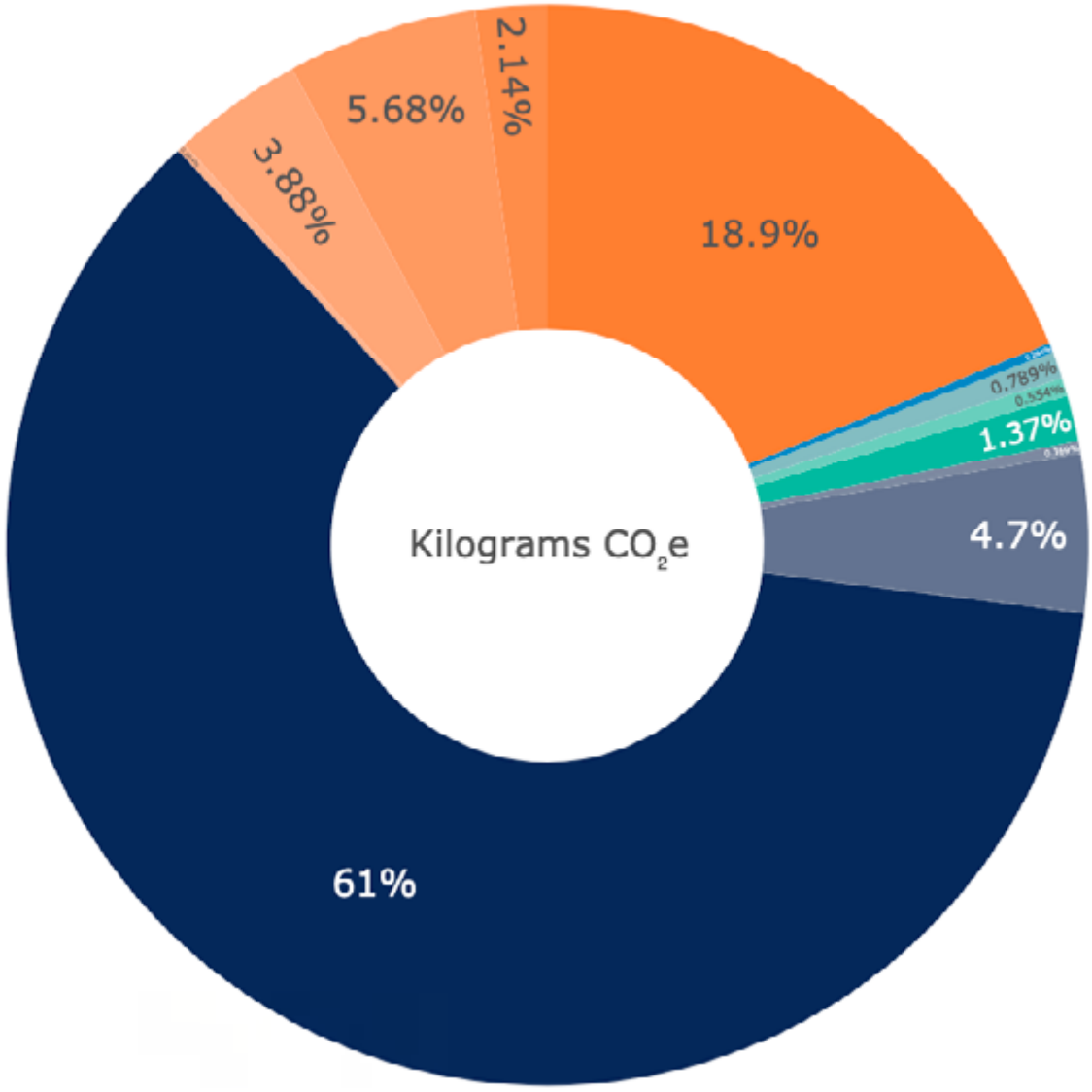
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INTRODUCTION

This document supports the highest environmental commitment across the District - to become net zero carbon by 2030

Overview

Epping Forest District has an annual carbon emission contribution of 2,048 CO2 (kt) across all industries (2017 data). The graph below provides a break down of the District's emissions based on sector:



- *Residential buildings*
- *Commercial buildings & facilities*
- *Institutional buildings & facilities*
- *Industrial buildings & facilities*
- *Agriculture*
- *Livestock*
- *Industrial Process*
- *Wastewater*
- *Solid waste disposal*
- *Off-road*
- *Aviation*
- *On-road*

Source: scattercities.com

Overview

CLIMATE EMERGENCY

The UK Government and Epping Forest District Council have declared a Climate Emergency.

The global climate is changing, primarily as a result of greenhouse gas emissions from human activity. Communities, businesses and the natural environment are already feeling the impacts of the changing climate. Continuted change is now unavoidable and will disrupt everyday life, with higher average temperatures and more extreme weather events.

This Sustainability Guidance supports the highest commitment across the District, which is to produce net zero cabon emissions by 2030. It sets out practical solutions to set out a clear design and construction process for any new development, into a net zero future. EFDC believes that in order to meet our climate change targets, all new buildings must operate at net zero carbon by 2030.

Sustainability focuses on meeting the needs of the present without compromising the ability of future generations to meet their needs. High quality sustainable developments require adopting a holistic approach to environmental, social and economic sustainability.

EPPING FOREST FOREST DISTRICT COUNCIL

The Council's emerging Local Plan sets out the most significant level of development to be brought forward across the District in a generation.

Within the period 2011-2033 the growth proposed in the emerging Local Plan will provide for a minimum of 11,400 new homes. Much of this will be delivered through larger strategic sites which will require planning applicants to take a proactive and considered approach to matters of environmental and socio-economic sustainability.

The emerging local plan looks to balance future development alongside ecological well-being, responding to the climate emergency and meeting objectives to improve health and well-being.

PLANNING POLICY CONTEXT

There is a strong and committed national and local policy context for planning environmentally, socially and economically sustainable places and developments, and climate adaptation.

The National Planning Policy Framework (NPPF) (February 2019) sets out national policy for local planning authorities and decision makers. The NPPF states that there is a presumption in favour of sustainable development (paragraph 11), with sustainable development having economic, social and environmental objectives.

The environmental objective is that development should protect and enhance the natural, built and historic environment as well as protecting biodiversity, minimising pollution and adapting to climate change and the demands of a low carbon economy.

COVID-19 RECOVERY

The guidance has been developed during the COVID-19 pandemic, which has highlighted stark health inequalities relating closely to environmental, social and economic inequalities.

Now more than ever, high quality, sustainable and resilient design and development is needed to ensure that existing and new residents of Epping Forest District recover from the pandemic in a long term and locally-led manner.

Opportunities to foster community strength, provide job opportunities, support green and local economies and bolster residents health must be taken. All stakeholders are therefore expected to work collaboratively to contribute to this recovery, and ensure that the District is a joyful and sustainable place to live, work and play.

How to use this guidance?

1 / PURPOSE OF THIS GUIDANCE

The purpose of this guidance is to help applicants meet EFDC's goals of becoming net zero carbon by 2030, as well as building strong and integrated communities across new and existing places.

Planning for significant growth in the District, new developments need to have in place the foundations to enable exemplar placemaking and long term sustainability. This document provides practical and technical guidance on how relevant Sustainability indicators and policies (environmental, social, and economic) in the Epping Forest District Local Plan will be applied to new major residential and non-residential developments across the district.

The Sustainability Guidance will promote good and best practice and whilst it will be a material planning consideration in determining planning applications, it will not be adopted policy. Planning officers will need to make a judgement in terms of compliance with the Guidance, and this will feed in to the decision making process. Planning officers will also recognize that not all of the checklist questions will be relevant to each application (due to scale, site constraints etc.)

2 / WHO USES THIS GUIDANCE?

Applicants + Agents:
The document is to be used by developers, design teams, consultants and contractors in shaping development proposals, This will guide design, and ensure coordinated and integrated consideration of sustainability principles and targets at an early stage.

Local Authority Officers and decision-makers:
This document will be endorsed to have material planning weight and the Checklist will help guide the assessment of planning applications for developments coming forward within the District. It will inform pre-application discussions and assist decision-makers in sustainability matters.

The EFDC Quality Review Panel (QRP):
This Checklist will be utilised for QRP reviews to help form the basis of Sustainability discussions. The QRP panel members are independent experts, and applicants are advised to be in a position to discuss issues on all categories raised in this guidance.

3 / WHEN TO USE THIS GUIDANCE?

Masterplanning: This guide should be used at as early a stage as possible in the design process in order to reduce costly and time-intensive re-design at later stages.

Pre-Application; The Sustainability Checklist should accompany pre-application discussions to ensure all applications have considered and incorporated sustainability measures from the outset of their design.

Planning Application; A Sustainability Strategy incorporating the Checklist, with relevant certification, is to be submitted alongside planning applications.

Post-Planning; Relevant conditions will be discharged and planning obligations and monitoring will be coordinated to ensure that sustainable measures are in place through to delivery and beyond. Tools such as Post-Occupancy Evaluation for ongoing monitoring will be expected relating to key indicators.

4 / HOW TO USE THIS GUIDANCE?

High quality and sustainable development requires environmental, social and economic sustainability to be holistically considered. The guidance is split into the following two sections:
1. Environmental Sustainability
2. Socio-Economic Sustainability

Each section comprises the following categories:
1. Objectives & Requirements
2. Key Local Policy & Guidance
3. Case studies
4. Checklist (to be completed and submitted)

There is also a glossary within the Appendix at the end of the document.

5 / SUBMISSION REQUIREMENTS

1. Sustainability Checklists
2. Sustainability Statement

The Sustainability Statement should be accompanied with relevant certifications.

6 / APPLICATION OF GUIDANCE

The guidance is applicable to all major developments within Epping Forest District. This will include:
- All major residential-led developments and associated infrastructure proposals (10+ units, or floorspace over 999 sq.m.)
- Change of Use resulting in major development

7 / THE CHECKLIST

The Checklists indicate the quality of development in line with the District's standards. These will be assessed in the round to ensure a holistic approach to sustainability is being considered. Each theme will be assessed in the context of factors that may be unique to a development, providing flexibility in how each development is assessed. The applicant is expected to identify unique sustainability aspects of their development and include these in the 'Sustainability Statement'.

All checklists should be completed for full planning applications / reserved matters applications. Outline planning applications need only to complete questions marked for outline applications.

Minimum Requirements (Low Quality)	**Net Zero-Carbon by 2050** (Medium Quality)	**Net Zero-Carbon by 2030** (High Quality)
Policy-compliant / Building Regulations compliant only	*These targets meet ultimate goal, but 20 years slower*	*These targets meet our goal and Climate Declarations*

8 / RELATIONSHIP TO THE LOCAL PLAN

This guidance has been endorsed to have material planning weight and should be read in conjunction with the policies found in the Epping Forest District Council Local Plan. It compliments the Local Plan policies by providing a practical tool for enhancing the sustainability of development in the District.

9 / PARTNERSHIP WORKING

Epping Forest District Council is committed to working with relevant organisations, service providers and community groups to ensure proposals are developed collaboratively and with thorough consideration of local priorities.

10 / REVIEW & MONITOR

The guidance will be reviewed and updated every 3 years. It will be reviewed upon national adoption of the Future Homes Standard. Current Building Regulations fall short of the 2030 net-zero carbon commitment by the District.

11 / INCENTIVES FOR SUSTAINABILITY

Design and Planning
Compliance with these sustainability standards will lead to a smoother planning process and faster assessment time.

Awards and Recognition
Exemplar schemes will be shared as case studies. The Council will work with applicants to put their schemes forward for local and national awards and partnership opportunities.

Cost Benefits
By 2030 all new buildings will need to operate at Net Zero (i.e. annual net zero carbon emissions), which means that by 2025 all new buildings must be designed to net zero carbon.

Net zero capital homes can be achieved at a capital cost uplift of between 3.5% - 15% for residential developments, or at equal cost - depending on economies of scale in alignment with various reports. (e.g. study of tower developments shows that net zero carbon homes can be achieved at a capital cost uplift of between 3.5% - 5.3%). This capital cost of sustainable buildings is likely to decrease over time as legislation improves, our electricity grid decarbonises, our supply chain upskills and cost of technologies decrease.

Costs can be offset by value benefits, including: increased rental premiums, lower tenancy void periods and lower offsetting costs. Furthermore, long-term operation costs of new homes are vastly reduced due to the lower energy demand from homes, eliminating changes such as fuel poverty, and providing cost savings of 30%-40% over 30 years. In a post COVID-19 society, more people are working from home, making sustainable homes and communities more attractive to homeowners and thereby providing a commercial benefit to developers.

2

ENVIRONMENTAL SUSTAINABILITY

This section looks at how Epping Forest District Council can become net zero carbon by 2030.

Design Approaches: First Principles

The following 'First Principles' are to be incorporated to ensure new developments are sustainable, and bring practical solutions towards good design. The principles act as an iterative design process, encouraging a wholistic approach to sustainability. The incorporation of these principles at an early stage of a development will make it easier to meet performance targets set out in the remainder of the Sustainability sections.

1 / LANDSCAPE LED DESIGN

The District is characterised by different types of landscapes. Study of existing strategies, analysis, survey and mapping should be undertaken of existing green infrastructure and ecological value of features. These include; topography, trees, hedgerows, woodland, grasslands, wetlands, meaowlands, farmlands, hills and lowlands, flood plains, views and vistas. Drawings, surveys, site photographs and precedent images should be utilised.

Design should be landscape led from the start and across all design stages. The best design and development outcomes will be delivered by engaging landscape and ecology consultants at an early stage. Additional spending on design fees will be very likely outweighed by the speed and ease of securing planning permission.

2 / SUSTAINABLE MOVEMENT

Identifying sustainable movement and active transport infrastructure is key to the success of sustainable growth in the District as they embed connectivity through movement corridors; playing a significant role in location, form and scale of development.

Local routes for everyday journeys to work, schools, and shopping should be identified as opportunities to knit communities together, rather than sever them. Strong transport links can tie-in with historic pathways identified through fine-grain analysis. Priority should be given to pedestrian and cycle networks that link to wider sustainable transport networks.

3 / ORIENTATION & FORM

Solar orientation must inform the topography, scale and massing of development at early stages of masterplanning, with south-facing buildings, fenestration, and amenities designed to take advantage of passive solar gain – absorbing the sun's heat energy to warm buildings and spaces. Building axis' should be orientated in the east-west direction to take advantage of maximum daylight and heat from the sun which significantly reduces the energy consumption of a building, and can reduce a homes' heating and cooling costs by up to 85%. To stay cool in the summer months and avoid overheating, external shading provisions should be made to the buildings and surrounding areas, including the use of green infrastructure.

A Daylight / Sunlight Assessment can help provide more information on how much natural light your development will be exposed to.

4 / ENERGY HIERARCHY

New developments should comply with the following Energy Hierarchy principles:

BE LEAN: Use less energy: minimising the energy demand of new buildings through fabric performance: This step requires design that reduces the energy demand of a development. Energy Strategies need to demonstrate how energy efficiency measures reduce the energy demand in line with performance targets highlighted in this document.

BE CLEAN & GREEN: Supply energy efficiently: utilising energy efficiently in buildings including for space heating & cooling: Consideration must be given to how heat and energy will be provided to the development using low-carbon heating networks.

BE SEEN: Monitor & Report performance: for at least 5 years post-completion to remove the performance gap: This requires all major developments to monitor and report their energy performance post-construction to ensure that the actual carbon performance of the development is aligned with the EFDC ambitions of a net zero-carbon target.

5 / ADAPTABLE & FUTURE PROOF DESIGN

Building strong communities is aided by giving households the opportunity to have accommodation that can adapt to respond to their changing needs and abilities. This means looking at the macro-scale provision of green and blue infrastructure and management for climate adaptation, futureproofing infrastructure for technological innovation, a range of house types, adaptable facilities and meanwhile use spaces. And through to the micro-scale; for example the space and ease in ability to extend homes and facilities (physical and digital) to work from home.

It is important that strong communities are not broken due to the lack of adaptable design.

6 / FABRIC-FIRST APPROACH

A fabric-first approach requires the building envelope to be a high-performance thermal envelope, reducing energy waste. This means the proposed buildings must have external walls, roofs, floors, windows & doors that are: super insulated, airtight, and windtight.

A fabric-first approach includes the windows and doors – which provide significant heat loss and heat gains – depending on solar orientation. Windows and doors must therefore incorporate high-performance glazing to provide comfortable internal temperatures. A high-performance thermal envelope delivers exceptional indoor comfort and building energy efficiency.

7 / VENTILATION & OVERHEATING

A mixed-mode (natural and mechanical) ventilation strategy is encouraged for excellent indoor air quality. This involves the incorporation of a whole-house mechanical ventilation with heat recovery system (MVHR) – which is key to delivering radically energy efficiency and exceptional comfort, through providing clean, filtered air into habitable spaces.

Early stage overheating analysis will be expected to be carried out at design stage to identify key factors contributing to overheating risk. Where developments are at risk of overheating, additional detailed assessment and mitigation measures will be expected to be incorporated.

8 / EMBODIED & OPERATIONAL ENERGY

All design teams are expected to think about, and reduce the embodied energy required to develop their schemes. For example, depending on location, height, and site suitability, materials like timber could be favoured over less sustainable alternatives such as concrete.

In terms of operational energy, Developments should be aiming for net zero carbon – where energy on an annual basis is zero or negative. A net zero carbon building is highly energy efficient and powered from on-site and/or off-site renewable energy sources. Developments should be designed using realistic predictions of operational energy to avoid performance gap in a buildings' energy use.

9 / RENEWABLE TECHNOLOGIES

Renewable energy uses natural resources such as sunlight, wind, tides and geothermal heat which are naturally replenished. Most forms of renewable energy are cheap to operate, but can be expensive to install.

Examples of technologies include; PV's, solar thermal, ground/air source heat pumps, wind, hydro. The choice of renewable technologies should be dependent on an assessment on site and development suitability.

10 / AIRTIGHT & THERMAL BRIDGE FREE

An airtight strategy focuses on the internal comfort of a building, and will be required to develop a draught-free building envelope. The draught-free building ensures high energy efficiency, internal user comfort, and protects the building envelope. The airtight strategy must be continuous to ensure there are no unintended gaps in the building envelope that allow uncontrolled air to leak in and out of the building.

Internal comfort can be affected by excessive heat loss through the building fabric caused by poor detailing around junctions in the building envelope. Gaps in the insulation barrier or large areas of conductive thermal bridging should be designed out.

Post-occupancy evaluation enables air tightness and thermal bridging to be measured, to help close the known performance gap in these areas.

Energy Efficiency & Carbon

OBJECTIVES & REQUIREMENTS

The transition to net zero-carbon by 2030 must begin with providing genuinely affordable homes. Beyond the planning system, the government is considering changes to legislation and policy that will promote lower carbon buildings. Changes to Building Regulations to improve the energy efficiency of new homes were recently subject to consultation.

All new buildings should look to adopt a fabric-first approach (e.g. Passivhaus Standards), with the expectation that as our grid system decarbonises and we build more energy efficient homes, emphasis will be placed on the embodied energy involved in constructing new buildings.

With the decarbonising of the National Grid, achieving net zero-carbon will mean developments must respond to the key components of whole-life carbon; embodied carbon and operational energy. Achieving net zero operational energy means the building does not burn fossil fuels and is 100% powered by renewables.

A Whole Life Carbon (WLC) Assessment should be undertaken both during the pre-application stages and after practical completion, as new homes are expected to last 60+years, with carbon emission reduction in line with the targets in the Checklist.

Embodied Carbon Reduction Strategy:
- Using circular economy principles of reuse and refurbish, and designing for disassembly at end of life with processes including using offsite construction.
- Building low-energy homes, using fossil fuel-free technology to supply heating and power to them. Using renewable energy where necessary

Operational Carbon Reduction Strategy:
- Not burning fossil fuels for supply to homes
- 100% powered by renewable energy i.e.heat pumps
- Achieving energy performance in line with checklist

Embodied carbon can be measured by design teams by various software that allow quick analysis and visual representation of carbon use.

KEY LOCAL POLICY & GUIDANCE

EFDC Local Plan Policy:

- **SP2** Place Shaping
- **SP3(xvii)** Highest standards of energy efficiency
- **T1** Sustainable transport choices
- **T2** Safeguarding of routes and facilities
- **DM9** High Quality Design
- **DM20** Low Carbon and Renewable Energy
- **DM21** Local Environmental Impacts, Pollution and Land Contamination
- **DM 22** Air Quality

- Net Zero Carbon Buildings: A Framework Definition (UKGBC)

CASE STUDIES



Marmalade Lane, Cambridge
New masterplan built with fabric-first approach for energy efficient homes, alleviating fuel-poverty.



Goldsmith Street, Norwich
New masterplan built to Passivhaus standards, needing little energy for heating and cooling.



Virido, Cambridge
Zero-carbon development of 208 homes, achieving Code for Sustainable Homes Level 5.

SUBMISSION CHECKLIST		Minimum Requirement	Net Zero-Carbon by 2050	Net Zero-Carbon by 2030
En.1 *	Operational Energy (KWh/m2/y) *(includes both regulated and unregulated energy use in the building, as measured at the meter)*	146 ☐	< 70 ☑	< 0 - 35 ☐
En.2*	Embodied Carbon (kgCO2e/m2)	1000 ☑	< 450 ☐	< 300 ☐
En.3 *	For applications greater than 99no. units, what BREEAM Communities Level is met?	Very Good ☐	Excellent ☑	Outstanding ☐
En.4	Space Heating Demand (KWh/m2/y)	54.26 ☐	25 ☑	15 ☐
En.5	Airtightness (air changes/ hr @ n50)	5 ☐	3 ☑	≤ 0.6 ☐
En.6	Ventilation Strategy (m3/hr/person)	Natural - extract fans ☐	Mechanical with extract fans ☐	Mechanical Heat Recovery (30) ☑
En.7	What is the on-site reduction in CO2 emissions against Building Regulations Part L (2013)?	0-34% ☐	35%-50% ☑	≥ 50% ☐
En.8	What Fabric U-Values has the proposal been designed to meet? W/(m2K)	☐	☑	☐
	External Walls	0.30 - 0.16	0.15 - 0.13	< 0.13
	Floor	0.25 - 0.11	0.10 - 0.08	< 0.07
	Roof	0.20 - 0.13	0.12 - 0.10	< 0.10
	Windows (triple glazing) & Doors	2.00 - 1.4	1.3 - 1.00	< 0.9
	Please attach Tables 12 & 13 of your Whole Life Carbon Assessment (see Appendix 3)			☐
	Please attach relevant certification of the above standards you have chosen, and use 'Sustainability Summary' pages where you are adding any further information.			

*** Outline planning applications need only respond to questions marked with an * asterisk. For full planning applications / reserved matters applications, please respond to all questions.*

Renewable Energy

OBJECTIVES & REQUIREMENTS

Our recent extreme weather has highlighted the need to ensure that buildings constructed today are fit for the future, and, designed for resilience over the next 60+ years. New developments have a unique opportunity to ensure that the heating and hot water they generate are fossil fuel free, as heat demand is estimated at more than 40% of the energy consumed across the District.

On-site renewable technologies such as Heat Pumps, Solar Photovoltaics, and Solar Thermals should be explored for adoption, and combined to provide the greatest benefit to new developments.

Applicants are to use the LETI Heat Decision Tree throughout the design stages, to assist them in choosing the most appropriate heating system. Renewable systems should be prioritised over connecting to district heating networks, which depend on fossil fuels.

New Developments should be designed to;

• Join Heat Sharing networks: particularly relevant for these strategic mixed-use development sites where opportunities for load shifting and heat sharing occur.
• Minimise system temperatures: high temperatures in heating systems are synonymous with fossil-fuel combustion
• Reduce Heat Demand at point of use: The greatest opportunity to meeting net zero-carbon emissions is to reduce the amount of heat needed: achieved through a fabric-first approach and limited hot water use, coupled with reuse of low temperature waste heat sources.
• Lean Design: load modelling can predict energy use and help size plant requirement.
• Harness Waste Heat: heat released as a by-product of an existing process enables otherwise wasted heat to contribute to meeting energy demands.

Please note that whilst categorised as a source of renewable energy, biomass has negative impacts on air quality and climate change, and therefore EFDC will not support applications where biomass is proposed.

KEY LOCAL POLICY & GUIDANCE

EFDC Local Plan Policy:

• **SP3 (xvii)** Highest standards of energy efficiency
• **DM9** High Quality Design
• **DM19** Sustainable Water Use
• **DM20** Low Carbon and Renewable Energy

CASE STUDIES



Project Etopia, Corby
Uses combined solar PV's and thermal panel to deliver net zero carbon on site.



Active Homes, Neath, South Wales
Battery technology used to store energy and solar PV & TSC's to generate 60% energy.



Tallack Road, Waltham Forest, London
Large-scale communal Air Source Heat Pump to feed ambient temperature heat network

SUBMISSION CHECKLIST		Minimum Requirement	Net Zero-Carbon by 2050	Net Zero-Carbon by 2030
Rn.1*	What on-site renewable energy technologies have been included in your development?	PV's + EV charging / CHP's ☐	Low-temperature District Heating ☐	Heat Pumps / Solar Thermal ☑
Rn.2*	What percentage of CO2 emission reduction is planned to be provided from on-site renewable energy sources? *(SAP 10 carbon emission factors to be used for calculation)*	> 20% ☑	> 50% ☐	> 70% ☐
Rn.3	What percentage of household electricity will on-site renewable technology provide? *(Net zero operational carbon does not burn fossil fuel and is 100% powered by renewables)*	> 35% ☐	> 50% ☑	100% ☐
Rn.4	Have any relevant government incentivised schemes been taken advantage of? *i.e. Non-Domestic Renewable Heat Incentive (RHI)*	None ☑		Non-Domestic RHI ☐
Rn.5	Space Heating Peak (kWh/m2/y)			10 (Equiv. to 6 kWh/m2.yr renewable electricity from the grid) ☑
Rn.6	Domestic hot water peak (kWh/m2/y)	42 ☐	20 ☑	6 (Equiv. to 9 kWh/m2.yr renewable electricity from the grid) ☐
	Please attach Energy Assessment			☐
	Please attach relevant certification of the above standards you have chosen, and use 'Sustainability Summary' pages where you are adding any further information.			

*** Outline planning applications need only respond to questions marked with an * asterisk. For full planning applications / reserved matters applications, please respond to <u>all</u> questions.*

Green Infrastructure

OBJECTIVES & REQUIREMENTS

Epping Forest District has a predominantly agricultural landscape, with remnants of an extensive ancient forest reflected in both Epping Forest as well as pockets of woodland and mature trees located across the District. New developments risk harm to the Epping Forest SAC, already under pressure due to pollution and recreational use, unless suitable mitigation measures are implemented. The delivery of new multifunctional green infrastructure will reduce the burden on the Forest and will be proactively encouraged by the Council.

The green infrastructure network of the District must be considered in an integrated way. Design of streetscapes and amenity spaces, with urban greening such as street trees, pocket parks, garden hedgerows, greens roofs and swales, can provide placeshaping benefits as well as contribute to climate resilience, through biodiversity enhancement and mitigating overheating. Play, social spaces, food growing, art and heritage trails should be integrated early into designs, with active frontages onto green spaces, to ensure natural surveillance.

Proposals must be landscape-led from the start, as set out in the EFDC Green Infrastructure Strategy. They should respond to the District's distinctive setting; expand and enhance the green and blue infrastructure network; and improve access to, and the quality of, the surrounding Green Belt. The GI Strategy details how Suitable Alternative Natural Greenspace (SANG) should be provided as part of new Strategic Masterplan Areas to relieve pressure on the SAC, as well as other important sites of ecological and natural heritage importance. Where applicable, a Landscape Framework should be submitted detailing the provision of SANG.

The Environmental Bill requires development to deliver at least a 10% Biodiversity Net Gain (BNG), Stewardship and Maintenance strategies should clearly set out net gain outcomes, through habitat creation or enhancement for a minimum of 30 years. Local species should be specified to ensure long-term resilience. The GI strategy should be referred to with regards to stewardship, as it identifies stewardship models to ensure sustainable management and maintenance of green infrastructure.

KEY LOCAL POLICY & GUIDANCE

EFDC Local Plan Policy:

- **SP2** Place Shaping
- **SP6** The Natural Environment, Landscape Character and Green and Blue Infrastructure
- **DM1** Habitat protection and improving biodiversity
- **DM2** Epping Forest SAC and the Lee Valley SPA
- **DM3** Landscape Character, Ancient Landscapes and Geodiversity
- **DM5** Green and Blue Infrastructure
- **DM6** Designated and undesignated open spaces
- **DM9** High Quality Design
- **DM15** Managing and reducing flood risk
- **DM22** Air Quality

- EFDC Green Infrastructure Strategy
- EFDC Open Space Strategy

- Essex SuDS Design Guide
- Green Essex Strategy
- Essex Biodiverstiy Action Plan
- Stort Catchment Management Plan
- Green Arc Strategy

CASE STUDIES



Ecology of Colour, Dartford by Studio Weave
Part of a project to bring public function and engagement with local ecology to a neglected corner of Dartford.



Thames Basin Heaths Special Protection Area
In order to allow new development while safeguarding the integrity of the area, the Council has put in place mitigation measures including SANG.

SUBMISSION CHECKLIST		Low Quality	Medium Quality	High Quality
Gr.1*	Has a high quality landscape-led approach been demonstrated as set out in the EFDC Green Infrastructure Strategy?	No ☐	Some landscape analysis undertaken ☑	Ecology, topography, vistas, character & features driving design ☐
Gr.2*	What % of Biodiversity Net Gain does your development achieve? *(Environmental Bill requires min. 10%)*	0-9% BNG ☐	10-15% BNG ☑	15%+ BNG ☐
Gr.3*	Does the Ecology report show process of mitigation and location hierarchy, with Stewardship and Maintenance strategy provided for green infrastructure and BNG?	No strategy ☐	Outline strategy provided ☐	30 year strategy with input from community ☐
Gr.4*	Have play, community amenity and food production opportunities been proposed? Fields in Trust distances should be followed for play spaces.	No ☐	Yes - locations mapped with walking isochromes ☑	Yes - locations mapped, characters defined, strategies for play / food / active frontages ☐
Gr.5*	Has a Landscape Framework been provided that articulates whether an integrated approach has been taken to the provision of SANG, including the use of recognised tools to assess its value/quality? (e.g. Natural Capital Tool/ Ecometric)	No ☑	Yes - qualitative assessment undertaken ☐	Yes - qualitative assessment/ value calculated with exemplary score ☐
Gr.6*	Has an overheating assessment or modelling been provided, as set out in UKGBC's Housing Standards Playbook, taking into account impact of green infrastructure?	No ☐	Some assessment provided ☐	Yes - UKGBC Playbook followed ☑
Gr.7*	Has multifunctional green infrastructure been proposed at different scales, with clarity on how its quality and quantity reinforces the District?	Different scales not explored ☑	Yes - different scales shown, roles/ function undeveloped ☐	Yes - small, medium and large GI shown, qualities and roles defined ☐
	Please attach relevant certification of the above standards you have chosen, and use 'Sustainability Summary' pages where you are adding any further information.			

Sustainable Movement

OBJECTIVES & REQUIREMENTS

Sustainable movement and active transport infrastructure are key to the success of sustainable growth in the District, as 61% of the District's carbon emissions are caused by on road vehicles (refer to p.6). The provision of sustainable transport choices and securing modal shift away from reliance on the car is a key component in mitigating the future impacts of air-borne pollutants on the health of both the Epping Forest Special Area of Conservation and local residents, and achieving net zero carbon by 2030.

Development should minimise the need to travel, promote opportunities for sustainable transport modes, improve accessibility to services and support the transition to a low carbon future. New proposals must futureproof for change in travel habits, including reallocating parking and road space, innovation in travel technology, last mile deliveries and electric charging. Masterplanning for sustainable movement should address: walkable low-traffic neighbourhoods, sociable streets and placemaking; cycling, walking and public transport network; behaviour change programmes; rebalancing car use and parking design (including carpooling and car sharing) and availability; futureproofing with adaptable technology; deliveries and servicing; and construction impacts.

Development will be supported where they:
(i) promote sustainable transport choices, through improvements to public transport services and supporting infrastructure, and providing coherent and direct cycling and walking networks to provide a genuine alternative to the car and facilitate a modal shift
(ii) promote and improve safety, security and healthy lifestyles;
(iii) do not result in unacceptable increases in traffic generation or compromise highway safety.

Development proposals that are likely to generate significant amounts of vehicle movement (as defined in the Council's list of Validation Requirements) will be required to submit a Transport Assessment or Transport Statement and be supported by a Travel Plan.

This section should be read in conjunction with the Air Quality chapter.

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KEY LOCAL POLICY & GUIDANCE

EFDC Local Plan Policy:

- **SP2** Place Shaping
- **SP3 (xvii)** Highest standards of energy efficiency
- **T1** Sustainable transport choices
- **T2** Safeguarding of routes and facilities
- **DM9** High Quality Design
- **DM20** Low Carbon and Renewable Energy
- **DM21** Local Environmental Impacts, Pollution and Land Contamination
- **DM22** Air Quality

- Essex County Council Travel Plan Guidance
- Epping Forest District Cycling Action Plan
- EFDC Parking Standards
- Transport for London's Healthy Streets Approach

CASE STUDIES



St Chads Development, Essex
Designated as shared surface 'home zones', streets are designed to meet the needs of pedestrians and cyclists, and reduce the speed of vehicles.



Mini-Hollands,
Involve a range of innovative improvements for cyclists, including cycle training, cycle roadshows, bike maintenance courses and cycle parking.



Brooklands, Milton Keynes
A comprehensive network of routes for active travel and links into the wider Milton Keynes network of footpaths and 'Redways' (safe paths for walking and cycling across the city).

SUBMISSION CHECKLIST		Low Quality	Medium Quality	High Quality
Tr.1 *	Have walkable, low-traffic and permeable neighbourhoods been designed as a first principle?	No - vehicle access design prioritised ☐	Transport hierarchy considered ☑	Yes - walking & cycling desire lines, network, topography, user hierarchy as design drivers ☐
Tr.2 *	Have safe and high quality connections to active travel networks beyond the development boundary been proposed with Green Infrastructure (GI) considered?	Ongoing connectivity not considered ☐	Some connectivity - lacks GI consideration ☑	Strong connections to networks, with clear relationship to GI ☐
Tr.3	Have inclusive design principles / accessibility for all regarding sustainable movement been achieved?	Meets Equalities Act ☑	Inclusive Design Statement provided ☐	Exemplary inclusive design provided ☐
Tr.4	Has cycle parking been designed to be high quality, safe, secure and easy to access?	Cycle parking not provided ☐	Suitable quantity of spaces provided ☑	Suitable quantity and high quality environment provided ☐
Tr.5	Has a high quality transport assessment been undertaken?	No ☐	Yes - assessment undertaken ☑	Yes - qualitative assessment undertaken ☐
Tr.6	Has a thorough Sustainable Travel Plan been provided? Has Modeshift Stars accreditation been explored?	No ☑	Sustainable Travel Plan provided ☑	Yes - including behaviour change programme, travel coordinator, monitoring ☐
	Please attach relevant certification of the above standards you have chosen, and use 'Sustainability Summary' pages where you are adding any further information.			

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Water Management

OBJECTIVES & REQUIREMENTS

Due to the combined challenges of growing populations within Epping Forest District, changing land uses and the finite supply of water, action is required now to ensure the availability of water for the future. The Environment Agency has identified the District as being in an area of 'serious water stress'. There is likely to be less water available for future generations and therefore a need for demand management and water efficiency in the area.

It is important that any new development does not lead to an overall increase in demand for water. The Local Plan puts in place an approach which will secure the incorporation of water saving measures and provide targets for water efficiency standards.

The incorporation of sustainable drainage systems (SuDS), that mimic natural drainage and encourage its passive infiltration and attenuation, will be encouraged in all new developments. To avoid increased flood risk and make effective use of existing and planned drainage infrastructure, rainwater should be managed as a valuable resource rather than a waste product. A multi-functional approach to the delivery of SuDS can provide interest in the provision of public open space, and increase biodiversity.

New developments should therefore look to:
i) Reduce the risk of flood through the use of sustainable drainage systems (SuDS)
ii) Minimise use of mains water by incorporating water saving measures and equipment, and by designing residential developments so that mains water consumption is reduced in accordance with requirements found in the table overleaf.
iii) Promote the use of rainwater harvesting and using dual potable and grey water recycling measures

New developments will also be encouraged to incorporate carbon reduction systems, such as a waste water heat recovery system.

For more information on SuDS please refer to the EFDC Green Infrastructure Strategy.

KEY LOCAL POLICY & GUIDANCE

EFDC Local Plan Policy:

- **SP4(xvii)** Highest standards of energy efficiency
- **DM9** High Quality Design
- **DM16** Sustainable Drainage Systems
- **DM19** Sustainable Water Use
- **DM20** Low Carbon and Renewable Energy

- EFDC Green Infrastructure Strategy
- Essex SuDS Design Guide

CASE STUDIES



Flood Management
Knostrop Weir (Leeds) provides an echelon of three new pneumatically moveable weirs that can be lowered to let floodwater discharge quickly downstream; and a shared foot and cycle bridge



Ladywell Fields, Lewisham (SuDS)
Designed to create more sustainable drainage and reduce flooding, the river channel was modified to create a naturalistic setting incorporating backwaters and wetlands.

SUBMISSION CHECKLIST		Minimum Requirement	Net Zero-Carbon by 2050	Net Zero-Carbon by 2030
W.1 *	What water collection or recycling measures will be used?	100% provision of water butts ☐	Rainwater harvesting systems ☑	Grey water recycling & harvesting ☐
W.2 *	How much of the hard surfaces within the development and conveyance systems will be permeable (i.e streams, swales)	50% ☑	75% ☑	100% ☐
W.3 *	Have other SuDS measures been proposed? (i.e. permeable surfaces, rain gardens, green roofs, ponds/wetlands, soakaways)	No ☑		Yes ☐
W.4	Will water saving devices be installed wherever possible in the development? e.g. low flush toilets, smaller baths, taps and showers with flow regulators	No ☐		Yes ☑
W.5	Potable Water: What is the expected internal water use (litres/person/day)?	110 ☐	95 ☑	75 ☐
	Please attach relevant certification of the above standards you have chosen, and use 'Sustainability Summary' pages where you are adding any further information.			

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Circular Economy

OBJECTIVES & REQUIREMENTS

New developments should promote circular economy outcomes and aim to be net zero waste. In the UK, the largest contributor to waste nationally is the construction and demolition industry where a third of all waste is generated.

New developments within EFDC are to be designed to reduce construction waste and enable ease of access for future occupants to recycle and reduce waste. This can be encouraged through adopting a circular economy approach and the Waste Hierarchy found in the DEFRA Guidance.

Building in Layers principles should be adopted to determine realistic lifetimes for the elements of a building, and adapt the structure and fabric. Homes should be designed to be adaptable and flexible by considering the intended lifespan of each independent building layer, optimising building longevity and maximising material reclamation at end-of-life.

3 Key Principles expand the Circular Economy process:

1. Conserve Resources, Increase Efficiency, Source Ethically:
- Minimise the quantities of materials used by specifying low embodied carbon materials, and resuable materials.
- Minimise the quantities of other resources used including energy, water, and land.

2. Eliminate waste and ease maintenance by:
- Long-life & Loose fit: build to adapt to changing social, physical and economic environments.
- Design for Disassembly: at the commencement of the project, set out deconstruction plan and capture asset value.

3. Manage waste sustainably and at the highest value: this includes construction, demolition & excavation waste, operation & municipal waste

A Circular Economy Statement and Operational Waste Management Strategy should be provided to demonstrate chosen approach.

KEY LOCAL POLICY & GUIDANCE

EFDC Local Plan Policy:

- **SP3 (xvii)** Highest standards of energy efficiency
- **DM9** High Quality Design
- **DM20** Low Carbon and Renewable Energy
- **DM7** Heritage Assets
- **DM8** Heritage at Risk

- Circular Economy Guidance for Construction Clients (UKGBC)

CASE STUDIES



Illford Community Market, London
Designed for five years and will be dismantled and reconfigured on future meanwhile sites.



Queen Elizabeth Olympic Park, London
A waste target of 90% diversion from landfill of demolition waste by weight



Cork Housing, Studio Bark
A garden building made almost entirely out of cork, constructed as a building that can be completely recycled, reused or composted.

	SUBMISSION CHECKLIST	Minimum Requirement	Net Zero-Carbon by 2050	Net Zero-Waste by 2030
CE.1	How much of the materials used on site are sourced from ethical and responsible supply chains?	80% ☐	95% ☑	100% ☐
CE.2	How much of the materials used are non-toxic?			100% ☐
CE.3	How much of the materials used can be easily extracted, recycled, and manufactured?	80% ☐	90% ☑	95% ☐
CE.4	To what amount are the new buildings circular-by-design?	20% ☐	40% ☑	65% ☐
CE.5	How much of the materials used are 'reusable'?			80% ☐
CE.6	How much of the materials used are 'reused'?			50% ☐
CE.7	How much biodegradable and recyclable waste will be diverted to landfill?			0 ☐
	Please attach the Circular Economy Statement			☐
	Please attach relevant certification of the above standards you have chosen, and use ‘Sustainability Summary’ pages where you are adding any further information.			

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Waste Management

OBJECTIVES & REQUIREMENTS

In line with becoming net zero carbon by 2030, EFDC want to ensure that the amount of waste produced by residents and visitors, as well as landfill waste, is significantly reduced, recycled, and used as a resource.

Developments should therefore be designed to ensure that residents and visitors to the District reduce the amount of waste they produce; with an overall ambition that no waste will end up as landfill.

This section of the guidance is linked closely with the section on Circular Economy regarding the necessity of designing buildings and places in a way that maximises the lifespan of a building and its components.

Innovative solutions for recyclable waste management, including underground refuse systems, are encouraged and applicants should support such initiatives. Whilst Essex County Council is responsible for decisions relating to the District's waste management, EFDC have a clear ambition to prevent waste going to landfill. Applicants are therefore expected to explore innovative ways to reduce waste at design stages, increase efficient recycling opportunities, and reduce household residual waste (including designing in opportunities for local food production through the provision of allotments, and space / opportunities for domestic composting).

Developers are expected to provide Operational Waste Strategies, including details of management of recyclable waste, residual waste and food waste. Developers are also encouraged to be innovative in contributing towards waste reduction campaigns.

KEY LOCAL POLICY & GUIDANCE

EFDC Local Plan Policy:

- **SP3 (xvii)** Highest standards of energy efficiency
- **DM9** High Quality Design
- **DM19** Sustainable Water Use
- **DM20** Low Carbon and Renewable Energy
- **DM11** Waste recycling facilities on new development
- **DM18** On site management of waste water and water supply

Essex County Council Waste Local Plan

CASE STUDIES



Eddington, Cambridge
Underground chutes replace thousands of traditional wheelie bins in an innovative waste disposal system



London Olympic Park, London
A waste target of 90% diversion from landfill of demolition waste by weight



Millerhill, Midlothian
Residual waste recycling and energy recovery facility

SUBMISSION CHECKLIST		Minimum Requirement	Net Zero-Carbon by 2050	Net Zero-Waste by 2030
Wa.1*	Has early engagement been undertaken with the EFDC Waste Management team to ensure their processes are taken into consideration?	No, LPA not engaged ☑		Yes, demonstrated ☐
Wa.2*	Have developments been designed to encourage ease in waste recycling?'			Yes ☑
Wa.3	How much construction, demolition and excavation (CD&E) waste will be recycled? *(This is to be incorporated in your Construction Management Plan)*			≥ 95% ☐
Wa.4	How much municipal waste (operational waste) will be recycled or composted vs sent to landfill or energy recovery?			65% : 35% ☐
	Please attach the Construction, Demolition and Excavation Waste Strategy			☐
	Please attach the Operational Waste Management Strategy, promoting reuse & recycling			☐
	Please attach relevant certification of the above standards you have chosen, and use 'Sustainability Summary' pages where you are adding any further information.			

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Air Quality

OBJECTIVES & REQUIREMENTS

Every new development will have an impact on air quality, usually by increasing emissions from buildings or due to traffic generation. Poor air quality arises from sources including; traffic and transport, industrial processes, domestic and commercial premises, energy generation, agriculture, waste storage/treatment and construction sites.

Air pollution arising as a result of new developments risks harm to the Epping Forest Special Area of Conservation (SAC). New developments also risk cumulatively increasing local pollution levels which can negatively impact on human health. All new developments in the District should attempt to mitigate negative impacts on human health, and take in to consideration the District's requirements on Local Air Quality Action Plan, and Air Quality Assessments for developments. Developments should aim to improve local air quality, even if the area already complies with the air quality objectives. An air quality neutral assessment can assist with this.

The following net health gain principles (adopted from Public Health England's guidance) should be incorporated in to proposals during the design stages to reduce emissions and contribute to better air quality management; applicable irrespective of air quality assessments:

1. Reduce the need to travel by car to destinations
2. Provide zero / low-emission travel options (EV's)
3. Avoid siting buildings with vulnerable users (i.e. schools, nurseries, care homes) in areas where pollution levels are likely to be higher.
4. Avoid creating 'street canyons' which encourage pollution to build up
5. Incorporate green infrastructure to promote carbon and pollution sequestration
6. Orientate and design buildings to rely less on heating and cooling systems
7. Site residential accommodation away from roadsides
8. Incorporate whole-house ventilation systems for good indoor air quality

This section should not be used as a substitute for work otherwise undertaken in any normal full planning application. It should be read in conjunction with the Sustainable Movement chapter.

KEY LOCAL POLICY & GUIDANCE

EFDC Local Plan Policy:

- **SP3 (xvii)** Highest standards of energy efficiency
- **DM2** Epping Forest SAC and the Lee Valley SPA
- **DM8** Local Plan Review
- **DM9** High Quality Design
- **DM19** Sustainable Water Use
- **DM20** Low Carbon and Renewable Energy
- **DM21** Local Environmental Impacts, Pollution and Land Contamination
- **DM22** Air Quality

- EFDC Green Infrastructure Strategy
- EFDC Air Pollution Mitigation Strategy

SUBMISSION CHECKLIST		Low Quality	Medium Quality	High Quality
P.1 *	Have mitigation measures as described in the District's Air Pollution Mitigation Strategy been adhered to?			Yes ☐
P.2 *	Where the development has the potential to impact on air quality, has an air quality assessment been undertaken to ensure present and future occupants are not exposed to unacceptable levels of air pollution?	No ☐		Yes ☑
	Please attach relevant documentation, and use 'Sustainability Summary' pages where you are adding any further information.			

*** Outline planning applications need only respond to questions marked with an * asterisk. For full planning applications / reserved matters applications, please respond to all questions.*

Non-Domestic Development

OBJECTIVES & REQUIREMENTS

Epping Forest District Council seeks to ensure that climate resilience is built-into every project built in the District for decades to come, including non-domestic development.

It is recommended for all new non-domestic developments to follow the BREEAM assessment method, and to provide the relevant certification as part of the submission.

KEY LOCAL POLICY & GUIDANCE

EFDC Local Plan Policy:

- **SP3 (xvii)** Highest standards of energy efficiency
- **DM 9** High Quality Design
- **DM 16** Sustainable Drainage Systems
- **DM 17** Protecting and enhancing watercourses
- **DM 19** Sustainable Water Use
- **DM 20** Low Carbon and Renewable Energy

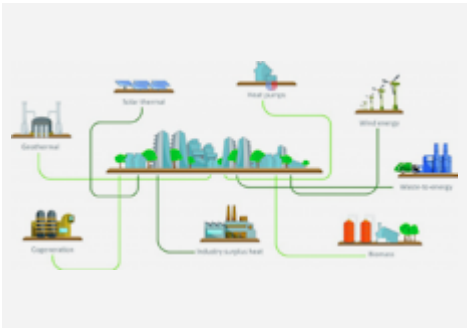
CASE STUDIES



External Shading
External shading devices can be incorporated to prevent excessive internal solar gains and avoid overheating



Green Roofs
Green roofs can increase the thermal mass of a building, absorbing solar energy through the day and releasing heat at night.



Low-Carbon District Heating
The use of district heating to help manage the demand and supply of heat efficiently across larger developments.

SUBMISSION CHECKLIST		Minimum Requirement	Net Zero-Carbon by 2050	Net Zero-Carbon by 2030
ND.1 *	What BREEAM rating is the development targeting?	Very Good ☐	Excellent ☐	Outstanding ☐
ND.2 *	What annual building Operational Energy targets will your building/s achieve? (kWh/m²/y)	< 170 ☐	< 110 ☐	0 - 55 ☐
ND.3 *	What annual building Embodied Carbon targets will your building/s achieve? ($kgCO_2e/m^2$)	<800 ☐	<650 ☐	<500 ☐
ND.4 *	What is the Potable Water Use designed for? (Litres/person/day)	16 l/p/d ☐	13 l/p/d ☐	10 l/p/d ☐
	Please use the 'Sustainability Summary' pages to describe what measures have been incorporated to design out the risk of overheating, giving priority to architectural approaches.			☐
	Please attach relevant certification of the BREEAM standards that the development is targeting, and use 'Sustainability Summary' pages where you are adding any further information.			☐

Assuring Performance

OBJECTIVES & REQUIREMENTS

Post construction energy and quality monitoring is required to bridge the 'performance gap' (difference between predicted performance and as-built performance of a building) found in new developments and achieve net zero-carbon. Achieving this requires a true understanding of a buildings' operational energy.

Addressing the performance gap in new homes and buildings is critical, as this affects both the 'happiness' of residents as well as the performance quality of the building. A poor performing building leads to higher energy bills due to poor building fabric, and risks exasperating challenging health conditions.

Studies undertaken by Innovate UK and the Zero Carbon Hub show that the majority of built projects do not meet their intended performance targets when tested, fall short even of compliance with Part L and Park F of Building Regulations.

For all new developments, design teams are required to undertake a Post Occupancy Evaluation (PoE), assessing both performance targets as well as the quality of life of current occupants. All developments will be required to monitor and report on residents' wellbeing and the actual operational energy performance of the building. The evaluation should be undertaken within the first two years of a building's occupation.

A template PoE form can be found here and should be used to demonstrate compliance. Broadly; evaluation will be required at the following stages:

1. Planning; predicted performance assessment
2. As-built; performance assessment
3. In-use; quality of life / wellbeing assessment

Further information can be found on the GLA website and the Zero Carbon hub website.

QUALITY STANDARD

In line with RIBA best practice, a Post Occupancy Evaluation is expected for submission, and should cover the following key areas:

1. Build Quality: performance of the completed buildings
2. Functionality: how useful the building is in achieving its purpose
3. Impact: how well these developments add social, economic, cultural and environmental value for occupants

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SOCIAL & ECONOMIC SUSTAINABILITY

Social and economic sustainability refers to the ways in which places are planned, designed, maintained, built and operated to improve local health and wellbeing, create jobs and bolster economic growth, and strengthen the community.

Introduction

OBJECTIVES & REQUIREMENTS

This section looks at the direct impacts of places on people - specifically how new developments will affect the communities they connect to.

Designing for social sustainability requires a framework for both creating new communities that thrive and ensuring existing communities are integrated in to new developments. It is important to address social sustainability at the beginning of development, as managing the long-term costs and consequences of decline and failure in new settlements is an issue of public value and political accountability.

The checklist in this section is designed as a socio-economic sustainability toolkit. Rather than provide a set of quantitative targets, the toolkit asks that developers carry out the appropriate engagements with the relevant communities and stakeholders, based on a demonstrable understanding of local needs. The guidance's aim is to ensure that new developments are equipped to incorporate the necessary 'community ingredients' that enable communities to thrive and that boost individual wellbeing - not just during occupation, but throughout all stages.

Community Ingredients should therefore cut across the different stages of developments, including:
1. Planning & design
2. Construction & occupation
3. Long-term stewardship

The list of key documents listed in the adjacent table should be used as reference by developers and applicants in understanding local socio-economic needs, and in planning engagement sessions. The list is not exhaustive but is intended to provide a starting point from which to develop more focused engagement sessions with local groups.

KEY LOCAL POLICY & GUIDANCE

EFDC Local Plan Policy:

- **SP2** Place shaping
- **H1** Housing Mix and Accommodation Types
- **H4** Traveller Site Development
- **E1** Employment Sites
- **E4** The Visitor Economy
- **DM9** High Quality Design
- **DM10** Housing Design and Quality
- **D2** Essential Facilities and Services
- **D4** Community, Leisure and Cultural Facilities

EFDC Statement of Community Involvement
EFDC Infrastructure Delivery Plan
EFDC Green Infrastructure Strategy
EFDC Economic Development Strategy
EFDC Health and Wellbeing Strategy
EFDC Cultural Strategy
EFDC Playing Pitch Strategy
EFDC Open Space Strategy
EFDC Employment and Skills Plan
Epping Forest District Tourism Strategy

NHS Healthy New Towns
HGGT Healthy Town Framework
RIBA Social Value Toolkit
Essex Design Guide
Essex Rights of Way Improvement Plan
Essex + Herts Digital Innovation Zone
essexmap.co.uk
Live Well Accreditation
Play England - Design for Play

Health & Wellbeing

OBJECTIVES & REQUIREMENTS

The health and wellbeing of residents should be the priority within any new developments. Measures should be taken to ensure this: including good accessibility to sustainable transport options, provision of high-quality public and green spaces, the use of green infrastructure and biodiversity to promote good mental and physical health, and investment in long-term resilient buildings and infrastructure.

In order to promote the health and wellbeing of new and existing communities, the Epping Forest District Council asks all new developments to take the following steps:

• Encourage physical activity, active living, active travel, and sport activities for residents (including through the provision of green infrastructure)
• Promote mental health and wellbeing through clear connections to existing support services
• Promote wellbeing through keeping noise pollution of new developments (both during construction phases and during occupation) to a minimum
• Encourage older people to live independent lives through increased community support and reduced winter pressures
• Support children and young people by incorporating access to affordable activities such as outdoor gyms, sports and leisure facilities, community allotments, travelling farms, and urban farming - helping to grow local fruits and vegetables for an improved diet
• Incorporating flexible workspaces, such as co-working, as part of the social infrastructure in new developments, particularly in light of pandemics like Covid-19 which will change the way we work moving forward

VOICE & INFLUENCE
New developments should look to amplify the voice and influence of residents. This involves governance structures to represent existing residents and engage new ones in shaping local decision-making and stewardship.

RESILIENCE & ADAPTABILITY
New developments should be forward-planning; including housing, infrastructure, and services that can adapt over time; as well as the incorporation of meanwhile use of buildings and public spaces.

CASE STUDIES



Urban Roof Greening



Great Kneighton, Cambridge
- allotments embedded as part of new development



Outdoor / Park Gyms

Economic Growth & Job Creation

OBJECTIVES & REQUIREMENTS

New developments should look to promote long-term growth and development opportunities for local communities, as well as the facilities to develop new skills. This section of the guidance focuses on outcomes including local residents having comfortable homes that are affordable to operate; thriving local businesses; and long-term employments for skilled local labour.

The economic priorities and objectives for new developments should: businesses and jobs, places and people.

Business & Jobs: delivering on these priorities will lead to the following outcomes:
• Skills creation in existing communities and young people, including apprenticeships, to ensure economic impact of new developments continue in the longer term
• Use of local labour and supplies in new development projects
• A healthy business start-up rate and continued growth in the business base

Place: delivering on these priorities will lead to the following outcomes:
• An outstanding location and environment for businesses, that attract and retain more jobs in the District.
• A sufficient, high quality, viable employment land supply to meet future demand and provide a credible offer to prospective inward investors.
• New managed workspace and a mix of premises sizes and styles that cater for existing and future demand, including challenges resulting from Covid-19

People: what we want to achieve in EFDC are the following outcomes:
• New developments cater both to new and existing EFDC residents; the provided housing mixes should be such that they attract new families to settle in the District, but also provide the required homes for local needs
• EFDC, education and training institutions, individuals and local industries will have an informed view of future skills needs that provides a basis for education and training planning and provision.
• Businesses are able to access the workforce they need.

CASE STUDIES



St John's Estate, Chelmsford, (Metropolis Planning & Design), The project has delivered economic benefits to the local community, including the creation of 80 new jobs.



The Portland Inn (Baxendale Studio) A commission to design a building that will host a diverse cultural programme. Part of the brief was that the local community would be able to participate in its construction.

Community Strength & Social Infrastructure

OBJECTIVES & REQUIREMENTS

New developments should ensure that they integrate existing communities with new ones through shared social infrastructure. Collective activities and social architecture allow the fostering of local networks, creating a sense of belonging and community identity. Measures such as stakeholder engagement and post-development governance will provide residents with ownership of their built environment.

New developments will be expected to provide certain key infrastructures, or contributions towards their provision. The incorporation of these both formal and informal amenities will work towards enabling social inclusion between the members of a community.

Social facilities for children and teenagers; particularly access to early years childcare and leisure centres, are lacking in the District. Developments that provide these and locate them within existing communities will be encouraged.

Further information can be found in the Epping Forest District Council Infrastructure Delivery Plan (IDP), which highlights the local infrastructure requirements of the District, along with their priorities for the area (critical, essential or desirable). These include, but are not limited to:

- Health, Social Care and Emergency Services
- Community Halls
- Walking and Cycling Initiatives
- Education
- Sports Facilities
- Suitable Alternative Green Space (SANGS)

New developments should refer to the IDP, and planning applications should highlight what infrastructure will be provided, alongside contributions to ensure local community needs are met.

CASE STUDIES



Bromley by Bow Centre
A pioneering charity that combines an extensive neighbourhood hub with a medical practice and a community research project.



The Big Lunch (Eden Project)
An annual national event that provides a hook for people to organise lunch with their neighbours, at home or in the street, supported by advice and ideas available on the web.



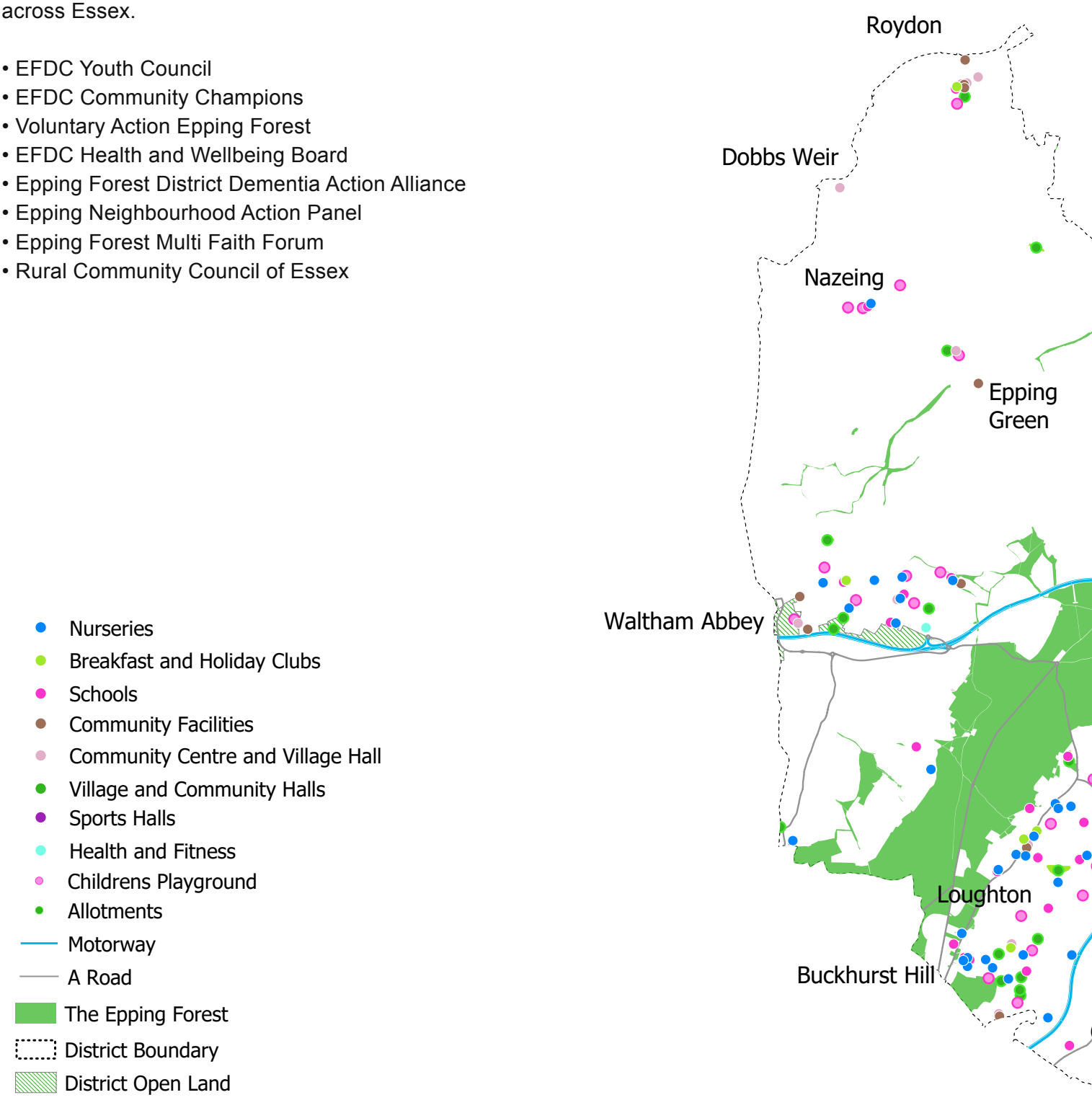
Castlebank Horticultural Training Centre, Lanark (EKJN)
A collection of neglected outbuildings behind Castlebank House have become a thriving horticultural training centre, a valuable community resource.

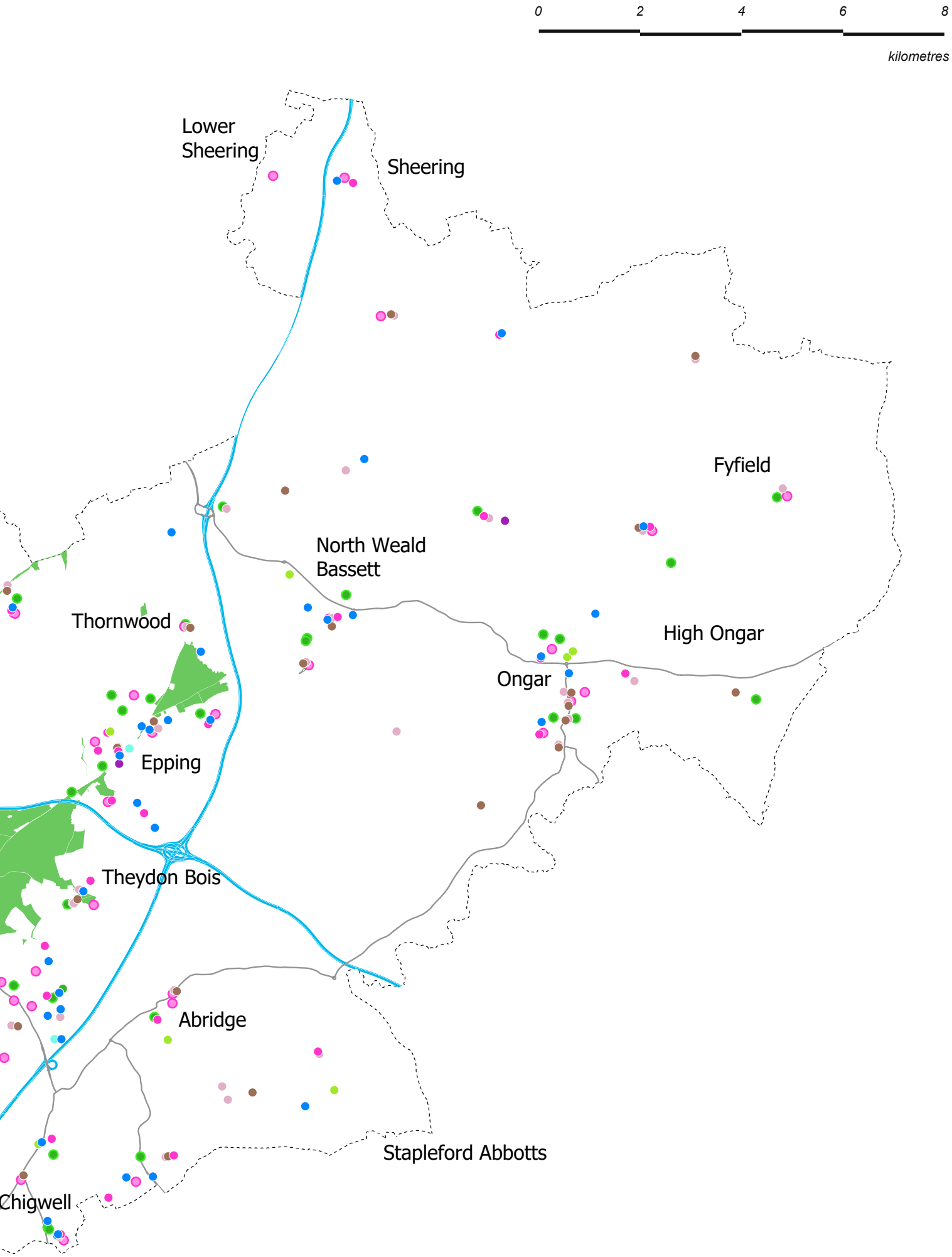
EFDC Social Infrastructure Map

The map and list on this page highlight existing social infrastructures and community groups within the District. These are not exhaustive but are intended to provide a starting point from which applicants are to develop more focused engagement sessions with local groups.

Please also refer to essexmap.co.uk for an interactive and live map of social infrastructures across Essex.

- EFDC Youth Council
- EFDC Community Champions
- Voluntary Action Epping Forest
- EFDC Health and Wellbeing Board
- Epping Forest District Dementia Action Alliance
- Epping Neighbourhood Action Panel
- Epping Forest Multi Faith Forum
- Rural Community Council of Essex




0
2
4
6
8
kilometres
Lower Sheering
Sheering
Fyfield
North Weald Bassett
Thornwood
High Ongar
Ongar
Epping
Theydon Bois
Abridge
Stapleford Abbotts
Chigwell

Additional Case Studies



Tibby's Triangle (Ash Sakula Architects)
There is a constant flow of people of all ages walking through this development in Southwold, going to the sea, to the shops, or just using it as a shortcut. Cars are accommodated by parking spaces adjacent to the homes and not at the expense of pedestrian circulation.



The Hamptons (Community Support Officer)
A local group helped turn two lakes into a fishery. They are now used by a wide spectrum of different social groups on the development.
This is supported by a strong, informative community website.



The Portland Inn (Baxendale Studio)
Baxendale was commissioned to build a temporary external structure that would help deliver a diverse programme with, given its limited budget, a key set of requirements as part of the brief. These were that the local community should be able to participate in its construction.



The Big Lunch (Eden Project)
The Big Lunch is an annual national event: an estimated 8.5m people took part in 2012. It provides a hook for people to organise lunch with their neighbours, at home or in the street, supported by advice and ideas available on the web.



Argal Workshops (Gluckman Smith)
A Cornish former farmstead, previously derelict, was transformed into rural workshops for a local furniture and product designer, to Passivhaus standards, making a new working community for the area.



The Hackney Carnival
Social Life was asked by Hackney Council to look at the social and economic value of the Hackney Carnival - particularly looking at how this brings money into the borough and how it helps make people feel at home in Hackney, and with their wider community.



Higham Hill Theatre (vPPR Architects)
The project is a small community amphitheatre in Higham Hill Park in Walthamstow, part of Waltham Forest's Making Places initiative to deliver public realm improvement works to every ward in the borough.



Social infrastructure: enabling social inclusion
Social Life and Hawkins Brown have been commissioned by the GLA to carry out a research inquiry into the role of social infrastructure in enabling social integration and supporting inclusive growth for London.



Castlebank Horticultural Training Centre, Lanark (EKJN)
What began as a collection of neglected and derelict outbuildings behind Castlebank House has become a thriving horticultural training centre, a very popular, much used and valuable community resource.

Socio-Economic Checklist

SUBMISSION CHECKLIST	
S.1 *	Explain how the proposals have been informed by the key stakeholders. (Include in response: the stakeholders you have engaged with, the findings from these sessions, and how you have implemented stakeholder recommendations) *(max. 250 words)*
S.2 *	Explain how the socio-economic needs identified in this section have been implemented in your proposal (include the ease of accessibility for existing communities to use new facilities and networks). *(max. 250 words)*
S.3 *	What 'meanwhile' uses are planning for existing communities during construction stage of major developments? How are they implemented? *(max. 250 words)*
S.4 *	Explain how the proposal responds to, and has been impacted by, the list of key documents highlighted in this section (include list of documents used and key findings). *(max. 250 words)*
S.5 *	Demonstrate how the EFDC Economic Growth Strategy has been incorporated in this scheme through; design stages, construction stage, and post-completion (identify what jobs have been created / will be created through this development). *(max. 250 words)*
	Please include your responses to the questions above in the "Sustainability Statement' pages which form part of your submission

***** Outline planning applications need only respond to questions marked with an * asterisk. For full planning applications / reserved matters applications, please respond to <u>all</u> questions.*

SUBMISSION

This section includes the list of submission requirements, and the sustainability statement.

Submission

1. Submit the following as evidence of the completed Quality checklists. Please note that this list is in addition to, and does not supersede, the general submission requirements listed in the EFDC Planning Application Validation Requirements Checklist.

Design Principles		
	Daylight and Sunlight Assessment	☐
Environmental Sustainability		
Energy Efficiency & Carbon		
	Whole Life Carbon Assessment	☐
	Overheating Design Assessment	☐
Renewable Energy		
	Energy Assessment	☐
Sustainable Movement		
	Sustainable Travel Plan	☐
	Transport Assessment	☐
Water Management		
	Water Management / SUDS Strategy	☐
Green Infrastructure		
	Ecological Report (to include Biodiversity Impact Assessment)	☐
	Lighting Assessment	☐
	Landscape Character and Tree Surveys	☐
Circular Economy		
	Circular Economy Report (linked to Construction Management Statement)	☐
	Construction Management Statement	☐
Waste Management		
	Operational Waste Strategy	☐
Air Quality		
	Air Quality Impact Assessment	☐
Assuring Performance		
	Post-Occupancy Evaluation	☐
Socio-Economic Sustainability		
	Health Impact Assessment	☐
	Health Framework Action Plan	☐
	Community Engagement Strategy	☐
	Stewardship / Maintenance Strategy	☐

2. Include any additional strategies that have not been covered by the Quality checklists in the space below. All submitted assessments / reports will be conditioned to the LPA at post completion / pre-occupation stage to ensure that all new developments are being completed to the specified design standards in order to close the performance gap and create truly sustainable communities.

APPENDIX

Appendix 1: Climate Emergency Declaration

EPPING FOREST DISTRICT COUNCIL

Declaration: Climate Emergency
Date of Declaration: 19th September 2019

Cllrs: S.Nevile + J.Phillip

Adopted Motion / Commitment:
1. Declare a 'Climate Emergency';

2. Pledge to do everything within the Council's power to make Epping Forest District Council area Carbon Neutral by 2030;

3. Call on Westminster to provide the powers and resources to make the 2030 target possible;

4. Work with other governments (both within the UK and internationally) to determine and implement best practice methods to limit Global Warming to less than 1.5°C;

5. Continue to work with partners across the district and region to deliver this new goal through all relevant strategies and plans;

6. In the special circumstances of this district, resolves to protect the Special Area of Conservation through the Local Plan and every other means;

7. Implement an Air Quality Strategy and bring forward Sustainability Guidance on planning; and

8. Engage with young people when considering the issue of climate change and appoint a 'Youth Ambassador' from the Epping Forest Youth Council."

Appendix 2: Building Performance Standards



Net Zero Carbon Buildings - UKGBC



Passivhaus



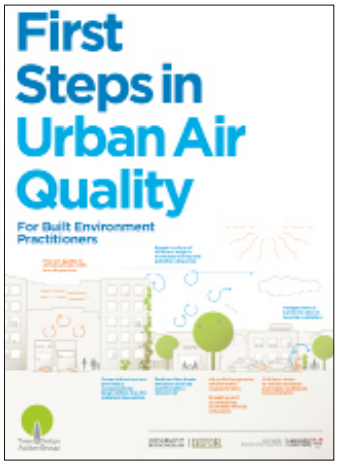
BREEAM Communities



BREEAM HQM



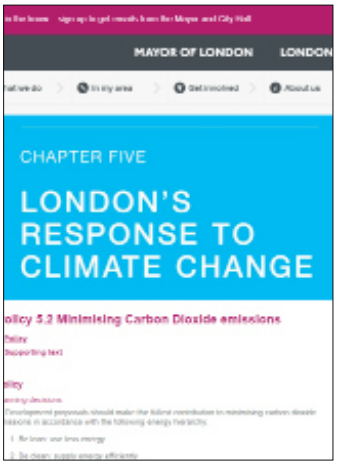
RIBA 2030 Climate Challenge



First Steps in Urban Air Quality



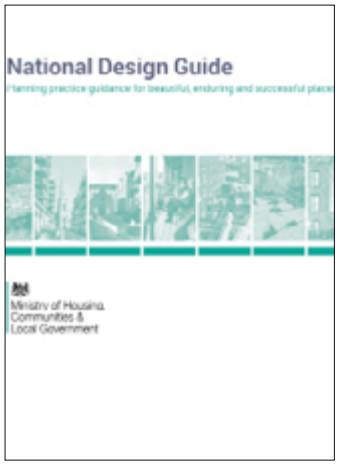
RICS Whole Life Carbon Assessment



London Plan: Energy Hierarchy



Future Homes Standard 2020



National Design Guide



Transport for New Homes Checklist

TABLE 12: THE PROJECT ID MATRIX

Date of assessment	Date of assessment completion
Verified by	Verifier name and organisation
Project type	New build or refurbishment of existing structure
Assessment objective	Brief assessment purpose statement
Project location	Full address
Date of project completion	Anticipated date of practical completion
Property type	Residential, public/civic, retail, office, infrastructure, etc. State planning use class
Building description	No. of storeys, structural frame, façade type, basement?, brief description of associated external areas and any ancillary structures
Size	NIA, GIA, volume, etc.
Project design life	In years
Assessment scope	Building parts and life stages/modules included
Assessment stage	Design stage at which the assessment has been conducted at
Data sources	List all data sources used in the assessment including building information and carbon data sources
Building elements coverage	

#	Building parts/element groups	Building elements	Coverage (%)
0	Facilitating works	0.1 Temporary/Enabling works/ Preliminaries	
		0.2 Specialist groundworks	
1	Substructure	1.1 Substructure	
2	Substructure	2.1 Frame 2.2 Upper floors incl. balconies 2.3 Roof 2.4 Stairs and ramps	
	Superstructure	2.5 External Walls 2.6 Windows and External Doors	
	Superstructure	2.7 Internal Walls and Partitions 2.8 Internal Doors	
3	Finishes	3.1 Wall finishes 3.2 Floor finishes 3.3 Ceiling finishes	
4	Fittings, furnishings and equipment (FF&E)	Building-related Non-building-related	
5	Building services / MEP	5.1–5.14 Building-related services	
		Non-building-related	
6	Prefabricated Buildings and Building Units	6.1 Prefabricated Buildings and Building Units	
7	Work to Existing Building	7.1 Minor Demolition and Alteration Works	
8	External works	8.1 Site preparation works 8.2 Roads, Paths, Pavings and Surfacings 8.3 Soft landscaping, Planting and Irrigation Systems 8.4 Fencing, Railings and Walls 8.5 External fixtures 8.6 External drainage 8.7 External Services 8.8 Minor Building Works and Ancillary Buildings	

Assumptions and scenarios	List all assumptions and scenarios used in the assessment including brief justifications

These tables have been taken from the *RICS Whole Life Carbon Assessment for the Built Environment,* (November 2017). Please refer to the document for detailed guidance on how to fill out the assessments.

TABLE 13: RESULTS REPORTING TEMPLATE

| * Decarbonisation applicable
Report decarbonised values alongside non decarbonised ones. | Global Warming Potential GWP [TCO_2e] | | |

Appendix 4: Glossary

Air Quality Management Area
Air Quality Management Areas (AQMA) are designations used by DEFRA (Department for Environment, Food and Rural Affairs) to manage areas with air pollution, that are unlikely to meet the Government's national air quality objectives.

Air Quality Action Plan
A document produced by the Council with Natural England setting out the steps that will be taken to reduce pollution within an Air Quality Management Area (AQMA). This could include steps to reduce car usage and promote public transport.

Airtightness
Building airtightness is defined as the resistance to air leakage through unintentional points or areas in the building envelope. Heat can be lost through these gaps in the walls, floors and roofs of buildings creating draughts and so it is extremely important to make sure these are eliminated. This down to good detailing and good site workmanship.

Biodiversity
The variety of plant and animal life in the world or in a particular habitat, a high level of which is usually considered to be important and desirable.

Blue Infrastructure
Infrastructure provision relating to water. This includes natural features such as rivers, streams and ponds, semi-natural features such as sustainable drainage systems, bio-swales and canals, and other engineering features such as dams, weirs and culverts. Blue and green infrastructure are often considered together, placing emphasis on the importance of biodiversity and flood risk mitigation.

BREEAM
BREEAM is one of the leading sustainability assessment methods for masterplanning projects, infrastructure and buildings. It is used for assessments across the built environment lifecycle, from new construction to in-use and refurbishment. BREEAM does this through third party certification of the assessment of a building's environmental, social and economic sustainability performance, using standards developed by BRE (Building Research Establishment).

Building in Layers
The concept of building in 'layers' was first proposed by architect Frank Duffy in the 1970s, and developed by Stuart Brand in the 1990s. It means that each element may easily be separated and removed. This facilitates reuse, remanufacture and recycling. For example, facades or heating systems may be designed and fitted as independent entities, integrated with other building systems but not entwined with the fabric of the building.

Carbon Footprint
The amount of carbon dioxide released into the atmosphere as a result of the particular individual, organisation or community. The carbon footprint of a development is counted over its lifetime i.e. the materials used and their sources, construction, lifetime use and demolition.

Circular Economy
The circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible. In this way, the life cycle of products is extended.

Cold Bridge
Occurs when there is a thermal break in the insulating materials between the inside and outside of a building e.g. a gap in the wall or roof insulation, allowing heat to escape.

Development
'Development' includes building operations (e.g. structural alterations, construction, rebuilding, most demolition); material changes of use of land and buildings; engineering operations (e.g. groundworks); mining operations; other operations normally carried out by a person operating a business as a builder; subdivision of a building (or any part of it) used as a dwelling house for the use as two or more separate dwelling houses. As defined by section 55 of the Town and Country Planning Act 1990.

Embodied Energy
The sum of the energy requirements associated, directly or indirectly, with the delivery of a good or service. This includes: the energy required to initially produce the building (the processing and the manufacture of the materials of the building as well as their transportation and assembly on site), the energy needed to refurbish and maintain the building over its lifetime, and the energy necessary to demolish and dispose of the building at the end of its life.

Environmental Impact Assessment
A procedure to be followed for certain types of projects to ensure that decisions are made in full knowledge of any likely significant effects on the environment.

Fossil Fuel
Fossil fuel is a general term for buried combustible geologic deposits of organic materials, formed from decayed plants and animals that have been converted to crude oil, coal, natural gas, or heavy oils by exposure to heat and pressure in the earth's crust over hundreds of millions of years. The burning of fossil fuels by humans is the largest source of emissions of carbon dioxide, which is one of the greenhouse gases that allows radiative forcing and contributes to global warming.

Green Belt
Land protected by a policy and land use designation to protect areas of largely undeveloped or agricultural land surrounding or neighbouring urban areas. Review of Green Belt boundaries is undertaken as part of the production of Local Plans where Green Belt exists.

Green Infrastructure
Green infrastructure is a network of high quality and multifunctional green spaces , both urban and rural, including environmental features such as parks, public open spaces, playing fields, sports pitches, woodlands, and allotments, which are capable of delivering a wide range of environmental and quality of life benefits for local communities. The provision of green infrastructure can provide social, economic and environmental benefits close to where people live and work.

Infrastructure Delivery Plan
This will contain the key infrastructure required to support the homes and commercial development in the Local Plan. This includes physical infrastructure such as transport energy and water, social and community infrastructure such as health, education and emergency services and green infrastructure such as open spaces and allotments. The Infrastructure Delivery Plan (IDP) sits alongside the Local Plan and will contain a programme identifying when items of infrastructure are expected to be in place, funding and costs. It will be regularly updated as more information becomes available.

Local Plan
The plan for the future development of the local area, drawn up by the local planning authority in consultation with the community and stakeholders. Once adopted the Local Plan will legally form part of the Development Plan for the District, superseding the Replacement Local Plan (2006).

Appendix 4: Glossary (cont.)

Meanwhile Use
The term 'meanwhile use' refers to the short-term use of temporarily empty buildings such as shops until they can be brought back into commercial use. The landlord will continue to look for a new commercial occupant for the space during the meanwhile use. Meanwhile uses are generally for the benefit of the local community, for example; meeting spaces, informal training and learning spaces, temporary rehearsal spaces, pop-up shops and exhibitions, and so on.

Modal Shift
Modal shift means a switching of energy consumption methods, such as when people switch from fossil fuel reliant forms of transport (such as cars) to sustainable transportation options such as busses, trains and (electric) bicycles.

National Planning Policy Framework
National Planning Policy Framework (NPPF) sets out the Government's planning policies for England, and provides a framework within which local people and their accountable councils can produce their own distinctive local and neighbourhood plans, which reflects the needs and priorities of their communities.

Operational Energy
Operational energy is the energy required during the entire service life of a structure such as lighting, heating, cooling, and ventilating systems; and operating building appliances.

Passivhaus
A Passivhaus is a building in which thermal comfort can be achieved solely by post-heating or post-cooling the fresh air flow required for a good indoor air quality, without the need for additional recirculation of air.

Performance Gap
The difference between predicted performance and the as-built performance of a building.

Post Occupancy Evaluation
Post-occupancy evaluation (POE) of a building demonstrates how well it is performing in use and how far it is achieving against its intended purpose. POE also highlights any gaps in communication and understanding amongst building managers and occupants that my hinder a building's operational performance.

Quality Review Panel
An independent panel of planning, architecture, urban design and construction experts set up by the Council to provide impartial expert advice to both applicants and local authorities on design issues in relation to important new development schemes and proposals for important public spaces including significant minor applications, major planning applications, pre-application development proposals, strategic masterplans and concept frameworks. The Quality Review Panel's feedback is a material consideration for local authorities and the planning inspectorate when determining planning applications. The purpose of the Quality Review Panel is to ensure that new development is of a high quality and contributes to place making.

Renewable Energy
Renewable energy is energy that is collected from renewable resources, which are naturally replenished on a human timescale, such as sunlight, wind, rain, tides, waves, and geothermal heat.

Special Area of Conservation
Area given special protection under the European Union's Habitats Directive which is transposed into UK law by the Habitats and Conservation of Species Regulations 2010.

Strategic Masterplan
A masterplan is the process by which organisations undertake analysis and prepare strategies, and the proposals that are needed to plan for major change in a defined physical area. It acts as a context from which development projects come forward for parts of the area.

Suitable Alternative Natural Greenspace
Suitable Alternative Natural Greenspace (SANG) is the name given to greenspace that is of a quality and type suitable to be used as mitigation to offset the impact of residential development and visitor pressure on Special Protection Areas (SPAs). The purpose of SANGs is to provide alternative greenspace to attract visitors away from SPAs.

Sustainable Drainage Systems
These are drainage systems designed to manage surface water and groundwater to sustainably reduce the potential impact of new and existing developments on flood risk. They can form part of a wider integrated water management approach.

Sustainable Transport
Efficient, safe and accessible means of transport with overall low impact on the environment, including walking and cycling, low and ultra-low emission vehicles, car sharing and public transport.

Thermal Bridging
It is important to make sure that the gap between the window frame and the wall is well sealed otherwise heat will be lost around the window even if the window itself is very energy efficient.

Transport Assessment
A comprehensive and systematic process that sets out transport issues relating to a proposed development. It identifies what measures will be required to improve accessibility and safety for all modes of travel, particularly for alternatives to the car such as walking, cycling and public transport and what measures will need to be taken to deal with the anticipated transport impacts of the development.

Transport Statement
A simplified version of a transport assessment where it is agreed the transport issues arising out of development proposals are limited and a full transport assessment is not required.

Validation Requirements
The information that is required to be submitted with a planning application in order to be considered 'valid'. This includes particular plans or supporting documents that must be included with a planning application. It includes national requirements and local requirements which are specific to Epping Forest District. The up to date requirements are set out in the 'Epping Forest District Council Planning Application Validation Requirements Checklist' document.

Whole Life Carbon
Considering operational as well as embodied carbon emissions combined over a project's expected life cycle.

Zero Carbon
Causing or resulting in no net loss of carbon dioxide into the atmosphere. A zero carbon building is one with zero net energy consumption or zero net carbon emissions on an annual basis.