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EFDC SUSTAINABILITY GUIDANCE / MINOR DEVELOPMENTS

(1-9 units)

DRAFT FOR CONSULTATION - REVISION 02
SEPTEMBER 2020

Issue and Revision Record

REVISION	DATE
01	August 4th, 2020
02	August 28th, 2020

Contents

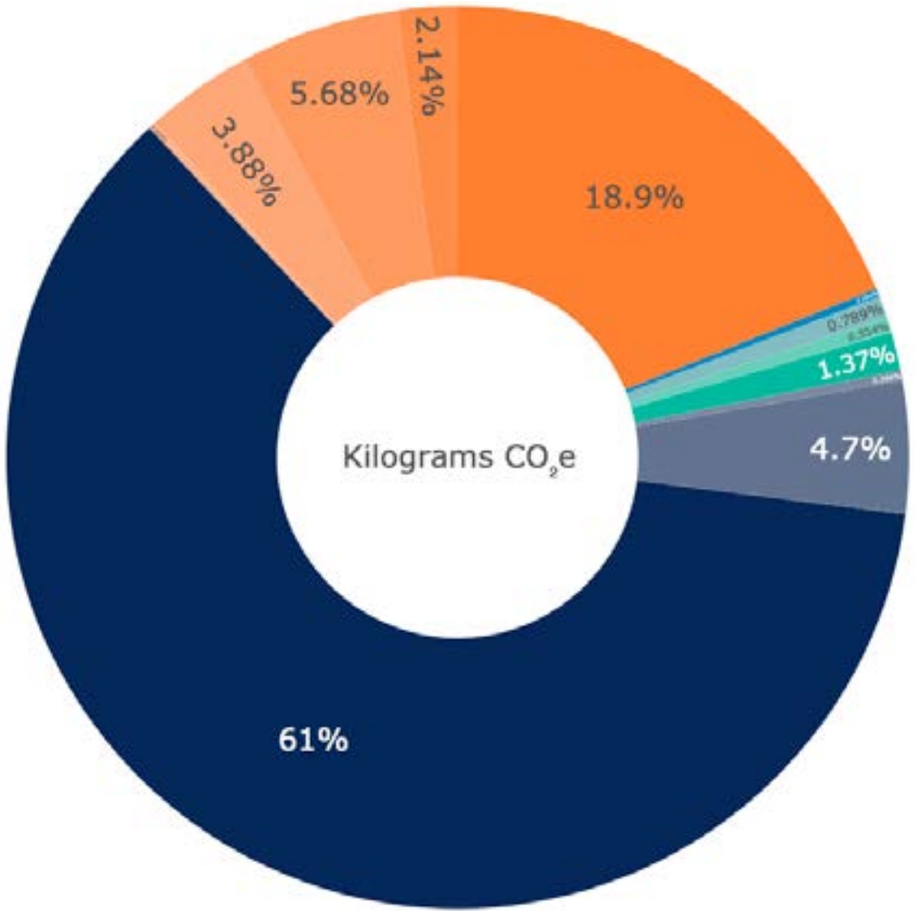
1

INTRODUCTION

This document supports the highest environmental commitment across the District - to become Carbon-Neutral by 2030

Overview

Epping Forest District has a 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

In May 2019, the UK Government declared a Climate Emergency. Epping Forest District Council followed suit and in September 2019 also declared a Climate Emergency.

The global climate is changing, with greenhouse gas emissions from human activity the dominant cause. The global increase in temperature of 0.85°C since 1880 is mirrored in the UK climate, with higher average temperatures and evidence of 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 believe 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 District Council seeks to set the agenda for sustainable living through ensuring growth that will be net zero carbon by 2030, and building strong and integrated communities across new and existing places, with social equity.

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.

Whilst green belt protection has previously limited development in the District, 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

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.

How to use this guide?

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.

EFDC will set the agenda for Sustainable living, making it is easy for residents to adopt sustainable lifestyles. This means the choices offered across all aspects of living, work, and play are sustainable.

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 EFDC Local Plan will be applied to new major residential and non-residential developments across the district.

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?

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 GUIDE?

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

Within each section, the topics consists of the following categories:
1. Objectives & Requirements
2. Key Local Policy & Guidance
3. Case studies
4. Checklist (to be completed and submitted)

5 / SUBMISSION REQUIREMENTS

1. Collated Sustainability Checklist
2. Sustainability Statement

From each section, a collated checklist can be produced. This should feed in to a Sustainability Statement, with relevant certifications provided.

6 / APPLICATION OF GUIDANCE

The guidance is applicable to all minor developments within Epping Forest District. This will include:
- All minor residential and non-residential developments and associated infrastructure proposals (1-9 units, or floorspace of up to 999 sq.m.)
- Change of Use resulting in minor development

7 / THE CHECKLIST

The Collated Checklist visually indicates whether proposals meet the District's sustainability principles and goals of becoming net zero carbon by 2030.

Minimum Requirements	Net Zero-Carbon by 2050	Net Zero-Carbon by 2030
These are policy-compliant / Building Regulations compliant, but do not meet Climate Declaration targets	*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 should be read in conjunction with the policies found in the Epping Forest DC Local Plan. This document will be endorsed to have material planning weight when determining applications.

This EFDC sustainability guidance will need to be considered as part of the wider policy context but is expected to compliment the policies by providing a practical tool for enhancing the sustainability of development in the District. It will help inform a collaborative master planning and application process.

9 / PARTNERSHIP WORKING

Epping Forest District Council are 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 / REVIEWING & MONITORING

Requirements in this guidance are based on current (2020) regulations and best practice, and may be superseded by future standards. The guidance will look to be updated every 3 years.

11 / INCENTIVES FOR SUSTAINABILITY

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.

In EFDC, 12,000 new homes are expected over the next plan period. If the required standard is not met when homes are first constructed, they will require retrofit before 2050 just to keep up with changing legislation; which is likely to be five times more expensive than building them to be zero carbon in the first place.

Current statistics indicate that net zero homes can be achieved for an additional capital cost of 5-7%, with the opportunity to reduce this figure with economies of scale. This added capital cost is also likely to decrease over time due to the decarbonisation of our electricity grid, and the reducing costs of technology. Furthermore, long-term operation costs of new homes are vastly reduced due to the lower energy demand from homes, eliminating challenges such as fuel poverty. (Currie & Brown, 'Cost of Reduction in New Buildings')

Homes meeting higher sustainability standards have been shown to be sold at a premium as consumers choose to purchase their homes from more sustainable developers. The co-benefits to human health of achieving net zero carbon are extensive and include better air quality, less noise, more active travel and a shift to healthier diets. (CCC: Net Zero, 2019)

12 / PLANNING & SUCCESS

Using the Guidance and Checklist to demonstrate sustainability ambitions will lead to a smoother planning process and faster assessment time.

Exemplar schemes will be hosted on the EFDC website and shared as case studies in a bid to promote the most ambitious projects.

The District will also actively work with applicants to put their schemes forward for Local and National awards and partnership opportunities.

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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 a structured design process and are iterative, with observations made to be referred back to when navigating the varying scales of design.

The incorporation of these principles will significantly impact on the development of the remainder of the Sustainability sections.

1 / LANDSCAPE LED DESIGN

Objective:
The District is characterised by different types of landscapes. Each landscape form has defining green infrastructure such as hedgerows, woodland and grasslands. Each green infrastructure network and landscape character designations are to be understood as part of the wider context, scale, age, and quality; these include meadowlands and farmlands, hills and lowlands, scarps and valleys. Ecological value and amenity and recreation value from trees and hedgerows, ancient woodlands should be reviewed.

Once observed and understood, the above observations are to be clearly mapped, through context plans, site plans showing existing landscape features, site photographs and surveys.

2 / SUSTAINABLE MOVEMENT

Objective:
Identifying sustainable movement and active transport infrastructure is key to the success of sustainable growth in EFDC 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

Objective:
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.

4 / ENERGY HIERARCHY

Objective:
The Energy Hierarchy has been used to highlight the sustainability process new developments should comply with:

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 5years 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

Objective:
Building strong communities is aided by giving people and families 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 a range of house types, adaptable facilities and meanwhile use spaces, through to the micro-scale; 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

Objective:
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

Objective:
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.

8 / EMBODIED & OPERATIONAL ENERGY

Objective:
Embodied energy is the total energy required for the extraction, processing, manufacture and delivery of building materials to the building site.

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.

Operational Energy is concerned with the amount of carbon emissions associated with the building’s annual operation. 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

Objective:
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, biomass, 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

Objective:
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 is affected by heat loss through the building fabric, and poor thermal bridging – any gaps or thinning of the insulation. Therefore, the design approach must be to design them out.

Energy Efficiency & Carbon

OBJECTIVES & REQUIREMENTS

The transition to net zero carbon by 2030 must begin with providing genuinely affordable homes. All new buildings are therefore expected 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 at pre-application, planning application, 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.

SOCIO-ECONOMIC CO-BENEFITS +

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
Built with fabric-first approach for energy efficient homes, alleviating fuel-poverty.

Goldsmith Street, Norwich
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	Space Heating Demand (KWh/m2/y)	54.26	25	15
En.4	Airtightness (air changes/ hr @ n50)	5	3	≤ 0.6
En.5	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.			

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 borough.

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;

• 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.

SOCIO-ECONOMIC CO-BENEFITS +

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 will 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 (W/m2)			10 (Equiv. to 6 kWh/m2.yr renewable electricity from the grid)
Rn.6	Domestic hot water peak (W/m2)			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.			

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 the Epping Forest SAC, 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.

Development proposals that generate significant amounts of movement must be supported by a Transport Statement or Transport Assessment and will normally be required to provide a Travel Plan.

SOCIO-ECONOMIC CO-BENEFITS +

KEY LOCAL POLICY & GUIDANCE

EFDC Local Plan Policy:

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

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.

	SUBMISSION CHECKLIST	Minimum Requirement	Net Zero-Carbon by 2050	Net Zero-Carbon by 2030
Tr.1	Are bus stops and hubs accessible and attractive for new and existing residents?	Hubs and bus stops provided	STC Hubs within 800m, bus stops within 400m of all new homes	STC hubs co-located with community facilities, sheltered bus stops within 800m/ 400m of all homes,
Tr.2	Have inclusive design principles / accessibility for all regarding sustainable movement been achieved?	Meets Equalities Act	Inclusive Design Statement provided	Exemplary inclusive design provided
Tr.3	Has an assessment been provided against a recognised tool? E.g. Transport for New Homes Checklist/ Healthy Streets Check for Designers	No	Yes - assessment undertaken	Yes - assessment undertaken and exemplary score achieved
	Please attach relevant certification of the above standards you have chosen, and use 'Sustainability Summary' pages where you are adding any further information.			

Water Efficiency

OBJECTIVES & REQUIREMENTS

The Environment Agency has identified EFDC as being in an area of 'serious water stress'. 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 ambitious targets for water efficiency standards.

The incorporation of sustainable drainage systems (SuDS), that mimic natural drainage and encourage passive infiltration and attenuation, will be encouraged. New developments should also look to 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.

SOCIO-ECONOMIC CO-BENEFITS +

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

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	Potable Water: What is the expected internal water use (litres/person/day)?	110	95	75
W.2	What water collection or recycling measures will be used?	100% provision of water butts	Rainwater harvesting systems	Grey water recycling & harvesting
W.3	How much of the hard surfaces within the development and conveyance systems will be permeable (i.e streams, swales)	50%	75%	100%
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	Have other SuDS measures have been proposed? (i.e. permeable surfaces, rain gardens, green roofs, ponds/wetlands, soakaways)	No		Yes
	Please attach relevant certification of the above standards you have chosen, and use 'Sustainability Summary' pages where you are adding any further information.			

Landscape, Biodiversity & Clean Air

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 Special Area of Conversation (SAC), already under pressure due to traffic, recreational use and visitor numbers, if a suitable range of mitigation measures are not identified and implemented.

The delivery of new multi-functional green infrastructure will reduce the burden on the Forest, and the Council will pro-actively encourage developments that do so.

Proposals must be landscape-led from the start and across all design stages, as set out in the EFDC Green Infrastructure Strategy. They should respond to the District's distinctive setting and support a sustainable and diverse environment.

The latest 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.

Air pollution arising as a result of new developments also risks harm to the Epping Forest SAC. The Green Infrastructure Strategy details how Suitable Alternative Natural Greenspace (SANG) should be provided as part of new masterplan developments to relieve pressure on the SAC, as well as other important sites of ecological and natural heritage importance. Where applicable for a development, a Landscape Framework should be submitted detailing the provision of SANG.

New developments should take in to consideration the District's requirements on Air Quality Management Areas, Local Air Quality Action Plan, and development Air Quality Assessments.

SOCIO-ECONOMIC CO-BENEFITS +

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

Wider Area
- 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		Minimum Requirement	Net Zero-Carbon by 2050	Net Zero-Carbon by 2030
Gr.1	Has a high quality landscape-led approach been demonstrated?	No	Yes - some landscape analysis undertaken	Yes - topography, vistas, landscape character & features driving design
Gr.2	What level of Biodiversity Net Gain does your development achieve?	0-10% BNG	11-15% BNG	15%+ BNG
Gr.3	Have Stewardship and Maintenance Strategies been provided including for green infrastructure and biodiversity net gain?	No strategy	Yes - Outline strategy provided	Yes - 30 year strategy with input from community
Gr.4	Have play, community amenity and food production opportunities been proposed? All new homes should be within 800m of allotments, and Fields in Trust distances should be followed for play spaces.	No	Yes - locations mapped with walking isochromes	Yes - locations mapped, character of spaces defined, strategies for play / food / active frontages
Gr.5	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	Yes - some assessment	Yes - UKGBC Playbook followed
Gr.6	Have measures been taken to reduce the need for car travel, and provide alternative zero and low-emission travel options?	No		Yes
Gr.7	Where the development has the potential to impact on air quality, has an assessment been undertaken to measure levels of impact on the Epping Forest SAC?	No		Yes
	Please attach relevant certification of the above standards you have chosen, and use 'Sustainability Summary' pages where you are adding any further information.			

Circular Economy & Waste

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: his includes construction, demolition & excavation waste, operation & municipal waste

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

SOCIO-ECONOMIC CO-BENEFITS +

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
- **DM7** Heritage Assets
- **DM8** Heritage at Risk
- **DM11** Waste recycling facilities on new development
- **DM18** On site management of waste water and water supply
- **HA4** Conservation Areas
- **HA7** Listed Buildings

CASE STUDIES

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

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

Clarion Housing, Merton Regeneration
Zero-carbon development of 208 homes, achieving Code for Sustainable Homes Level 5.

SUBMISSION CHECKLIST		Minimum Requirement	Net Zero-Carbon by 2050	Net Zero-Waste by 2030
W.1	How much of the materials used on site are sourced from ethical and responsible supply chains?	80%	95%	100%
W.2	How much of the materials used are non-toxic?			100%
W.3	How much of the materials used can be easily extracted, recycled, and manufactured?	80%	90%	95%
W.4	The new buildings are circular-by-design to what amount?	20%	40%	65%
W.5	How much construction, demolition and excavation (CD&E) waste will be recycled? *(This is to be incorporated in your Construction Management Plan)*			≥ 95%
W.6	How much municipal waste (operational waste) will be recycled or composted vs sent to landfill or energy recovery?			65% : 35%
W.7	How much of the materials used are 'reusable'			80%
W.8	How much of the materials used are 'reused'			50%
W.9	How much biodegradable and recyclable waste will be diverted to landfill?			0
	Please attach the Design Stage Circular Economy Statement			
	Please attach the Operational Waste 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.			

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.

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.1	What annual building Operational Energy targets will your building/s achieve? (kWh/m^2/y)	< 170 kWh/m^2/y	< 110 kWh/m2/y	0 - 55 kWh/m2/y
ND.2	What annual building Embodied Carbon targets will your building/s achieve? (kgCO_2e/m^2)	<800 kgCO_2e/m^2	<650 kgCO_2e/m^2	<500 kgCO_2e/m^2
ND.3	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.			

3

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 and people -specifically, with 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 for Epping Forest District Council. Rather than provide a set of quantitative targets, the toolkit asks that developers carry out the appropriate engagements with communities and stakeholders. 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

In implementing the following socio-economic sustainability principles, new developments ready themselves for strong communities that are well-integrated to the existing socio-economic fabric.

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 Infrastructure Delivery Plan
EFDC Green Infrastructure Strategy
EFDC Economic Development Strategy
EFDC Health and Wellbeing Strategy
EFDC Cultural Strategy
EFDC Neighbourhood Plans
EFDC Playing Pitch Strategy
EFDC Open Space Strategy
EFDC Employment and Skills Plan
Epping Forest District Tourism Strategy

NHS Healthy New Towns
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; embedding the design 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 all of the new and existing communities of new developments, Epping Forest District Council requires all new developments to take the following steps:

- Encourage physical activity, active living, active travel, and sport activities for residents
- Promote mental health and wellbeing through clear connections to existing support services
- 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, community allotments, travelling farms, and urban farming - helping to grow local fruits and vegetables for an improved diet

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

Community Strength & Social Infrastructure

OBJECTIVES & REQUIREMENTS

New developments should ensure that they integrate existing communities with new ones through shared social infrastructures. 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.

New developments should also look to promote long-term growth and development opportunities for local communities, as well as the facilities to develop new skills.

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 have become a thriving horticultural training centre, a valuable community resource.

The Portland Inn (Baxendale Studio)
A commission to built to deliver a diverse programme with a key set of requirements as part of the brief, incldluing that the local community should be able to participate in its construction.

Additional Case Studies

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.

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.

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.

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	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)*
	Please include your responses to the questions above in the "Sustainability Statement' pages which form part of your submission

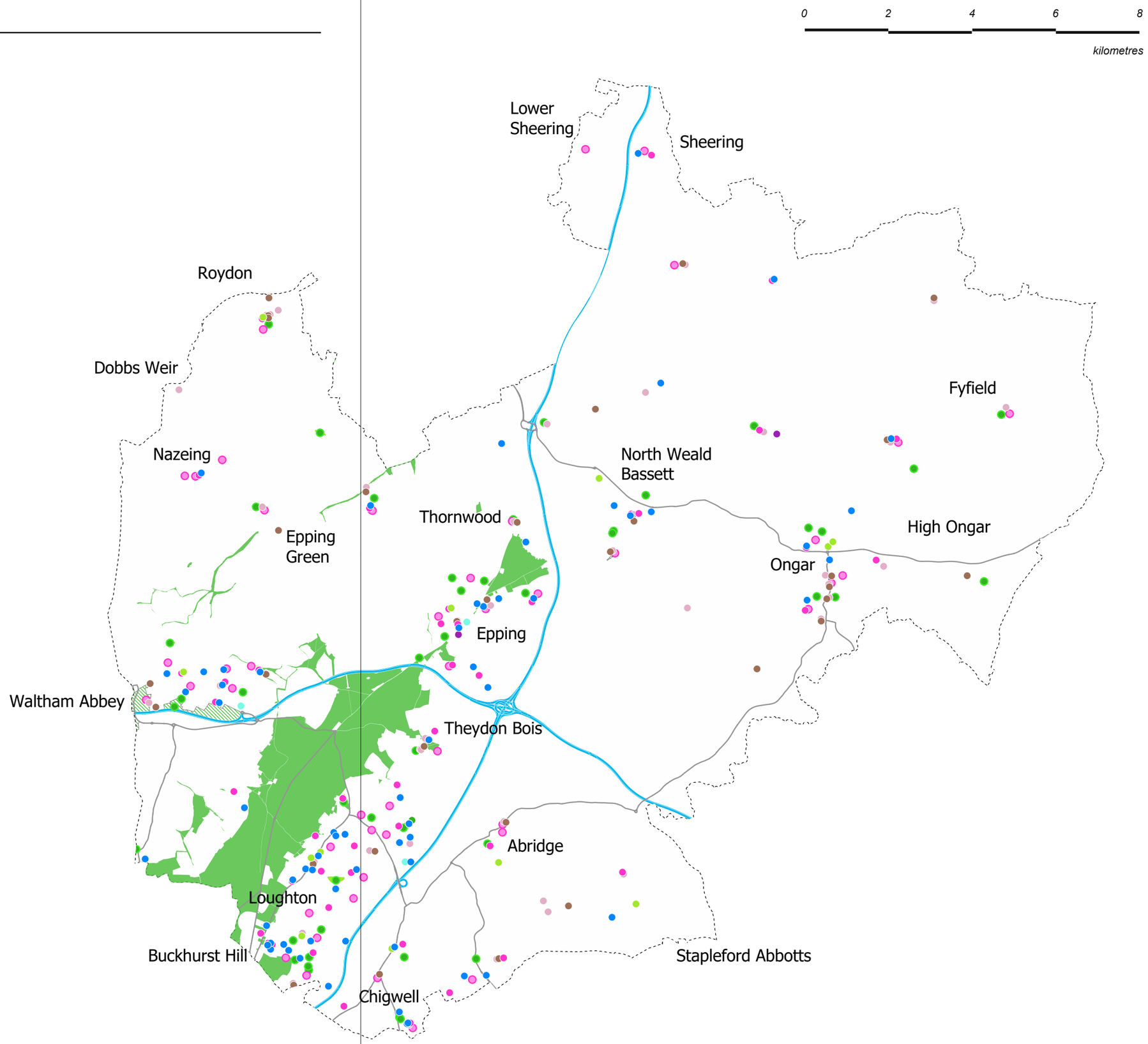
EFDC Social Infrastructure Map

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
- Waltham Abbey Town Centre Partnership
- Ongar Town Forum
- Loughton Broadway Town Centre Partnership
- Epping Town Partnership
- Buckhurst Hill Village Forum

- Lea Valley Regional Partnership
- Rural Community Council of Essex



4

SUBMISSION

This section includes the collated environmental and socio-economic sustainability checklists, and the sustainability statement.

Sustainability Checklist

The collated checklist visually represents how applicants have demonstrated that exemplar environmental sustainability is embedded in the proposed development. It is not scored, rather, it gives a clear view of how sustainable a development is, and directs specific conversation between applicant and Planning Officer and/or Quality Review Panel where improvements are needed.

Minimum Requirements	Net Zero-Carbon by 2050	Net Zero-Carbon by 2030
These are policy-compliant / Building Regulations compliant, but do not meet Climate Declaration targets	These targets meet ultimate goal, but 20 years slower	These targets meet our goal and Climate Declarations

To be added -
collated checklists from all previous topics

Sustainability Statement

Please include any additional sustainability strategies or comments you may have.

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

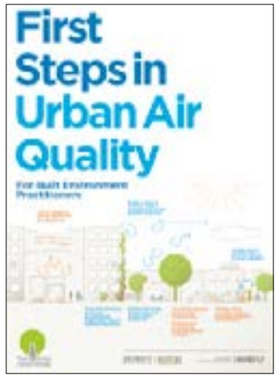
Net Zero Carbon Buildings - UKGBC

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

Appendix 3: Whole Life Carbon Assessment

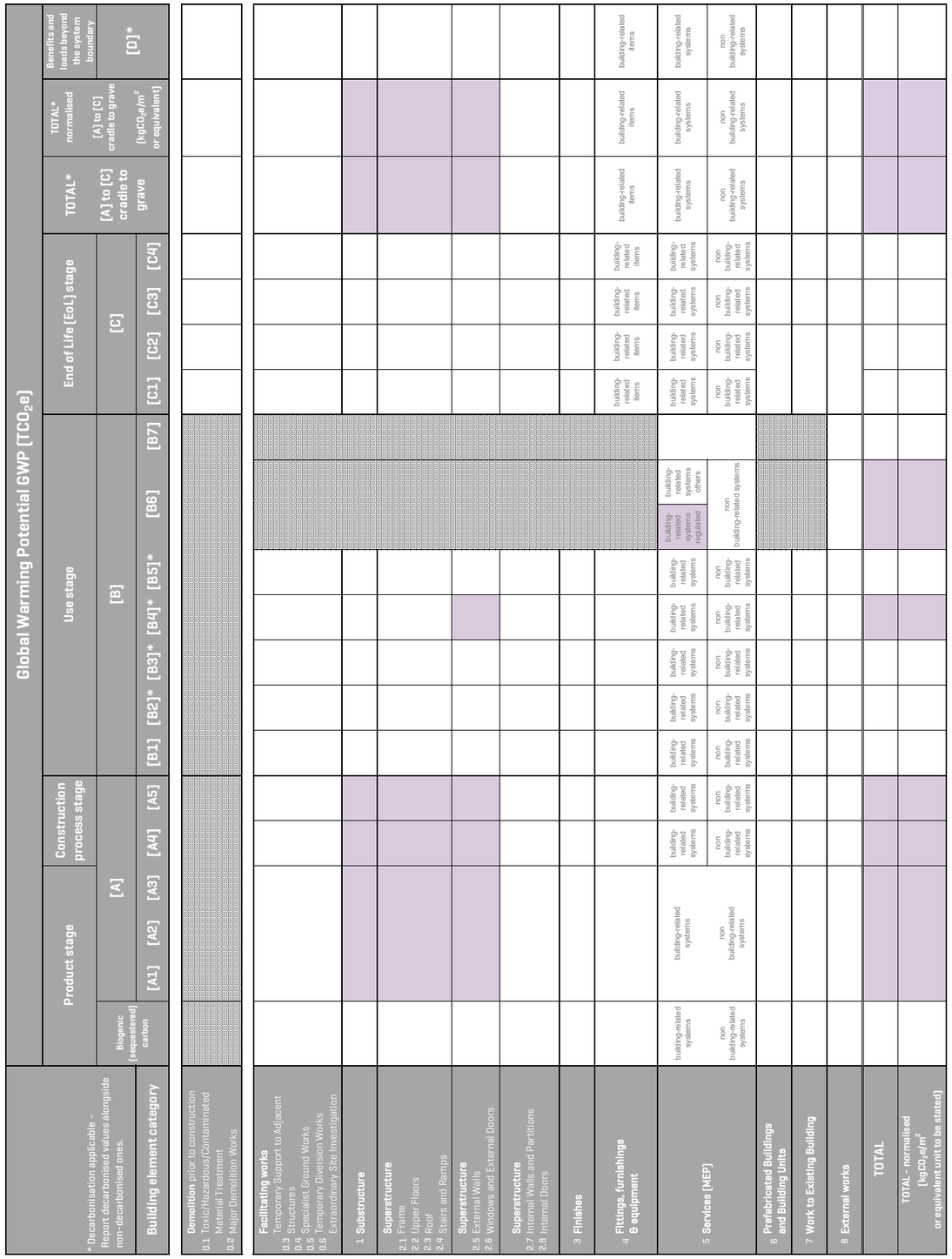
TABLE 12: THE PROJECT ID MATRIX

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	(see nested table below)
Assumptions and scenarios	List all assumptions and scenarios used in the assessment including brief justifications

#	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	

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



Appendix 4: Planning Conditions

To be added - list of planning conditions as requested by Sustainability checklist, to be used by officers when assessing planning applications

Appendix 5: Glossary

To be added.