Supplementary Committee Agenda

Epping Forest District Council

Stronger Place Select Committee
Tuesday, 29th September, 2020

Place:	Virtual Meeting on Zoom
Time:	7.00 pm
Democratic Services:	V Messenger Tel: (01992) 564265 Email: democraticservices@eppingforestdc.gov.uk

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8. COVID-19 RECOVERY UPDATE (Pages 3 - 6)

To consider the attached update on Covid-19.

11. DRAFT SUSTAINABILITY GUIDANCE FOR THE DISTRICT AND HARLOW AND GILSTON GARDEN TOWN (Pages 7 - 114)

To consider the Cabinet report on the Draft EFDC Sustainability Guidance.

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Report to Stronger Place Select Committee

Date of meeting: 29 September 2020

Portfolio: Commercial and Regulatory Portfolio – Cllr Patel

Subject: Covid-19 Update

Officer contact for further information: Andrew Small

Democratic Services Officer: V Messenger (01992 564265)

Recommendations/Decisions Required:

Consider this update report and make comments to the Portfolio Holder for Commercial and Regulatory

Report:

1. Executive Summary

1.1. Epping Forest District Council (EFDC) is responding to the national and local position in a proactive and positive way through the efforts and contribution of our staff. The Council is also playing an active part in the coordinated Greater Essex response, via the Strategic Co-ordination Group (SCG), comprising all public sector bodies operating within the County.

1.2. Most Council services are now operating normally, but with some restrictions as necessary in order to maintain distancing and the safety of staff and residents. Safety of residents and staff remains the priority.

1.3. Whilst the initial focus of the Council was strongly focused on the Response, with the easing of lockdown this is now moving to Restoration and a forward look towards Recovery.

1.4. However, the continued threat of a second spike means that the Council still has an active role in monitoring current levels of infection within the Epping Forest District Council and in ensuring that individuals and premises are observing the guidance around social distancing.

1.5. In recent weeks the new infection rates in Epping Forest District have been elevated and some of the highest in the wider Essex area. Whilst these are now slightly lower, the focus of reinforcing adherence and clear messaging remains high priority.

1.6. The majority of Council services continue to be delivered by staff working from home and no staff have been furloughed.

1.7. Through March to the end of June, responding to the impacts and supporting the residents and businesses through the crisis has been the priority focus for the Council and this has therefore dominated much of its activity. Furthermore, Covid-19 is likely to leave a lasting economic and community legacy that will remain a Council priority for potentially many years to come.

1.8. The Leader gave the role of Covid-19 Lead to the Portfolio Holder for Commercial and Regulatory. In response the Portfolio Holder, Cllr Patel, formed a cross party Portfolio

Advisory Group to consider and coordinate all matters related to Covid-19, including the Council's response and recovery actions around the key themes of Finance, Economy, Community.

1.9. Initially, during the peak of the lockdown phase, this PAG met weekly but has subsequently met less frequently as the nature of the Council's involvement and response has changed.

1.10. Cabinet considered a report in July setting out the impact of Covid-19 on the Council, the actions taken to smoothly transition through the Recovery phase and an initial set of proposal around the Economic Recovery of the district.

2. Response Phase of Covid-19

2.1. During the response phase the Council was largely focused on the provision of support to those isolated by the lockdown and the challenges of providing core services safely in a Covid-19 environment. Some examples of impact are set out below:

- The Council has been able to keep most services running, in some cases digitally, and there has been no reason to furlough employees. The Council carried out visits where social distancing could be maintained.

- At its peak, the Customer and Revenue teams handled 2,000 calls per week. That represents a 30% increase on what would normally be the busiest time of the year.

- The Revenues and Business Service Teams provided £29.7m in Business Rate grants to over 2,450 local businesses and a further £800,000 of discretionary support.

- A total of 35 employees were redeployed to Operation Shield. The work included calls to the vulnerable list of Category A residents, welfare checks, supporting with additional calls to the Covid-19 helpline, also supporting the food and distribution service.

- The Benefits Team saw a significant rise in new claims; increasing from 150 in January to 347 in April.

- Employees in Older Peoples Services made contact with over 1,500 vulnerable or shielding individuals.

3. Transition to Restoration

3.1. Considerable effort was invested in the re-opening of High Streets for non-essential retail (on 15th June) and then the hospitality sector on 4th July. With the main focus being on ensuring that people can move safely and to ensure that social distancing can be maintained, in line with Government guidance.

3.2. Work is continuing in this space, especially around ensuring that distancing is being maintained in licensed properties, hairdressers, nail bars and beauty salons, as these venues are seen as a higher risk for spreading the virus.

3.3. Across the District actions have included;

- Providing social distance markers to Town and Parish Councils in the district.

- A new webpage to facilitate digital engagement and consultation using the Commonplace platform which allows the public to map where social distancing issues exists and help identify where other measures could be delivered. Posters are displayed which have the QR code linking straight to the site.

- Essex Highways have changed signal times at pedestrian crossings so that they are instantaneous to provide pedestrian priority.

- Works in Epping High Street funded by Essex County Council have taken place resulting in a speed limit reduction, widening of the pavement in places and the suspension of a limited number of parking bays

- Work continues on identifying conflict points and what improvement actions are required to other High Streets within the district.

- A bid has been submitted for European Funds earmarked for Returning High Streets Safely.

- We have worked closely with the Police and other public bodies to ensure that the re-opening of pubs and restaurants ran smoothly, including making arrangements for the licensing of establishments using Pavements.

- We have carried out doorstep well-being surveys in two wards across the district to understand the impacts of Covid-19 on communities. The result will help to formulate future actions.

3.4. Test, Track and Trace has also been a focus of activity in terms of providing support to the national initiative and Essex CC. It is Essex CC who will assume the local lead and have the key powers in the event of an outbreak. The Council's has been in providing support and guidance to those within local 'hotspots', should they occur.

4. Recovery Actions

4.1. A full understanding of the lasting impacts of Covid-19 will take time to emerge. However, it is immediately apparent that the local economy will be badly hit by Covid-19, with the impacts probably lasting months and potentially years. The impacts include permanent changes to shopping habits, a shift in the viability of office space, retail and leisure and an expected significant increase in unemployment.

4.2. Cabinet considered an initial set of Economic Recovery proposals at its meeting in July and it is expected that more will follow as our understanding of the impacts matures.

Reason for decision:

The Council response has been complex and broad, and members' views and comments are welcomed to inform future actions.

Options considered and rejected:

None.

Consultation undertaken:

None.

Resource implications:

The Council has experienced a significant financial impact from lockdown, predominantly as a result of lost income from commercial rents, car parks, leisure centres, business rates and council tax, but also has incurred cost pressures from helping the District through this crisis. As a result, the Pandemic represents one of the biggest financial issue facing the Council.

The current forecast (in line with the numbers being supplied to Government) is that the total cost to Epping Forest District could be in the order of £6.7 million across the General Fund and Housing Revenue Account. There are many large assumptions in arriving at this number, not least of all, the speed at which the economy recovers. Given this uncertainty, the actual cost may vary widely from this central estimate.

To date the Government has provided £1.577 million in support to the Council and announced further support on lost income from Fees and Charges and is considering support on lost Council Tax and Business Rate income. However, it is clear that the Government will not cover the full cost of the event and councils will be expected to share the cost.

The council had working balances of £7½ million at the start of 2020/21, and therefore is considered 'safe' in terms of its ability to balance its budget in the current year.

Legal and Governance Implications:

None.

Safer, Cleaner, Greener Implications:

None.

Report to the Cabinet

Report reference: ***C-027-2020/21***
Date of meeting: ***19 October 2020***

Epping Forest District Council

Portfolio: **Planning and Sustainability – Cllr. N Bedford**

Subject: **Draft Sustainability Guidance for the District and Harlow and Gilston Garden Town**

Responsible Officer: **Alison Blom-Cooper (01992 564066).**

Democratic Services: **Adrian Hendry (01992 564246).**

Recommendations/Decisions Required:

(1) To agree that the Draft EFDC Sustainability Guidance documents (Major Developments and Minor Developments) and Draft HGGT Sustainability Guidance and Checklist (Strategic Sites) be approved for public consultation for a six week period, and;

(2) To agree that the Planning Services Director, in consultation with the Planning and Sustainability Portfolio Holder be authorised to make minor amendments to the Draft EFDC Sustainability Guidance (Major Developments and Minor Developments) prior to the public consultation;

(3) To note that, following consultation, and any subsequent revisions to the documents, it is intended that the final EFDC Sustainability Guidance and Checklists (Major Developments and Minor Developments), will be considered by Cabinet for endorsement as a material planning consideration for the preparation of masterplans, pre-application advice, assessing planning applications and any other development management purposes within the District.

(4) To note that, following consultation, and any subsequent revisions to the documents, it is intended that the final HGGT Sustainability Guidance & Checklist, will be agreed as a material planning consideration for the preparation of masterplans, pre-application advice, assessing planning applications and any other development management purposes within the Harlow & Gilston Garden Town.

Executive Summary:

The Council's emerging Local Plan sets out policies in relation to sustainable and high quality design and construction of developments. On 19 September 2019 the Council declared a Climate Emergency, including a resolution to do everything within the Council's power to make Epping Forest District Council area carbon neutral by 2030. To support these policies and this declaration, the Council has produced two EFDC draft Sustainability Guidance documents for use across the District; one for Major Developments (10+ units) and one for Minor Developments (1-9 units). The documents are in addition to the draft HGGT Sustainability Guidance and Checklist, which is relevant for sites which are located both within Epping Forest District and the Harlow and Gilston Garden Town.

The EFDC Sustainability Guidance documents will provide both planning applicants and officers practical and technical guidance on how new developments across the District can comply with the Council's sustainability ambitions of becoming carbon neutral by 2030 and promote social equity and community resilience across the District. In addition, the Guidance documents also include sustainability checklists for applicants to complete, providing an indication of the development's performance against known sustainability indicators. The guidance documents will ensure that all new development in the District is delivered to meet the targets set by the Council regarding environmental, social and economic sustainability. The document will also be utilised by the Quality Review Panel to help form the basis of environmental and socio-economic sustainability discussions.

This report provides members with a summary of the aims, objectives and purpose of the EFDC Sustainability Guidance (Major Developments and Minor Developments). The intention is that following public consultation and any updates arising that the Final Guidance will be return to Cabinet for endorsement as a material consideration in the determination of planning applications, and guide design and implementation processes. A separate report is available with further detail on the draft HGGT Sustainability Guidance and Checklist, the purpose and process undertaken, proposed consultation and next steps (this is attached as Appendix C).

The Harlow & Gilston Garden Town seeks to set the agenda for sustainable living through ensuring growth that will be net carbon neutral by 2030 and building strong and integrated communities across new and existing places. The UK Government has declared a Climate Emergency, with all five HGGT Partner Authorities also declaring a Climate Emergency/ Action. The draft HGGT Sustainability Guidance and Checklist supports the highest commitment across the Garden Town authorities, which is to become Carbon-Neutral by 2030, and will relate to major development within the Garden Town, including the strategic sites/ Garden Communities.

Once consulted upon and with comments incorporated, the HGGT Sustainability Guidance and Checklist will be endorsed by the partner authorities to be a material planning consideration in the assessment of planning applications for developments coming forward within the Garden Town. It will inform pre-application discussions and assist decision-makers in sustainability matters. The document will also be utilised for HGGT Quality Review Panel reviews to help form the basis of environmental and socio-economic sustainability discussions.

Reasons for Proposed Decision:

- To ensure that the EFDC Draft Sustainability Guidance documents (Major Developments and Minor Developments) are afforded suitable planning weight by agreeing that the documents should be consulted upon prior to endorsement as

material planning considerations. This will ensure that development proposals across the District target the Council's sustainability ambitions, and that clear parameters are established for future pre-application advice, assessing planning applications and any other development management purposes.

- To ensure that the HGGT Sustainability Guidance and Checklist are afforded suitable planning weight by agreeing the document should be consulted upon prior to endorsement as a material planning consideration, to ensure that development proposals within the Garden Town target the HGGT sustainability ambitions, and that clear parameters are established for future pre-application advice, assessing planning applications and any other development management purposes within the Garden Town.

Other Options for Action:

- Not to agree the EFDC Sustainability Guidance documents (Major Developments and Minor Developments) and HGGT Sustainability Guidance and Checklist can be published for a 6 week consultation which would mean that there would be no guidance to support the delivery of development proposals and achieve the objectives set out in the Council's emerging Local Plan policies SP3, DM5, DM9, DM11, DM15-22.

Report:

1. The National Planning Policy Framework sets out a presumption in favour of sustainable development. The emerging Epping Forest District Council's Local Plan policies are in line with this objective and encourage the delivery of developments that promote growth in sustainable locations, sustainable transport and that mitigate the impact on biodiversity and natural habitats. Epping Forest District Council declared a Climate Emergency in September 2019, and a commitment to target net zero carbon across the District by 2030.

2. Draft Sustainability Guidance documents (Major Developments and Minor Developments) have been developed to support key policies on sustainable and high-quality place making alongside the Council's commitment to deliver net zero carbon developments by 2030. The following documents are therefore attached to this report:

    - Appendix A – Draft EFDC Sustainability Guidance: Major Developments, September 2020
    - Appendix B – Draft EFDC Sustainability Guidance: Minor Developments, September 2020
    - Appendix C – Draft HGGT Sustainability Guidance and Checklist, September 2020
    - Appendix D - HGGT Board Report - Sustainability Guidance for Consultation
    - Appendix E – QRP Report for HGGT Sustainability Guidance and Checklist, January 2020
    - Appendix F - EqIA Sustainability Guidance documents consultation Oct 20

3. The intention is for the EFDC Sustainability Guidance documents (Major Developments and Minor Developments) to be the subject of public consultation prior to the endorsement as material planning considerations by the Council. The Guidance documents are intended to remain a consideration alongside and beyond the life of the Local Plan.

4. Applicants and designers will need to demonstrate how their proposals address the environmental sustainability checklist, and the socio-economic sustainability questions in the Sustainability Guidance (Major Developments and Minor Developments), addressing the key principles for sustainable development. This should be through creating clear environmental targets, demonstrating an understanding and analysis of the site and landscape-led development, a proposed engagement with stakeholders and the community, and showing how the proposal will contribute to the existing communities and local needs of Epping Forest District, throughout the life of the development.

Objectives

5. The principle objective for the guidance is to act as a practical and technical guide for both applicants and officers in the design, development management and implementation processes to ensure new development meets sustainability targets.

6. Within this objective is a focus on a design and community-led and fabric-first approach to environmental, social and economic sustainability, to deliver high quality development while also establishing a framework for ensuring developments integrate themselves in existing communities and promote social equity.

7. The design of all new development should be landscape led and cross disciplinary and this should inform a proposal from its initial scoping through to detailed design submission of a planning application and discharge of conditions. The design should not address only a limited aspect of sustainability but demonstrate holistic consideration of the different topics presented within the guidance including; energy efficiency and carbon, renewable energy, sustainable movement, water efficiency, green infrastructure, circular economy, waste, pollution and air quality, and assuring performance. It is important that this design process is iterative, involving the Council's urban and landscape design officers, stakeholders; and that where appropriate, it is informed by use of the Quality Review Panel.

8. In addition to environmental sustainability, new developments should also consider their implications on the social and economic sustainability of existing communities and residents. Applicants should demonstrate how their developments respond to the following areas: Health & Wellbeing, Economic Growth and Community Strength and Social Infrastructure.

9. The intention is following consultation for the Sustainability Guidance to be updated to take account of consultation comments and then be endorsed as a material planning consideration in the consideration of planning proposals including masterplans and concept frameworks and the determination of planning applications.

10. The Guidance currently focuses on new build developments. Further EFDC Sustainability Guidance to add to this suite of documents, relating to the retrofit and refurbishment of existing buildings, will be developed in Autumn 2020, for consultation in early 2021. This guidance will align with the LETI Retrofit Working Group industry guidance, which is due to be published in December 2020.

Programme for consultation

11. Early engagement on the EFDC Sustainability Guidance has been taking place in part alongside engagement for the HGGT Sustainability Guidance, upon which the EFDC document for major developments is based. There has been extensive input from officers from all HGGT partner authorities into the draft HGGT Sustainability Guidance

and Checklist, with a number of rounds of engagement across various services and departments in order to create a holistic and agreed guidance and checklists questions on a broad range of topics. This has included whole-document reviews as well as specific topic-focused workshops with relevant officers. External sustainability expertise has also been sought via the Quality Review Panel and UK Green Building Council.

12. The Council has and will continue to conduct workshops with EFDC officers and Members for the EFDC Sustainability Guidance documents. Informal engagement has been undertaken with the EFDC Leadership team, Local Plan Implementation Forum and officers across different service departments including Planning, Housing, Community, Culture and Wellbeing, Technical and Regulatory Services, and Economic Development.

13. Members have been engaged on the draft Sustainability Guidance, to provide early comments and queries in order to shape the documents. An EFDC Member workshop was held on 21 September 2020 and two All-Member HGGT briefing and workshop sessions were held on 27 July 2020 and 26 August 2020. Further engagement with members is scheduled in October and during the public consultation period in November/ December.

14. In accordance with the Council's Statement of Community Involvement (SCI), the Council is required to consult stakeholders and the general public on the draft Sustainability Guidance. The proposed period of consultation in line with the SCI is six weeks. All those on the Council's planning policy database will be notified, information including the documents, an online survey/ questionnaire and potential video content explaining the document will be made available on the Council's website and by notification to statutory consultees. Public Consultation on the draft EFDC Sustainability Guidance documents and draft HGGT Sustainability Guidance and Checklist is proposed to run concurrently over a six week period from November – December 2020.

15. Given current restrictions on in-person engagement due to COVID-19, we will focus on reaching a broad audience primarily through digital and, where possible, non-digital means. The consultation will seek to include:

Digital engagement:

- EFDC Sustainability Guidance documents available for viewing on EFDC website.
- HGGT Sustainability Guidance and Checklist and pre-recorded and accessible overview video available for viewing on HGGT website, with links to this from partner authority websites.
- Digital questionnaire / survey available for viewing and completing on HGGT website and Council Websites.
- Staffed online webinars and Q&A for particular stakeholder groups (e.g. Local residents and Community Groups, Developers, Members, Youth Councils, Partner Officers)
- Social Media awareness campaign (via HGGT, partner authorities and EFDC Comms Team).
- Notification of consultation via LPA Planning Policy databases and statutory consultees.

Non-digital engagement:

- Limited number of hard copy consultation packs on request: leaflet/ poster information to provide summary, and link/ QR Code to online document, and to provide hard copy of questionnaire/ survey.
- A COVID-19 secure staffed event, with a small number of hard copies of the document and survey available for review and completion, if this is considered safe to do so.

16. Consultation arrangements will be put in place and will be advertised ahead of the consultation, in accordance with the Statement of Community Involvement.

17. The intention is to simultaneously consult publicly on the EFDC Sustainability Guidance documents (Major Developments and Minor Developments), the HGGT Sustainability Guidance and Checklists, and also the HGGT Healthy Town Framework (approved for consultation by the Council's Cabinet in March 2020). Therefore, particular attention will be given to explaining these separate documents, their purpose, use and audience, and where they align or diverge.

18. Following the consultation, the responses will be collated and where appropriate amendments made to the documents. The EFDC Sustainability Guidance documents (Major Developments and Minor Developments) and the HGGT Sustainability Guidance and Checklists will then return to Cabinet for formal endorsement as material planning considerations.

Resource Implications:

The work to support the draft EFDC Sustainability Guidance to be viewed alongside the emerging Local Plan is covered by the local plan budget and staff within the Local Plan and Implementation teams. Undertaking consultation during COVID-19, and the associated emphasis on printed information such as leaflets/ surveys, and enabling return postage, rather than in-person events and responses, may incur additional costs which will be met from the existing local plan consultation budget

Legal and Governance Implications:

EFDC Sustainability Guidance documents (Major Developments and Minor Developments) and the HGGT Sustainability Guidance and Checklist have been developed in the context of Government Policy (NPPF), Planning Practice Guidance and good practice.

Safer, Cleaner and Greener Implications:

The Sustainability Guidance seeks to take forward emerging Local Plan policies designed to promote the notion of making good places to live, work and visit. This will include sustainable development, sustainable transport, energy efficiency and environmental considerations as well as principles of socio-economic sustainability.

The delivery of the Sustainability Guidance will help to address the impacts of recreational pressure and air quality on Epping Forest Special Area of Conservation and will contribute to safer, cleaner, greener objectives by planning for sustainable development.

Consultation Undertaken:

For the EFDC Sustainability Guidance documents (which were based on the HGGT

Sustainability Guidance as appropriate) informal engagement has been undertaken with officers, the EFDC Leadership Team, Local Plan Implementation Forum and EFDC Councillors.

For the draft HGGT Sustainability Guidance and Checklist informal engagement has been undertaken with partner officers, the HGGT Quality Review Panel, UK Green Building Council, HGGT Developer Forum and HGGT partner authority Councillors

Background Papers:

- None.

Risk Management:

The use of these documents as material planning considerations will support the Council's objectives of achieving high quality and sustainable design in the district and reduce the risk of poor quality development.

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

DRAFT FOR CONSULTATION - REVISION 02
SEPTEMBER 2020

Issue and Revision Record

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

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Contents

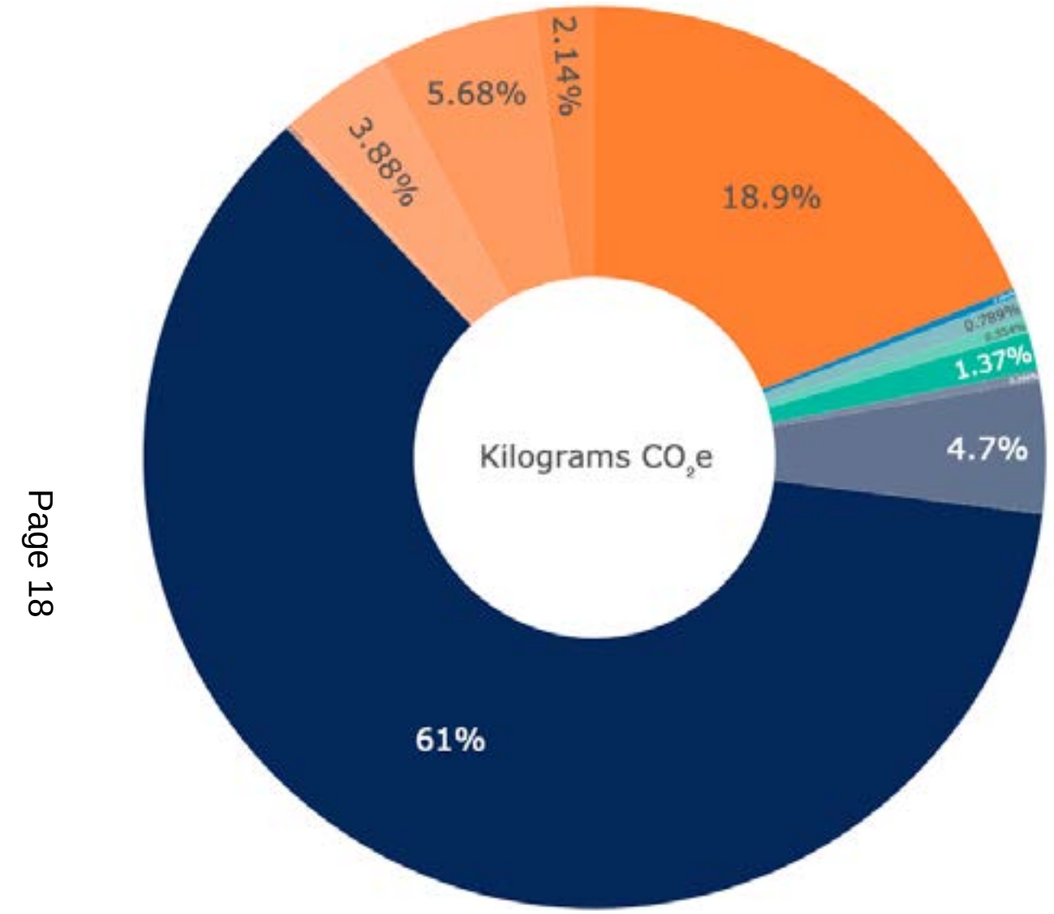
1

INTRODUCTION

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



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?

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 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 major developments within Epping Forest District. This will include:
- Strategic Masterplan / Village Masterplan areas
- All major residential and non-residential developments and associated infrastructure proposals (10+ units)
- Change of Use resulting in major 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 District Council 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 net 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.

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 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	For applications greater than 99no. units, what BREEAM Communities Level is met?	Very Good	Excellent	Outstanding
En.9	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;

• 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.

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.

Masterplanning for sustainable movement should address: walkable low-traffic neighbourhoods with good permeability, sociable streets and placemaking; cycling, walking and public transport network; behaviour change programmes; rebalancing car use and parking design and availability; futureproofing with adaptable technology; deliveries and servicing; and construction impacts.

Development will be supported where they:
(i) promote transport choice, 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;
(iv) do not result in unacceptable increases in traffic generation or compromise highway safety.

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.

Designs must futureproof for change in travel habits, including reallocating parking and road space, innovation in travel technology, last mile deliveries and electric charging.

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
- **DM22** Air Quality

- Essex Transport Strategy
- Epping Forest District Cycling Action Plan

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, London
Involve e a range of innovative improve-ments for cyclists, including cycle training, cycle road-shows, bike mainte-nance 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		Minimum Requirement	Net Zero-Carbon by 2050	Net Zero-Carbon by 2030
Tr.1	Have walkable, low-traffic and permeable neighbourhoods been designed as a first principle?	No - vehicle access design prioritised	Yes - transport hierarchy considered	Yes - walking & cycling desire lines, network, topography, user hierarchy as design drivers
Tr.3	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.4	Have inclusive design principles / accessibility for all regarding sustainable movement been achieved?	Meets Equalities Act	Inclusive Design Statement provided	Exemplary inclusive design provided
Tr.5	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
Tr.6	Has a Sustainable Travel Plan been provided? Has Modeshift Stars accreditation been explored?	No	Yes - 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.			

Water Efficiency

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 ambitious 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.

SOCIO-ECONOMIC CO-BENEFITS +

KEY LOCAL POLICY & GUIDANCE

EFDC Local Plan Policy:

- **SP4(xvii)** Highest standards of energy efficiency
- **DM9** High Quality Design
- **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	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.			

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, 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.

The green infrastructure network of EFDC must be considered in an integrated way. Design of streetscapes and amenity spaces, with urban greening such as street trees, pocket parks, garden hedgerows, Super Greenways, greens roofs and swales, can provide placeshaping benefits as sociable streets 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 and across all design stages, as set out in the EFDC Green Infrastructure Strategy. They should respond to the District's distinctive setting; expand and enhance the green infrastructure network; improve access to, and the quality of, the surrounding Green Belt; 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. 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.

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

- 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		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	Have you used recognised tools to assess the value/ quality of green infrastructure? E.g. Natural Capital Tool/ Ecometric/ Building With Nature/ Social Value Calculator	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	Yes - some assessment	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, with 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.			

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: 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.

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

- Circular Economy Guidance for Construction Clients (UKGBC)

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 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.			

Pollution & Clean 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 and activities 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), already under pressure due to current traffic levels, recreational use and visitor numbers. 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.

The links between poor air quality and human health are well documented by Public Health England. New developments should also attempt to mitigate negative impacts on human health, and take in to consideration the District's requirements on Air Quality Management Areas, Local Air Quality Action Plan, and development Air Quality Assessments.

The following net health gain principles (adopted from Public Health England's guidance) should be incorporated 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. Incorporate Clean Air Zones in larger developments
5. Avoid creating 'street canyons' which encourage pollution to build up
6. Incorporate green infrastructure to promote carbon and pollution sequestration
7. Orientate and design buildings to rely less on heating and cooling systems
8. Site residential accommodation away from roadsides
9. 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.

KEY LOCAL POLICY & GUIDANCE

EFDC Local Plan Policy:

- **SP3 (xvii)** Highest standards of energy efficiency
- **DM 2** Epping Forest SAC and the Lee Valley SPA
- **DM 9** High Quality Design
- **DM 19** Sustainable Water Use
- **DM 20** Low Carbon and Renewable Energy
- **DM 21** Local Environmental Impacts, Pollution and Land Contamination
- **DM 22** Air Quality

- EFDC Green Infrastructure Strategy

CASE STUDIES

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
P.1	Have measures been taken to reduce the need for car travel, and provide alternative zero and low-emission travel options?	No		Yes
P.2	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
P.3	Has a Landscape Framework been provided that articulates how, where applicable, an integrated approach has been taken to the provision of SANG, in line with the guidance in the GI strategy?	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.			

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

Page 30

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 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 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 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, 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, 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(including through the provision of green infrastructure)
- 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, 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 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.

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.

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.

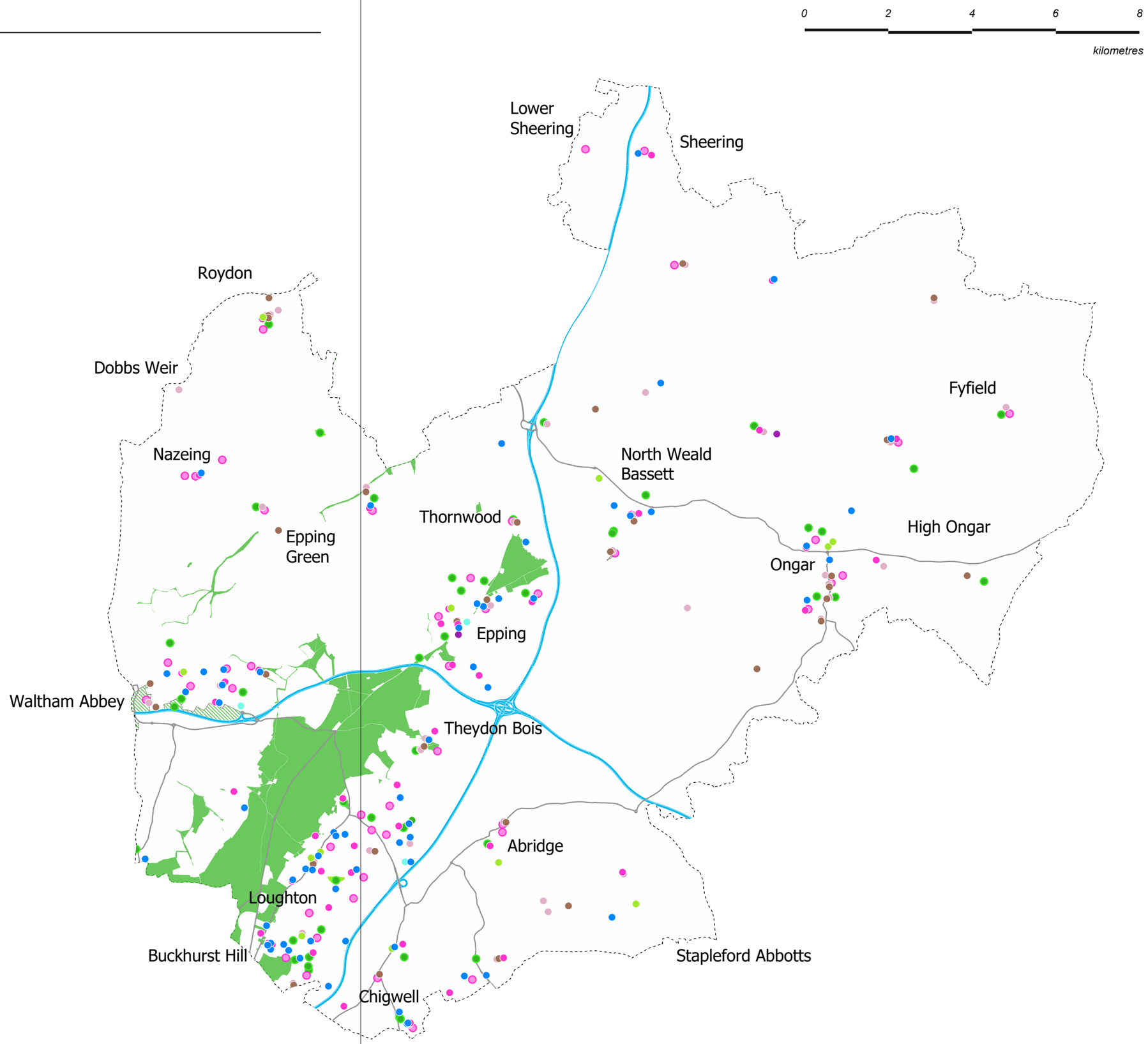
Castlebank Horticultural Training Centre, Lanark (EKJN)
A collection of neglected outbuildings behind Castlebank House have become a thriving horticultural training centre, a valuable community resource.

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
- 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



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

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

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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

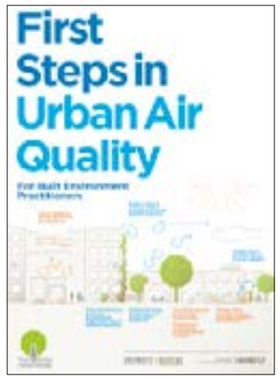
Net Zero Carbon Buildings - UKGBC

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

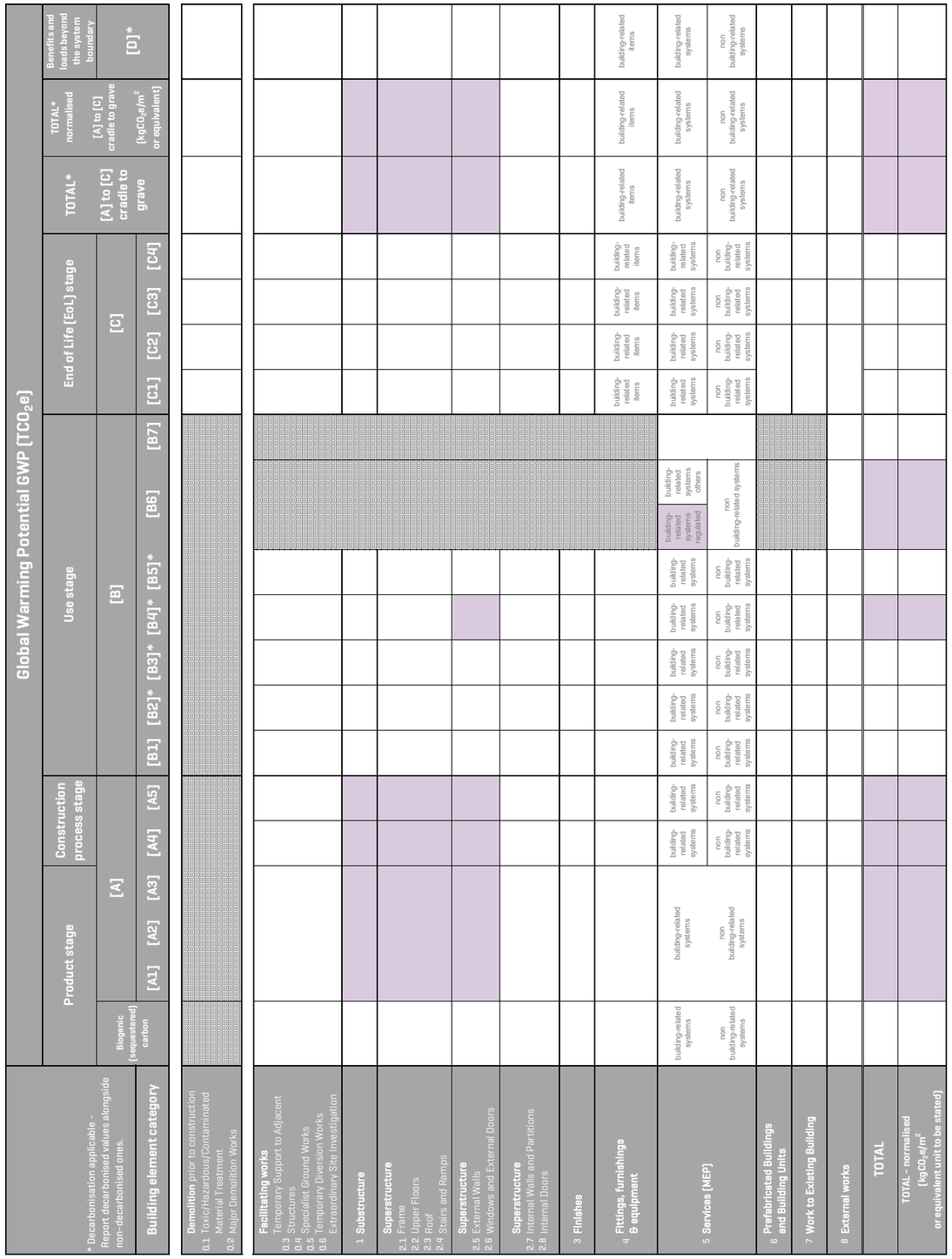
Date of assessment	Date of assessment completion
Verified by	Verifier name and organisation
Project type	New build or refurbishment of existing structure
Assessment objective	Brief assessment purpose statement
Project location	Full address
Date of project completion	Anticipated date of practical completion
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	

#	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



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.

2

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

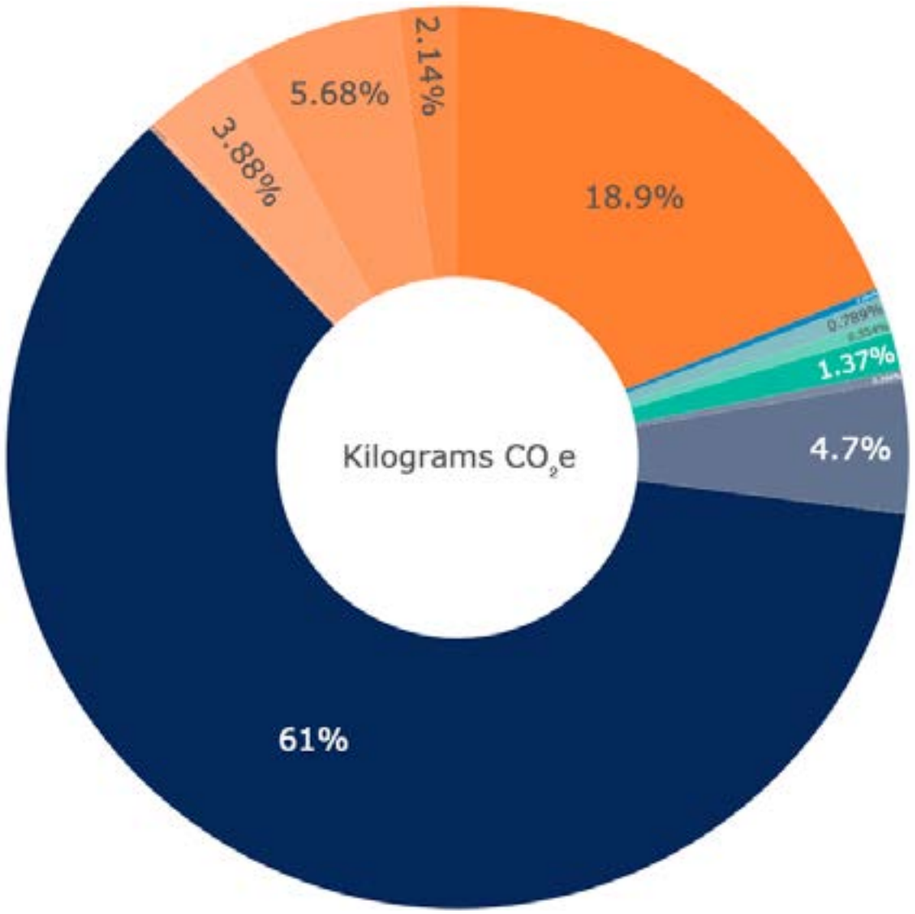
INTRODUCTION

Page 4

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.

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 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

Page 26

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

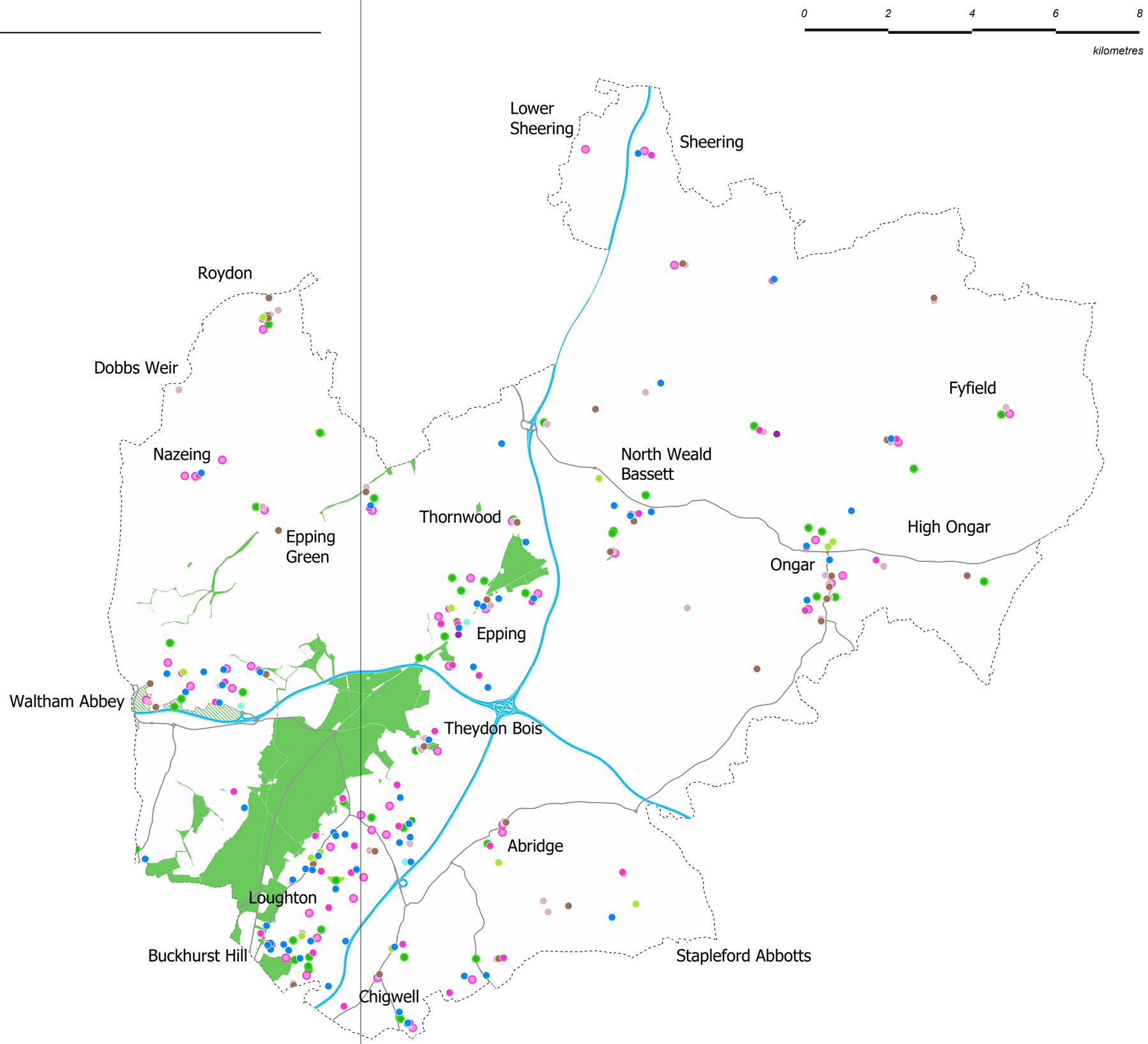
SUBMISSION CHECKLIST	
S.1	Explain how the proposals have been informed by the key stakeholders. (Include in response: the stakeholders you have engaged with, the findings from these sessions, and how you have implemented stakeholder recommendations) *(max. 250 words)*
S.2	Explain how the socio-economic 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

Page 90

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

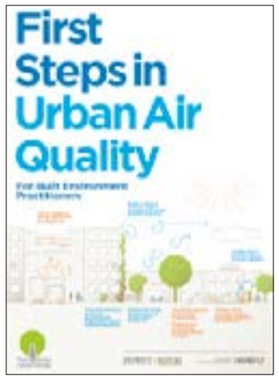
Net Zero Carbon Buildings - UKGBC

Passivhaus

BREEAM Communities

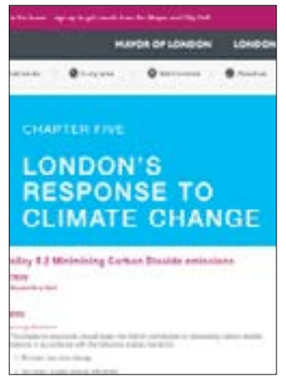
BREEAM HQM

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

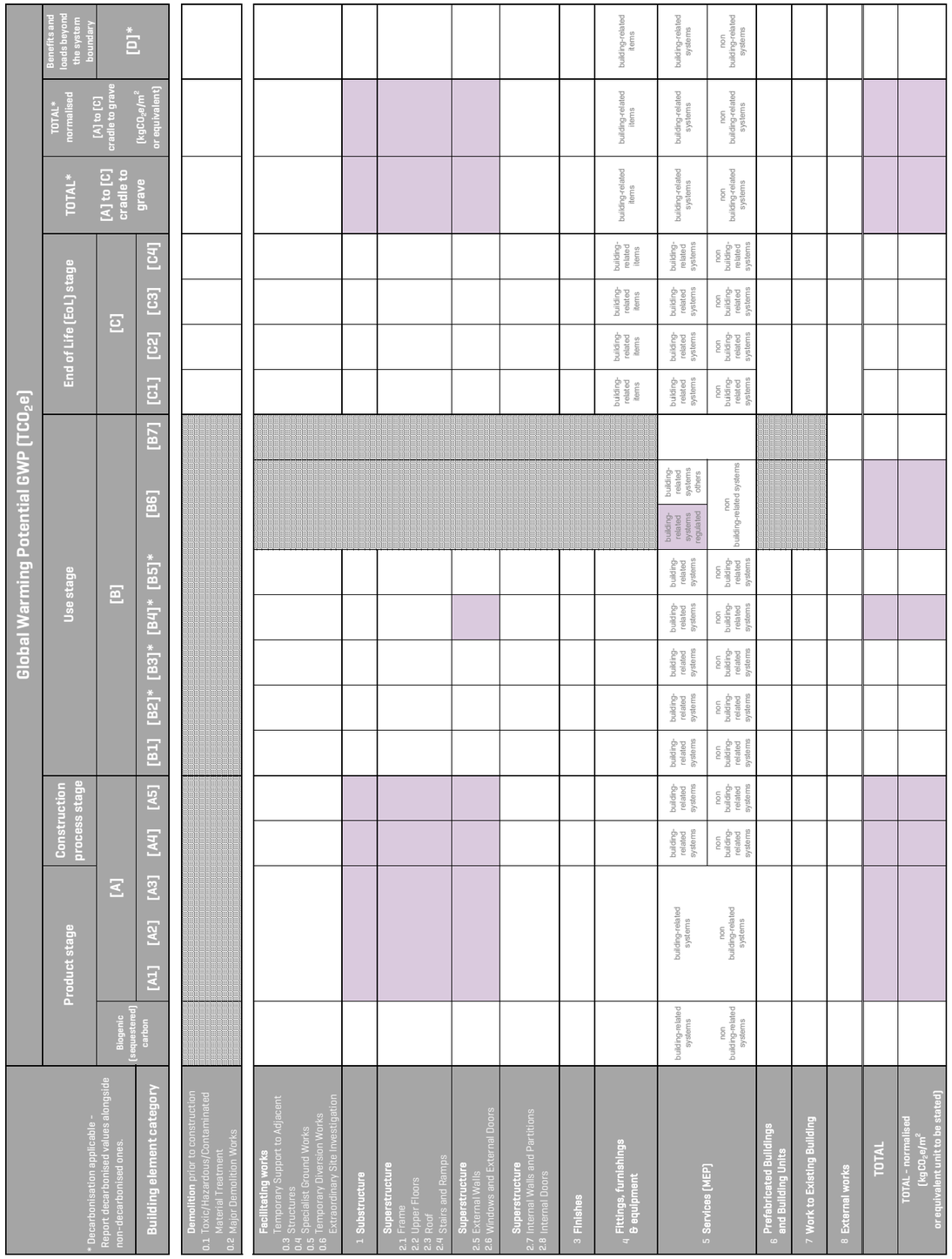
Date of assessment	Date of assessment completion
Verified by	Verifier name and organisation
Project type	New build or refurbishment of existing structure
Assessment objective	Brief assessment purpose statement
Project location	Full address
Date of project completion	Anticipated date of practical completion
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	

#	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



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.

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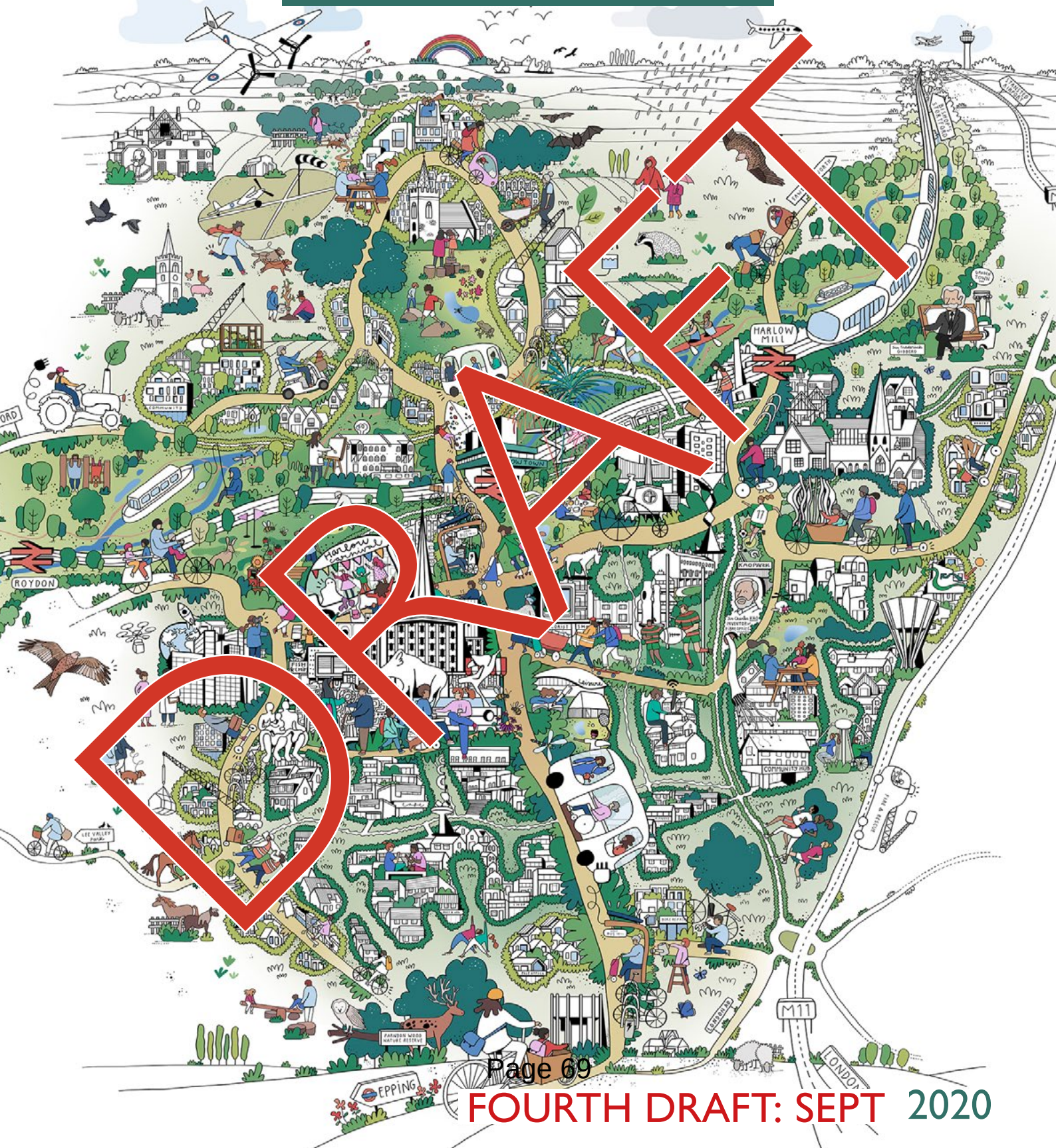
HGGT

HARLOW & GILSTON GARDEN TOWN

SUSTAINABILITY GUIDANCE & CHECKLIST

Interactive PDF: best viewed on computer screen



DRAFT

FOURTH DRAFT: SEPT 2020

TABLE OF CONTENTS

The majority of the illustrations in this guidance have been undertaken by Narea Bermejo Olaizola

Essex County Council · Hertfordshire · Harlow Council · Epping Forest District Council · East Herts Council

HGGT WEBSITE

The pioneering New Town of Gibberd and Kao will grow into a Garden Town of enterprise, health and sculpture at the heart of the UK Innovation Corridor. Harlow and Gilston will be a joyful place to live with sociable streets and green spaces; high quality homes connected to fibre optic broadband; local centres accessible by walking and cycling; and innovative, affordable public transport.

It will set the agenda for sustainable living. It will be adaptable, healthy, sustainable and innovative.

HARLOW AND GILSTON GARDEN TOWN

Harlow and Gilston Garden Town (HGGT) will comprise new and existing communities in and around Harlow. Set in attractive countryside, with transformative investment in transport and community infrastructure, new neighbourhoods to the east, west and south and new villages to the north will be established.

East Herts, Epping Forest and Harlow District Councils are working together with Hertfordshire and Essex County Councils to ensure plans for the Garden Town support sustainable living and a healthy economy; provide a good quality of life for existing and future residents; and respond to local landscape and character.

The **HGGT Vision** document sets out the vision for the Garden Town and the principles which will inform its growth and management. It will help support the delivery of the locally-led Garden Town, furthering the joint-work that is supported by Government.

SUSTAINABLE LIVING

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.
UN Sustainability Development Goals

The Garden Town seeks to set the agenda for sustainable living through ensuring growth that will be being net carbon neutral by 2030, and building strong and integrated communities across new and existing places, with social equity.

POST COVID-19 PANDEMIC RECOVERY

This Guidance was developed during the devastatingly global pandemic of the corona virus. Specifically, the pandemic highlighted the stark environmental, social, and economic inequalities of many parts of society in it's wake and an economic set-back that will be felt for years to come.

As a result, high-quality design is needed now more than ever to ensure that existing and new residents of the Harlow & Gilston Garden Town can recover from this pandemic in a sustainable manner. Specifically, unemployment will be high, as is the situation around the country, and there will be additional need to increase job opportunities through the design, construction, and long-term maintenance of infrastructure across the Garden Town. All stakeholders are therefore expected to work collaboratively to ensure that the Garden Town is a joyful and sustainable place to live, work, and play.

Introduction

INTRODUCTION

1 | THE CLIMATE EMERGENCY

The UK Government has declared a Climate Emergency, with all five HGGT Partner Authorities also declaring a Climate Emergency / Action.

This Sustainability Guidance supports the highest commitment across the Garden Town authorities, which is to become Carbon-Neutral by 2030.

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.

Climate change adaptation is a term that describes measures that can be put into place to help us adapt the changes in our climate that are now inevitable.

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

2 | PURPOSE OF THIS GUIDANCE

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

The three district authorities have a combined carbon emission contribution of 2,048 CO2 (kt) across all industries (2017 data). Planning for significant growth in the Garden Town, 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 HGGT Vision and partner authorities Plans will be applied to new major residential and non-residential developments in the Garden Town.

The purpose of this guidance is to help applicants meet the Garden Town goals of becoming net zero-carbon by 2030, and, building strong and integrated communities across new and existing places.

3 | 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 the design of proposals 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 Garden Town. It will inform pre-application discussions and assist decision-makers in sustainability matters.

The HGGT Quality Review Panel (QRP):

This Checklist will be utilised for QRP reviews to help form the basis of Sustainability and Garden Town 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.

4 | WHEN TO USE 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 and relevant certification 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 pre-occupation conditions (Appendix 7) 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.

HOW TO USE THIS GUIDE

5 | HOW TO USE GUIDANCE

High quality and sustainable development requires environmental, social and economic sustainability to be holistically considered. This document is split into two sections, with **sustainability categories interdependent on each other**, and co-benefits indicated throughout. The **two sections** in exemplar placeshaping:

1. The Environmental Section
2. The Socio-Economic Section

These Sections consists of **Categories**, noting:

1. **Objectives & Requirements**
2. **Key Local Policy & Guidance**
3. **Case studies**: with links to external sources
4. **Checklist**: to be completed and submitted.

6 | TO BE SUBMITTED

1. Collated Sustainability Checklist
2. Sustainability Statement

A Sustainability Statement or Strategy will be required; this guidance and checklist will assist applicants to provide the information for this, in order to meet the Garden Town principles and local policies.

7 | APPLICATION OF GUIDANCE

The guidance is also applicable to:

- Strategic Masterplan / Village Masterplan areas
- All major residential developments (≥ 10no.)
- Non-domestic major developments and infrastructure proposals (as applicable)
- Change of Use resulting in a major development
- Council-led housing within the Garden Town

8 | THE QUALITY CHECKLIST

The **Checklists** visually indicate the quality of development in line with the Garden Towns' standards - these work together across categories and will therefore be assessed interdependently to ensure a holistic approach overall.

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

9 | RELATIONSHIP TO THE LOCAL PLANS

This guidance should be read in conjunction with the policies found in the Epping Forest DC (2017), East Herts DC (adopted 2018), and Harlow DC (2018) Local Plans and this document will be endorsed to have material planning weight when determining applications.

This Garden Town sustainability guidance will need to be considered as part of the wider policy context but is expected to compliment to the policies and SPD by providing a practical tool for enhancing the sustainability of development in the Garden Town.

10 | RELATIONSHIP TO VISION

Although this document is presented in a stand alone format, it should be read in conjunction with the Harlow and Gilston Garden Town Vision, and Design Guide. The Sustainability Guidance takes the principles and objectives of the Vision as its starting point and provides guidance and checklists to help deliver these principles, and sustainability goals.

The HGGT Design Guide sets out Design Quality Questions which applicants are expected to follow. The information in this document aim to build on these and provide further guidance and detail where appropriate.

The Sustainability Guidance and Checklist will help inform a collaborative masterplanning and application process.

11 | PARTNERSHIP WORKING

In addition to cross-boundary working as part of the Councils' Duty to Cooperate, the Councils 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.

12 | REVIEW & MONITOR

This document will be reviewed regularly (maximum every three years) to ensure that it remains fit for purpose, and updated as necessary.

13 | INCENTIVES FOR SUSTAINABILITY

This section highlights how high-quality sustainable development de-risks the Planning, Construction, and Commercial aspects of development.

By 2030 all new buildings will need to operate at Net Zero (i.e. annual net zero carbon emissions), which means that by 2025 100% of all new buildings must be designed to Net Zero-Carbon.

In the Garden Town, 16,000 new homes are expected over the next plan period, with more to follow. If the standards highlighted in this document 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 at equal cost to traditional build costs depending on economies of scale, or, for an additional capital cost of 5-7%. 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')*

In a post covid society, more people are working from home, and look to live more sustainable lifestyles, making sustainable communities more attractive to homeowners; furthermore, homes meeting higher sustainability standards have been shown to attract a premium as consumers choose to purchase their homes from sustainable-conscious developers. *(CCC: Net Zero, 2019)*

14 | PLANNING AND 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 HGGT website and shared as case studies in a bid to promote the most ambitious projects.

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

SUSTAINABILITY GUIDANCE APPLICATION AREA

The Garden Town comprises development sites both within the Harlow administrative area and within East Hertfordshire District and Epping Forest District. This include:

Gilston Area:

- Located in East Hertfordshire District
- Across 7 villages,
- 10,000 homes in total
- 3,000 built by 2033, a further
- 7,000 to follow post-2033

East of Harlow:

- Located in Harlow and Epping Forest Districts
- 3,350 new homes in total
- 2,600 within Harlow District
- 750 within Epping Forest District

Water Lane Area:

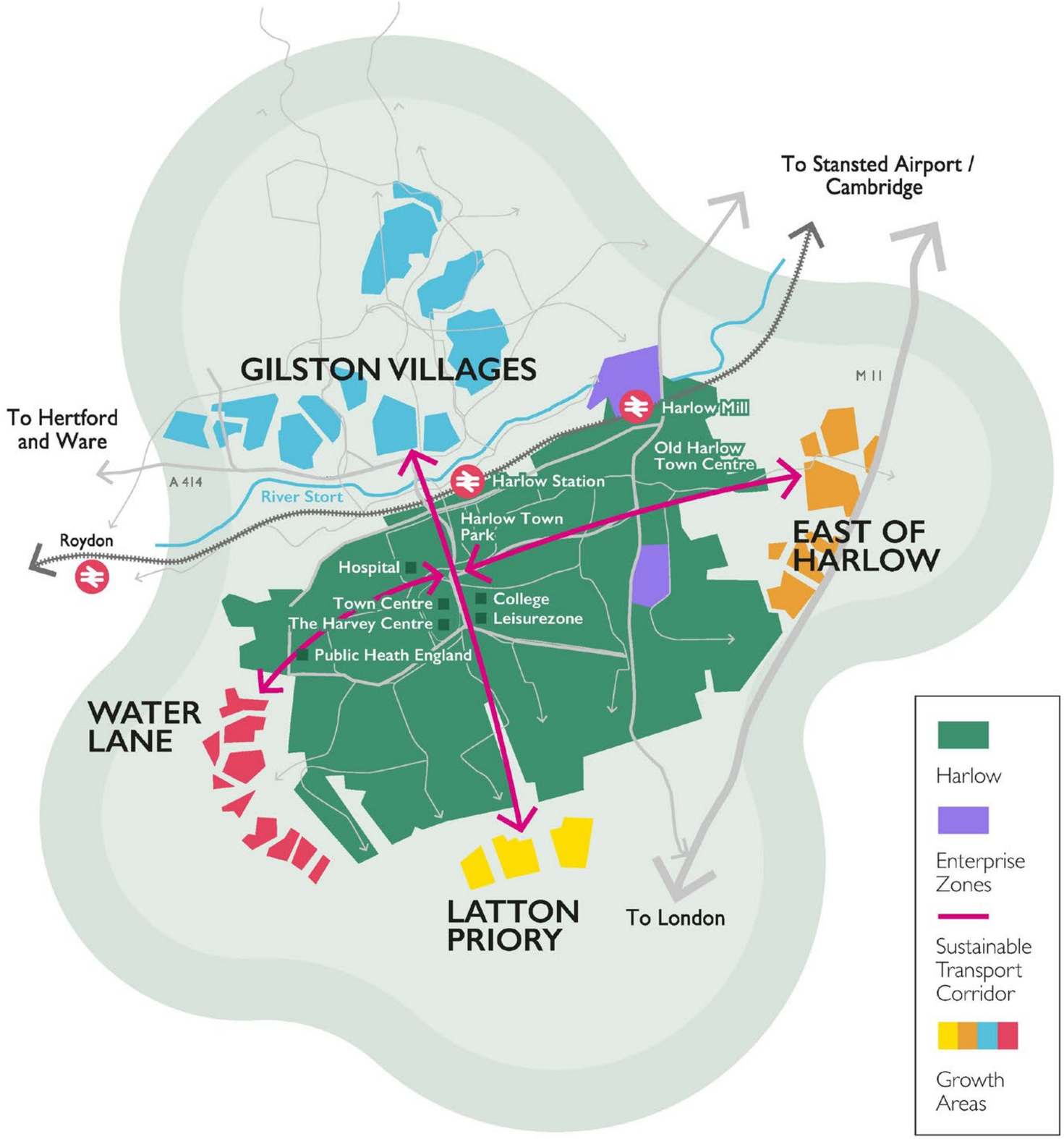
- Located in Epping Forest District
- 2,100 units in total
- Water Lane Area is broken down into two separate areas known as: West of Katherine's and West Sumners

Latton Priory:

- Located in Epping Forest District
- 1,050 units in total

Draft Harlow Local Plan:

A further 21 sites, which together total 1,147 dwellings, are allocated in the draft Harlow Local Plan



Environmental Sustainability

Goal: Net Zero-Carbon by 2030

DESIGN APPROACH: FIRST PRINCIPLES

The following 'First Principles' are to be incorporated to ensure new Garden Town developments are sustainable, and bring practical solutions towards good design. The following First 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 significantly impact on the development of the remainder of the Sustainability sections.

1 | LANDSCAPE-LED DESIGN

Objective:
The three districts are characterised by different types of landscape, and create their own distinct characters. 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 the Garden Town 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 and 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 the Garden Town Sustainable Transport Corridor (STC) and wider networks.

3 | ORIENTATION AND FORM

Objective:
Solar orientation must inform the topography, scale and massing of development at early stages of masterplanning, with south-facing buildings, fenestration, and amenity being orientated 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 Garden Town 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.

While technologies will change, the homes here will carry on for decades - 60+ years, and it is important that strong communities are not broken due to the lack of adaptable design.

DESIGN APPROACH: FIRST PRINCIPLES

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.

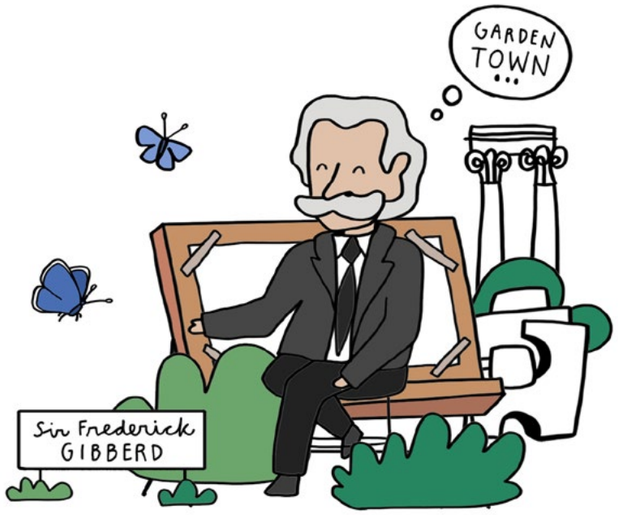
8 | EMBODIED & OPERATIONAL ENERGY

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 | AIR-TIGHT STRATEGY & 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.

RETROFITTING

Note:
Retrofitting of existing buildings has not been addressed in this guidance. This is in anticipation of the influential organisational Design Guide on Retrofitting expected in early 2021. Once released, this document will signpost to industry standards regarding retrofitting.

ENERGY EFFICIENCY & CARBON REDUCTION

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 (i.e. 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, utilising more **renewable technologies**.

Currently (2017 figures), all 3 district councils contribute **558CO_2kt** from the domestic sector only (electricity, gas and other contributions). This accounts for almost a third (27%) of all CO2 contributions in the districts and represents a significant opportunity reduce our carbon impact and adopt **circular economy** principles.

With the decarbonising of the National Grid, achieving net zero-carbon will mean strategic sites must respond to the two 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. **Appendix 2a** highlights the sequence of activities to complete an assessment.

Embodied Carbon Reduction Strategy:

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

Operational carbon Reduction Strategy:

1. Not burning fossil fuels for supply to homes
2. 100% powered by renewable energy i.e.heat pumps
3. Achieving energy performance in line with checklist

Carbon measuring tools (i.e **H\B:ERT**) enable analysis.

KEY LOCAL POLICY & GUIDANCE

HGGT Vision
- Placemaking and Homes: B9, B10, D3
- Landscape & Green Infrastructure: D1, D2, D3, D4
- Sustainable Movement: D6
- The emerging Garden Town Transport Strategy
- Building Futures – Hertfordshire Guide

HDC Local Plan Policy:
- HGT1: Development & Delivery of Garden Town
- PL3: Sustainable Design, Construction & Energy Use
- Harlow Area Action Plan (TC AAP)

EFDC Local Plan Policy:
- SP4(xvii): Highest standards of energy efficiency
- SP5 Garden Town Communities
- DM9: High Quality Design
- DM19: Sustainable Water Use
- DM20: Low Carbon and Renewable Energy

EHDC Local Plan Policy:
- CC3: Renewable and Low Carbon Energy
- DES1 Masterplanning
- DES4: Design of Development (a) & (b)
- HOU8 Self-Build and Custom Build Housing
- CFLR9 Health and Wellbeing
- 11.2 Harlow and Gilston Garden Town

SOCIO-ECONOMIC CO-BENEFITS +

CASE STUDIES (click image to visit website)

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.

Newhall , Harlow
Being highly sustainable with consideration for long-term energy use and incorporating measures to reduce energy use in properties

QUALITY CHECKLIST		Minimum Requirement	Net Zero-Carbon by 2050	Net Zero-Carbon by 2030
En.1	**Operational Energy** (KWh/m²/y)	146 ☐	< 70 ☐	< 0 - 35 ☐
En.2	**Embodied Carbon** ($kgCO_2e/m^2$)	1000 ☐	< 450 ☐	< 300 ☐
En.3	**Space Heating Energy Demand** (KWh/m²/y) of net living space	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 CO_2 emissions** against Building Regulations Part L (2013)?	0-34% ☐	35%-50% ☐	≥ 50% ☐
En.8	For applications greater than 99no. units, what BREEAM Communities Level is met?	Very Good ☐	Excellent ☐	Outstanding ☐
En.9	Thermal Bridging y-value (W/m2K)	0.0051 ☐	0.0039 ☐	0 ☐
En.10	What **Fabric U-Values** has the proposal been designed to meet? W/(m2K)	☐	☐	☐
	External Walls	0.30 - 0.16	0.15 - 0.11	< 0.1
	Floor	0.25 - 0.11	0.10 - 0.08	< 0.07
	Roof	0.20 - 0.13	0.12 - 0.10	< 0.1
	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 2a + 2b**) ☐		
	Attach certification of the above chosen standards, and use 'Statement' page for additional 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. Other **Climate mitigation and adaptation** strategies span the breadth of this document, so this section focuses on the use of renewable energy for our heat supply, as heat demand is estimated at more than 40% of the **energy consumed** across all 3 boroughs.

The nature and scale of the strategic sites make them ideal to ensure that the heating and hot water they generate are **fossil fuel free**, supporting less demand on the national grid.

On-site renewable technologies such as **Heat Pumps, Solar Photovoltaics**, and **Solar Thermals** should be explored for adoption, and paired with each other to provide the greatest benefit to new developments; i.e. heat pumps paired with efficient buildings, and PV's paired with electric charging enabling **sustainable travel**.

Applicants are to use the **LETI Heat Decision Tree** (appendix 3) at concept and developed design stages, to assist them in choosing the most appropriate heating system; where renewable systems should be prioritised over connecting to district heating networks, which depend on fossil fuels.

New Developments should be designed to;

- **Heat Sharing Network**: joining a heat sharing network is 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.

KEY LOCAL POLICY & GUIDANCE

HGGT Vision
- Placemaking and Homes: B9, B10, D3
- Landscape & Green Infrastructure: D1, D2, D3, D4
- Sustainable Movement: D6

HDC Local Plan Policy:
- HGT1: Development & Delivery of the Garden Town
- PL3: Sustainable Design, Construction & Energy Use
- Harlow Area Action Plan (TC AAP)

EFDC Local Plan Policy:
- SP4(xvii): Highest standards of energy efficiency
- DM9: High Quality Design
- DM19: Sustainable Water Use
- DM20: Low Carbon and Renewable Energy

EHDC Local Plan Policy:
- CC3: Renewable and Low Carbon Energy
- DES4: Design of Development (a) & (b)
- Building Futures: Sustainable Design Toolkit

SOCIO-ECONOMIC CO-BENEFITS +

CASE STUDIES (click image to visit website)

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

QUALITY 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 ☐	Electric Heat Pumps / Solar Thermal ☐
Rn.2	What percentage of CO_2 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 government incentivised schemes been taken advantage of? i.e. Non-Domestic Renewable Heat Incentive (RHI)	None ☐	N/A	Non-Domestic RHI ☐
Rn.5	Photovoltaic Energy Demand (kWh/m2/yr)	-854 ☐	-2,563 ☐	-2,563 ☐
Rn.6	Domestic hot water (kWh/m2/yr)	42 ☐	20 ☐	6 ☐
	Please attach Energy Assessment	☐		
	Please attach relevant certification of the above standards you have chosen	☐		
	Please 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 Garden Town. Positive travel choices that enable sustainable living lie at the heart of the **Garden Town's Vision**, **Transport Strategy**, and **Healthy Town Framework**. The three overarching objectives of the HGGT Transport Strategy are:

1. 50% of all trips originating from and ending within the whole Garden Town should be by active and sustainable travel modes, with the same mode share target applying to 60% of trips originating from and ending within the new Garden Communities.

2. Mobility options will be based on a hierarchy of importance: Reduce the need to travel; walking and cycling; public transport; and lastly private vehicle use.

3. Support and encourage a culture of active and sustainable travel ensuring all journeys will be efficient and safe.

Masterplanning for Sustainable Movement should address: **walkable 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); **futureproofing with adaptable technology**; deliveries and servicing; and construction impacts.

Sustainable Transport Corridors (STCs) will be a series of strategic public travel routes through the Garden Town providing inclusive, coherent, safe, direct, convenient and **attractive public and active travel options** that will connect neighbourhoods quickly with key destinations such as the town centre and Harlow Town railway station. The design of these should follow the HGGT STC Placeshaping Principles and Transport User Hierarchy.

'Mobility Hubs' provide transport interchange as well as **social and community focal points**. All new homes should be within 800m (10 minute walk) of a hub and within 400m of a bus stop.
Designs must futureproof for change in travel habits, including reallocating parking and road space, innovation in travel technology, last mile deliveries and **electric charging**.

SOCIO-ECONOMIC CO-BENEFITS +

KEY LOCAL POLICY & GUIDANCE

HGGT Vision & Design Guide
- HGGT Transport Strategy
- HGGT Healthy Town Framework
- HGGT Local Cycling & Walking Infrastructure Plan (LCWIP)
- HGGT STC Placeshaping Principles (draft)
- HGGT Hubs 'How To' Guide (draft)
- HGGT Parking Strategy (emerging)

Essex County Council
- Local Transport Plan 3
- Sustainable Modes of Travel, Speed & Traffic Management Strategies
- Essex Design Guide

Hertfordshire Council Council
- Local Transport Plan 4
- Hertfordshire Active Travel Strategy/Sustainable Modes of Travel Strategy
- Roads in Hertfordshire: A Design Guide

Harlow Local Plan Policy:
- HGT1: Development & Delivery of the Garden Town
- PL3: Sust. Design, Construction & Energy Use
- IN1 Development and Sustainable Modes of Travel
- WE2 Green Wedges and Green Fingers
- Harlow Town Centre Area Action Plan
- Harlow Cycling Action Plan

EFDC Local Plan Policy:
- SP 3 Place Shaping
- SP4: Development & Delivery of Garden Communities in HGGT
- T 1 Sustainable transport choices
- T 2 Safeguarding of routes and facilities
- DM 9: High Quality Design
- DM 22: Air Quality

East Herts Local Plan Policy:
- DES4: Design of Development (a) & (b)
- TRA1 Sustainable Transport
- TRA2 Safe and Suitable Highway Access Arrangements and Mitigation
- TRA3 Vehicle Parking Provision

CASE STUDIES (click image to visit website)

Dunsfold Park Masterplan, Surrey
Designing a walkable village entirely within 10 minutes' walk of the Market Square.

St Chads Development, Essex
Designated as shared surface 'home zones', streets are designed to prioritise pedestrians and cyclists, while reducing vehicular speed.

VeloCity, National Infrastructure Commission
Enriching village life while creating new homes and employment in healthy and socially cohesive places.

QUALITY CHECKLIST		Low Quality		High Quality
Tr.1	Have walkable neighbourhoods been designed as a first principle, based on the HGGT Transport User Hierarchy?	No - vehicle access design prioritised ☐	Yes - transport hierarchy considered ☐	Yes - active travel, connected networks, topography, user hierarchy as design drivers ☐
Tr.2	Have you followed the STC Placeshaping Principles when designing the STC and its transport interchanges?	Not demonstrated ☐	Yes some achieved ☐	Yes - all achieved ☐
Tr.3	Are bus stops and hubs accessible and attractive for new and existing residents? Including regular service.	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.4	Have inclusive design principles / accessibility for all regarding sustainable movement been achieved?	Meets Equalities Act ☐	Inclusive Design Statement provided ☐	Exemplary inclusive design provided ☐
Tr.5	Has a Transport Assessment been provided that clearly demonstrates how the 60% mode split target is being achieved, as defined by the Garden Town?	Yes - minimum TA provided ☐	Yes - ☐	Yes - multi-modal modelling, and roadmap for achieving HGGT targets ☐
Tr.6	Has an assessment been provided against a recognised tool? E.g. Transport for New Homes Checklist/ Healthy Streets Check for Designers/ Healthy Herts evaluation	No ☐	Yes - assessment undertaken ☐	Yes - assessment undertaken and exemplary score achieved ☐
Tr.7	Has a Sustainable Travel Plan been provided? Has Modeshift Stars accreditation been explored?	No ☐	Yes - Sustainable Travel Plan provided ☐	Yes - including behaviour change programme, travel coordinator, monitoring ☐
	Please use 'Sustainability Summary' pages where you are adding any further information			

WATER EFFICIENCY

OBJECTIVES & REQUIREMENTS

The combined challenges and opportunities of growing populations within the Garden Town, changing land uses, the finite supply of water, action is required now to ensure the availability of water for the future without having a detrimental impact on the environment. There is likely to be less water available for future generations and therefore a greater need for water demand management and water efficiency in the area. New development should therefore not lead to an overall increase in demand for water.

The strategy therefore looks for new developments to:

i) **Reduce the risk of flood** through the use of sustainable drainage infrastructure and robust **green infrastructure design** - including the use of biophillic design and permeable hard landscape.

ii) **Minimise use of mains water** by incorporating water saving measures and equipment, and, designing residential development 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

To avoid increased flood risk, and make the most effective use of the existing and planned drainage infrastructure, rainwater should be managed as a valuable resource, rather than a waste product and innovative ways of using water can be incorporated into **community infrastructure**.
There is a drive towards sustainable drainage systems that mimic the way nature manages rainwater. As a result, designing new developments for optimal sustainable water consumption has become even more important, with the Garden Town enabling ambitious targets for water efficiency in all new developments.

Existing homes and workplaces should become more water efficient through metering and water efficiency retrofits.

New developments should embrace **carbon reduction** systems such as a **waste water heat recovery**.

KEY LOCAL POLICY & GUIDANCE

HGGT Vision
- Placemaking and Homes: B9, B10, D3
- Landscape & Green Infrastructure: D1, D2, D3, D4
- Sustainable Movement: D6
- HGGT Watercycle Study 2018
- The emerging Garden Town Transport Strategy

HDC Local Plan Policy:
- HGT1: Development & Delivery of Garden Town
- PL3: Sustainable Design, Construction & Energy Use • PL10: Water Quality, Water Management, Flooding and Sustainable Drainage Systems
- Harlow Area Action Plan (TC AAP)

EFDC Local Plan Policy:
- SP4(xvii): Highest standards of energy efficiency
- DM9: High Quality Design
- DM19: Sustainable Water Use
- DM20: Low Carbon and Renewable Energy

EHDC Local Plan Policy:
- CC3: Renewable and Low Carbon Energy
- DES4: Design of Development (a) & (b)
- Building Futures: Sustainable Design Toolkit
- WAT3 Water Quality and the Water Environment
- WAT4 Efficient Use of Water Resources
- WAT5 Sustainable Drainage

Essex:
- The Sustainable Drainage Systems Design Guide For Essex: Weblink **Here**

CASE STUDIES (click image to visit website)

Waltham Village Square | Rain Gardens
Full of native shrubs and flowers planted in a depression to temporarily hold and soak-in rain water runoff from roofs & driveways

Knostrop Weir, Leeds | Flood Management
Provides three new pneumatically moveable weirs that can be lowered to let floodwater discharge quickly downstream.

Ladywell Fields, Lewisham | SuDS
Creating sustainable drainage and reduce flooding by modifying the river channel with a naturalistic setting incorporating backwaters and wetlands.

QUALITY 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 in the development? e.g. low flush toilets, smaller baths , taps and showers with flow regulators	No ☐	N/A	Yes ☐
W.5	What additional Sustainable Urban Drainage (SUDs) measures have been proposed? (i.e. permeable surfaces, rain gardens, green roofs, ponds/wetlands, soakaways)			
	Please use 'Sustainability Summary' pages where you are adding any further information			

GREEN INFRASTRUCTURE

OBJECTIVES & REQUIREMENTS

The **HGGT Vision** sets out indicators for landscape and green infrastructure: proposals should respond to the distinctive landscape setting; expand and enhance the town's Green Wedge network; improve access to, and the quality of, the surrounding Green Belt; and support a sustainable and biodiverse environment.

The green infrastructure network of the Garden Town and wider area must be considered in an integrated way to meet sustainability, placeshaping and **socio-economic** objectives. Key assets include the Stort Navigation & Stort Valley; the River Lea & Lee Valley; the Green Wedge and Finger network; Harlow Town Park; existing and Ancient woodland including Epping Forest; neighbourhood allotments & green spaces; the proposed Gilston Country Park; proposed Suitable Alternative Natural Green Space (SANGS); new '**Super Greenways**'; sports, play and adventure spaces.

Proposals must be landscape-led from the start and across all design stages, and green infrastructure should be high quality and **multifunctional**, as set out in the **East Herts Gilston Area Charter SPD** and EFDC Green Infrastructure Strategy.

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. Local species should be specified to ensure long-term resilience.

Design of streetscapes and amenity spaces, with urban greening such as street trees, pocket parks, garden hedgerows, Super Greenways, greens roofs and swales, can provide placeshaping benefits as sociable streets as well as contributing to climate resilience, through biodiversity enhancement and mitigating overheating.

Multifunctional green infrastructure at various scales has an important role to play in **placeshaping, health, wellbeing, and community resilience**. 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.

SOCIO-ECONOMIC CO-BENEFITS +

KEY LOCAL POLICY & GUIDANCE

- HGGT Vision & Design Guide
- HGGT Healthy Town Framework

Harlow Council: Local Plan Policy:
- HGT1: Development & Delivery of the Garden Town
- PL3: Sust. Design, Construction & Energy Use
- PL8: Biodiversity and Geodiversity Assets
- WE3: Biodiversity and Geodiversity
- Harlow Area Action Plan (TC AAP)

EFDC Local Plan Policy:
- SP 3 Place Shaping
- SP 7 The Natural Environment, Landscape Character and Green and Blue Infrastructure
- DM 1 Habitat protection and improving biodiversity
- DM 2 Epping Forest SAC and the Lee Valley SPA
- DM 3 Landscape Character, Ancient Landscapes and Geodiversity
- DM 5 Green and Blue Infrastructure
- DM 6 Designated and undesignated open spaces
- DM9: High Quality Design
- DM 15 Managing and reducing flood risk
- DM 22 Air Quality
- EFDC Green Infrastructure Strategy

EHDC Local Plan Policy:
- DES1: Masterplanning
- DES2 Landscape Character
- DES3 Landscaping
- DES4: Design of Development (a) & (b)
- CFLR1 Open Space, Sport and Recreation
- CFLR2 Local Green Space
- CFLR4 Water Based Recreation
- CFLR9 Health and Wellbeing
- NE3 Species and Habitats
- NE4 Green Infrastructure
- East Herts Gilston Area Charter SPD

Wider Area
- Green Essex Strategy
- Essex Biodiverstiy Action Plan
- Hertfordshire Strategic Green Infrastructure Plan 2011
- Stort Catchment Management Plan
- Green Arc Strategy

CASE STUDIES (click image to visit website)

Ecology & wayfinding: Wealdstone Brook
Integrating placeshaping, wayfinding, and ecological enhancement at.

Community cohesion: Drapers Field
Addresses issues of community cohesion and improvements to health and wellbeing.

Biodiversity in Architecture: Barratt Homes
A progressive approach to wildlife-friendly housing, with 'Swift Bricks' built into homes.

	QUALITY CHECKLIST	Minimum Requirement		Best Practice
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?	0-9% BNG ☐	10-15% 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 yr 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	Have you used recognised tools to assess the value/ quality of green infrastructure? E.g. **Natural Capital Tool**/ **Ecometric**/ **Building With Nature**/ Social Value Calculator	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 ☐	Yes - some assessment ☐	Yes - UKGBC Playbook followed ☐
Gr.7	Has green infrastructure been proposed at different scales, with clarity on how its quality and quantity reinforces the Garden Town Vision?	Different scales not explored ☐	Yes - different scales shown, roles/ function undeveloped ☐	Yes - small, medium and large GI shown, with qualities and roles defined ☐
	Please attach your **BNG Report** Please use 'Sustainability Summary' pages where you are adding any further information			

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.

The strategic sites in the Garden Town are to be designed to reduce construction & **operational waste** and enable ease of access for future occupants to recycle and reduce waste. This can be encouraged through adopting a circular economy approach (including the use of modern methods of construction (MMC) & Design for Manufacture and Assembly (DfMA)processes) 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
- Minimise the quantities of other resources used: including **energy**, **water**, and land
- Source materials responsibly and sustainably: including all materials to be reusable

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:

- Construction, demolition & excavation waste
- Operation & Municipal waste

A **Circular Economy Statement** should be provided to demonstrate chosen strategy.

SOCIO-ECONOMIC CO-BENEFITS +

KEY LOCAL POLICY & GUIDANCE

HGGT Vision
- Placemaking and Homes: B9, B10, D3
- Landscape & Green Infrastructure: D1, D2, D3, D4
- Sustainable Movement: D6

HDC Local Plan Policy:
- HGT1: Development & Delivery of the Garden Town
- PL3: Sustainable Design, Construction & Energy Use
- PL9: Pollution and Contamination
- Harlow Area Action Plan (TC AAP)

EFDC Local Plan Policy:
- SP4(xvii): Highest standards of energy efficiency
- DM9: High Quality Design
- DM19: Sustainable Water Use
- DM20: Low Carbon and Renewable Energy
- DM 7 Heritage Assets
- DM 8 Heritage at Risk
- DM 11 Waste recycling facilities on new development
- DM 18 On site management of waste water and water supply

EHDC Local Plan Policy:
- CC3: Renewable and Low Carbon Energy
- DES4: Design of Development (a) & (b)
- HA1 Designated Heritage Assets
- HA2 Non-Designated Heritage Assets
- HA3 Archaeology
- HA4 Conservation Areas
- HA7 Listed Buildings

CASE STUDIES (click image to visit website)

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.

	QUALITY 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	The new buildings are circular-by-design to what amount?	20% ☐	40% ☐	65% ☐
CE.5	How much construction, demolition and excavation (**CD&E**) **waste** will be recycled? This is to be incorporated in your Construction Management Plan	☐	☐	≥ 95% ☐
CE.6	How much **municipal waste** (operational waste) will be recycled or composted vs sent to landfill or energy recovery?	☐	☐	65% : 35% ☐
CE.7	How much of the materials used are '**reusable**'	☐	☐	80% ☐
CE.8	How much of the materials used are '**reused**'	☐	☐	50% ☐
CE.9	How much biodegradable and recyclable waste will be **diverted to landfill**?	☐	☐	0 ☐
	Please attach the **Design Stage Circular Economy Statement** (see guidance Here)			
	Please use 'Sustainability Summary' pages where you are adding any further information			

WASTE MANAGEMENT

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.

The strategic sites in the Garden Town 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.

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
- Minimise the quantities of other resources used: including energy, water, and land
- Source materials responsibly and sustainably: including all materials to be reusable

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:

- Construction, demolition & excavation waste
- Operation & Municipal waste

A **Circular Economy Statement** should be provided to demonstrate chosen strategy.

KEY LOCAL POLICY & GUIDANCE

HGGT Vision
- Placemaking and Homes: B9, B10, D3
- Landscape & Green Infrastructure: D1, D2, D3, D4
- Sustainable Movement: D6

HDC Local Plan Policy:
- HGT1: Development & Delivery of the Garden Town
- PL3: Sustainable Design, Construction & Energy Use
- PL9: Pollution and Contamination
- Harlow Area Action Plan (TC AAP)

EFDC Local Plan Policy:
- SP4(xvii): Highest standards of energy efficiency
- DM9: High Quality Design
- DM19: Sustainable Water Use
- DM20: Low Carbon and Renewable Energy
- DM 7 Heritage Assets
- DM 8 Heritage at Risk
- DM 11 Waste recycling facilities on new development
- DM 18 On site management of waste water and water supply

EHDC Local Plan Policy:
- CC3: Renewable and Low Carbon Energy
- DES4: Design of Development (a) & (b)
- HA1 Designated Heritage Assets
- HA2 Non-Designated Heritage Assets
- HA3 Archaeology
- HA4 Conservation Areas

SOCIO-ECONOMIC CO-BENEFITS +

CASE STUDIES (click image to visit website)

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

QUALITY 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**?	☐	☐	☐
W.2	How much of the materials used are non-toxic?	☐	☐	☐
W.3	How much of the materials used can be **easily extracted, recycled, and manufactured**?	☐	☐	☐
W.4	The new buildings are circular-by-design to what amount?	☐	☐	☐
W.5	How much construction, demolition and excavation (**CD&E**) **waste** will be recycled? This is to be incorporated in your Construction Management Plan	☐	☐	☐
W.6	How much **municipal waste** (operational waste) will be recycled or composted vs sent to landfill or energy recovery?	☐	☐	☐
W.7	How much of the materials used are '**reusable**'	☐	☐	☐
W.8	How much of the materials used are '**reused**'	☐	☐	☐
W.9	How much biodegradable and recyclable waste will be **diverted to landfill**?	☐	☐	☐
	Please attach the **Operational Waste Strategy** promoting reuse & recycling			
	Please use 'Sustainability Summary' pages where you are adding any further information			

POLLUTION: CLEAN AIR QUALITY

OBJECTIVES & REQUIREMENTS

In this section, pollution focuses on air pollution as it acts as the single largest influence on air quality to human health in the districts. This section should not be used as a substitute for work otherwise undertaken in any normal full planning application.

Every new development will have an impact on air quality, usually by increasing emissions from buildings or from traffic generation. The links between poor air quality, human health, and the environment are well documented and is classed by Public Health England as a major public health risk alongside cancer, heart disease and obesity. **Air pollution causes more harm than passive smoking and is responsible for the early deaths of an estimated 40,000 people in the UK**. Air Pollution arises from sources and activities including; traffic and transport, industrial processes, domestic and commercial premises, energy generation, agriculture, waste storage/treatment and construction sites.

This section adopts Public Health England's 2019 "**net health gain**" principles to improve outdoor air quality and public health. New developments should adopt a strategic approach, in line with each Boroughs' Air quality policy and guidance, including any requirements on Air Quality Management Areas, Local Air Quality Action Plan, and development Air Quality Assessments.

Clean by Design : Better by Design:
The following net health gain principles should be incorporated in design 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 and low-emission travel options** (EV's)
3. **Not siting buildings with vulnerable users** (i.e. schools, nurseries, care homes) in areas where pollution levels are likely to be higher.
4. Incorporate **Clean Air Zones in larger developments**
5. Avoid creating 'street canyons' which encourage pollution to build up
6. Incorporate **green infrastructure** to promote carbon and pollution sequestration
7. Orientate and design buildings to **rely less on heating and cooling systems**
8. Siting living accommodation away from roadsides
9. Incorporate **whole-house ventilation systems for good indoor air quality**

KEY LOCAL POLICY & GUIDANCE

HDC Local Plan Policy:
- HGT1: Development & Delivery of the Garden Town
- PL3: Sustainable Design, Construction & Energy Use
- PL9: Pollution and Contamination
- Harlow Area Action Plan (TC AAP)

EFDC Local Plan Policy:
- SP4(xvii): Highest standards of energy efficiency
- DM9: High Quality Design
- DM19: Sustainable Water Use
- DM20: Low Carbon and Renewable Energy
- DM 22 Air Quality

EHDC Local Plan Policy:
- CC3: Renewable and Low Carbon Energy
- DES4: Design of Development (a) & (b)
- Building Futures: Sustainable Design Toolkit
- EQ4 Air Quality

ASSURING PERFORMANCE

OBJECTIVES & REQUIREMENTS

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

Addressing the performance gap in new homes and buildings is critical, as this affects the quality of new homes through; residents comfort in terms of poor **thermal comfort**, **indoor air quality**, health challenges such as **respiratory issues**. Furthermore, a poor performing building leads to higher energy bills due to poor building fabric, and exasperating challenging health conditions.

Findings from studies undertaken by **Innovate UK** and the **Zero Carbon Hub** consisting over 300 homes, results showed that none met their intended performance targets when tested, with the majority falling even short of Part L and Part F of the Building Regulations by a margin of over 50% post-completion.

The main challenges found in the studies are **highlighted in the green box**, and design teams and applicants are therefore required to undertake Post Occupancy Evaluation (PoE); assessing both performance standards and quality of life, to address these issues.

All major developments will therefore be required to monitor and report on their actual **operational energy** performance in order to close this performance gap and meet the net zero carbon by 2030 targets committed to by each partner authority.

A template PoE form can be found in **Appendix 8** and should be used to show 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 assessment**

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

PRIORITY ISSUES IN ASSURING PERFORMANCE:

1. Energy Literacy
2. Improving Quality Output
3. Demonstrating Performance
4. Evidence Gathering & Dissemination

Social & Economic Sustainability

Goal: Enabling integrated communities

INTRODUCTION

OBJECTIVES & REQUIREMENTS

This section looks at the direct impacts of places and people. Specifically, this section deals with how new developments on the strategic sites (The East of Harlow site, Gilston Villages 1-7, Waterlane, Latton Priory) will affect the existing diverse communities they connect to.

Designing for Social Sustainability requires a collaborative approach between the private and public sector in order to create new communities that thrive. With the scale and pace of new development, we must ensure that we are building communities that are socially, and economically, as well as environmentally sustainable, and critically, that reflect the needs of existing communities. The Draft Harlow Town Centre Area Action Plan must be referred to in order to knit existing community requirements with new community ambitions.

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 therefore focuses on the issues raised in the HGGT Healthy Towns Framework.

The checklist in this section is designed as a Social Sustainability Toolkit resource for Harlow - aimed at everyone involved in planning, designing and developing new housing in Gloucestershire.

Questions have been designed with the specific aim that more can be done to turn new housing developments into flourishing communities that support all residents to thrive.

Incorporating the necessary 'community ingredients' that enable communities to thrive and that boost individual wellbeing.

Community Ingredients cut across different stages of developments including:

1. **Planning & Design**
2. **Construction & Occupation**
3. **Long-term Stewardship**

In implementing the following Socio-Economic Sustainability Principles, developments ready themselves for strong communities that are well-integrated to the

KEY LOCAL DOCUMENTS TO BE CONSIDERED

NHS Healthy New Towns:
Design, Deliver and Manage

Harlow Council:

- **Draft Harlow Town Centre Area Action Plan**
- Harlow Health & Wellbeing Partnership Strategy
- Harlow Economic Development Strategy
- Livewell Essex
- Harlow Agewell Guide
- HGGT Infrastructure Delivery Plan (IDP)
- HGGT Vision
- HGGT Design Guide
- HGGT Transport Strategy
- HGGT Healthy Towns Framework
- HGGT Stewardship Commission
- **Essex & Hertfordshire Digital Innovation Zone**
- **Gilston Area Charter**
- Harlow Health and Wellbeing Strategy
- EFDC / HDC / EHDC Statement of Community Involvement (SCI)
- **Harlow Sculpture Town**
- **EFDC Youth Projects interactive map**
- **Visit Epping Forest**
- EFDC Green Infrastructure Strategy
- **NHS Health New Towns**
- **The Essex Map**
- etc

Herts & Essex Community Farm.
Photo credit: H&E Community Farm

TBC

TBC

Herts & Essex Community Farm.
Photo credit: Harlow Livewell Campaign

HEALTH & WELLBEING

OBJECTIVES & REQUIREMENTS

To promote a **healthy lifestyle**, active travel should be encouraged and invested in, including ensuring **good accessibility to** sustainable transport and transportation; 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.

The **Harlow Health & Wellbeing Strategy** highlights the following key priorities that should be embedded in new developments:

1. Early Help and Startwell
2. Bewell, Staywell, Workwell
3. Agewell
4. Physical Activity and Mental Health

Additional information on other partners in Essex can be found on the **Livewell website** and **Agewell Guide**.

The following actions are therefore required from all new developments:

- Look for how this new development can increase physical activity, active living, active travel, and sport - refer to the Green Infrastructure page in this Guidance.
- Promote mental health and wellbeing through clear connections to existing support services (pop-out to list these)
- Encourage older people to "Agewell" by living independent lives through increased community support and reduced winter pressures
- Support children and young people through "Startwell" by incorporating access to affordable activities such as outdoor gyms, community allotments, travelling farms, and urban farming - helping to grow local fruits & vegetables - which also allow them to Eatwell.
- Incorporating flexible workspaces such as co-working, as part of the social infrastructure in new developments to help residents Workwell, particularly in light of pandemics like Covid-19 which will change the way we work moving forward.

VOICE & INFLUENCE

This involves **governance structures** to represent existing residents and engage new ones in **shaping local decision-making and stewardship**.

RESILIENCE & ADAPTABILITY

Provision of flexible forward-planning; including housing, **infrastructure, and services** that can **adapt over time**; and the incorporation of meanwhile use of buildings and public spaces.

COMMUNITY STRENGTH & SOCIAL INFRASTRUCTURE

OBJECTIVES & REQUIREMENTS

Ensuring the **existing social fabric is protected** from disruption, and can benefit from new neighbouring development through shared spaces, collective activities and social architecture to **foster local networks, belonging and community identity**. A strong sense of local ownership; ensuring **new communities are well-integrated** into the surrounding area, including utilising critical measures such as stakeholder engagement and post-development governance; ensuring the social infrastructure to promote **thriving social networks**; and a diversity of building and non-building uses and tenures.

Incorporating the right (**formal and informal) amenities** to enable **social inclusion**. This section focuses on applicants having a thorough understanding of the local community. Applicants are therefore expected to undertake meaningful engagement with the local communities, particularly those closest to the relevant strategic site, ensuring members, local charity groups, local networks' comments are taken on board and responded to. The applicant will need to demonstrate what stakeholder engagement have been undertaken, beyond the requirements of the Statement of Community Engagement requirements. The Garden Town undertook high-level engagement and an initial list of stakeholders to be engaged can be found using the The Essex Map.

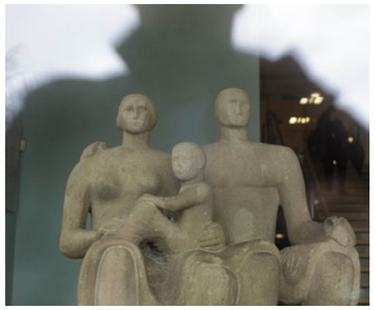
Development should tie into, and extend the rich art culture of Harlows' sculptural town - including engagement with the Harlow Art Trust.

Discover Harlow should be engaged through the development of communities; and can highlight key existing local businesses, organisations, and individuals who can share insight to the needs of Harlow residents.

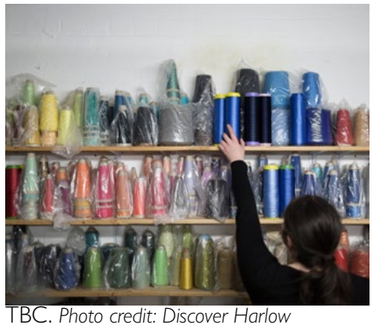
Additionally, documentation, including those found in the HGGT Infrastructure Delivery Plan (IDP), Harlow Infrastructure Delivery Plan, EFDC Infrastructure Delivery Plan, EHDC Infrastructure Delivery Plan; should be referred to and addressed in accordance with the infrastructure needs associated with planned housing and employment growth for each strategic site. Within the documents, these have been prioritised as:

- Critical
- Essential
- Desirable

Developments should therefore highlight what infrastructure will be provided alongside contributions to ensure a holistic approach to



Henry Moore; Harlow Family Group: part of the extensive public art collection in Harlow. *Photo credit: Discover Harlow*



TBC. *Photo credit: Discover Harlow*

Harlow community tree planting day. *Photo credit: Harlow Council*

Harlow hatches used during covid-19 to respond to community needs. TBC.

TBC. *Photo credit: Discover Harlow*

TBC. *Photo credit: Discover Harlow*

TBC. *Photo credit: Discover Harlow*

TBC. *Photo credit: Discover Harlow*

ECONOMIC GROWTH & JOB CREATION

OBJECTIVES & REQUIREMENTS

This theme focuses on outcomes including local residents having comfortable **homes that are affordable to operate**; **thriving local businesses**; decent jobs for local people, including hard to reach groups; long-term employments for skilled local labour. But also, embedding the fabric necessary to **promote long-term growth** and development opportunities and develop new skills, including the incorporation of principles found in the Essex & Hertfordshire Digital Innovation Zone (DIZ); and specifically, in the DIZ Strategy.

Harlow Council have been successful in developing business ___ as highlighted in Harlow's Economic Development Strategy planned for the next 5years.

Economic priorities and Objectives:

Business & Jobs:

Delivering on these priorities will lead to the following outcomes:

- Securing more investment and jobs from key industries such as Life Sciences, MedTech, ICT & digital and Aerospace.
- More jobs and investment by businesses that are part of the supply chain of key industries.
- Continued growth in the business base.
- A healthy business start-up and survival rate.
- Young people and adults gaining entrepreneurial skills and experience to help with future career success and entrepreneurship.

Place:

Delivering on these priorities will lead to -

- An outstanding location and environment for businesses, particularly those where Harlow has existing strengths - including ICT, Advanced Manufacturing and Life Sciences industries.
- Attract and retain more jobs in Harlow.
- A world class Public Health Campus.
- 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.
- A vibrant, inclusive Town Centre that attracts and retains existing and new residents and workers and where expenditure and footfall increases.

People:

SOCIO-ECONOMIC CHECKLIST

QUALITY CHECKLIST

For each response, describe design responses within the Sustainability Statement and/or identify details on your plans (250no. words / question max).

Se.1	Has an **audit of what already exists (social mapping) in the local area** (shops, parks, school, pubs, playspace) been undertaken? What was the outcome and how has this been reflected in proposals? Use of the Essex Map offers a good tool to assist with finding local services, groups, and activities available in the local area.
Se.2	Demonstrate how proposals have been informed by the **key stakeholders (Appendix 4)** to contribute to a more integrated Harlow community. (include in response: the stakeholders you have engaged with, the findings from these sessions, and how you have implemented stakeholder recommendations). Use of the Essex Map offers a good tool to assist with finding local services, groups, and activities available in the local area.
Se.3	Demonstrate how the **socio-economic needs** identified in this section has been implemented in your proposal. (include the ease of accessibility for existing Harlow communities to use new facilities and networks). Use of the Essex Map offers a good tool to assist with finding local services, groups, and activities available in the local area.
Se.4	What **early wins / meanwhile uses** are planned for existing Harlow residents during construction stage of strategic sites? And how are they to be implemented?

QUALITY CHECKLIST

Se.5	Demonstrate how your proposal responds to, and has been impacted by the list of **key documents (Appendix 5)** highlighted in this section. (include list of documents used and key findings from each)
Se.6	Demonstrate how your proposal physically and socially supports the success of Harlow Town Centre, and network of existing local centres. (identify the existing local centres and their potential relationships with the new centres in this development)
Se.7	Demonstrate how the HGGT Economic Growth Strategy have been incorporated in this scheme through; design stage, construction stage, and post-completion (identify what jobs have been created / will be created through this development)

ADDITIONAL CASE STUDIES

Manor House Development Trust
A community centre managed by MHDT, a resident-led social enterprise, which uses the space to provide art programmes, employment and workshops

The Big Lunch (Eden Project)
The Big Lunch is an annual national event where people organise lunch with their neighbours, at home or in the street.

Social infrastructure: enabling social inclusion
A research inquiry into the role of social infrastructure in enabling social integration and supporting inclusive growth for communities.

Submission:

1. Quality Checklist

(SUBMISSION OF: ENVIRONMENTAL & SOCIO-ECONOMIC PAGES)

2. Sustainability Statement

(ANY ADDITIONAL INFORMATION)

SUBMISSION

1. Alongside each category Quality Checklist, ensure the following have been completed as part of the development application.

	LIST OF SUBMISSION ATTACHMENTS	
	Energy Efficiency & Carbon Reduction (go to page)	
1	Whole life carbon Assessment	☐
	Renewable Energy (go to page)	
2	Energy Assessment	☐
	Sustainable Movement (go to page)	
3	Transport Assessment	☐
	Water Efficiency (go to page)	
4	Sustainable Urban Drainage Strategy	☐
	Green Infrastructure (go to page)	
5	Biodiversity Net Gain Report	☐
	Circular Economy (go to page)	
6	Design Stage Circular Economy Report	☐
	Waste Management (go to page)	
7	Operational Waste Strategy	☐
	Assuring Performance (go to page)	
8	Post-Occupancy Report (to be submitted to LPA at pre-occupation stage)	☐
	Socio-Economic Sustainability (go to page)	
9	List of community consultees / stakeholders engaged throughout design process	☐

NB: all of the above assessment / reports will be expected to submitted to LPA again at post completion / pre-occupation stage. The reason for this is to ensure that buildings and communities are being completed to the specified design standards; ensuring joyful communities and reducing the performance gap prevalent in the industry.

2. In addition to the Quality Checklists, include any additional sustainability strategies or comments which have not been covered by the checklists:

Glossary

[GLOSSARY:
TO BE COMPLETED]

[GLOSSARY:
TO BE COMPLETED]

Appendices

APPENDIX 1: CLIMATE EMERGENCY DECLARATIONS

EPPING FOREST DISTRICT COUNCIL

Declaration: Climate Emergency

Date of Declaration: 19th September 2019

Motion Link: Here

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°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."

EAST HERTS DISTRICT COUNCIL

Declaration: Climate Change Action

Date of Declaration: 24th July 2019

Motion Link: Here

Cllrs: Graham McAndrew

Adopted Motion / Commitment:
1. Join with other councils in recognising and declaring formally the necessity to do everything within the authority's power to reduce its impact on the climate and moreover do everything we can in supporting the whole of East Herts District to become carbon neutral by 2030,

2. Develop an ambitious sustainability strategy for reducing the council's own emissions, with an objective that the council becomes carbon neutral by 2030,

3. Work with national and regional partners to ensure that where at all possible we support climate friendly planning and building control regulations and seek where possible to include the very best measures into the Local Plan to minimise any negative impact on the environment,

4. Call on National Government for more powers and resources to make this pledge possible, and ask the council's Leader to write to the Secretary of state for Environment, Food and Rural Affairs to this effect,

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

6. Take account of climate impacts within existing decision-making processes,

7. Set up an Environmental and Climate Forum, in line with the recommendations from the Task and Finish Group, which were approved by this Council on 5th March, 2019,

8. The Environmental Forum to monitor progress regularly, and to report back,
9. Commit to making available the appropriate training to members and officers to promote carbon neutral policies in order to achieve these aims.

HARLOW DISTRICT COUNCIL

Declaration: Climate Emergency

Date of Declaration: 11th July 2019

Motion Link: Here

Cllrs:

Adopted Motion / Commitment:
1. Reducing the council's net carbon emissions as far as possible and reducing the carbon footprint at a greater rate than it is already committed to do so. Other actions include:

2. Planting 1,000 new trees and hedgerows across the town in the next year.

3. Encouraging the council's trading company HTS (Property & Environment) Ltd to switch over from petrol and diesel vehicles, plant and machinery to electric power vehicles, plant and machinery.

4. Encouraging HTS to source battery technology for its electric vehicles from companies who ensure environmentally friendly lithium mining techniques.

5. Reaffirming the council's commitment to the Garden Town development's principles of sustainable transport.

6. Eliminating the use of single use plastics across all public council buildings by January 2020 ahead of the national implementation date of April 2020.

7. Actively promote schemes to encourage children to walk to school such as the Walking Bus initiative and WOW (walk on Wednesdays).

8. Installing electric car charging points across all council car parks within the next five years where possible.

9. Developing a strategy which looks at the feasibility of:
i) Installing photovoltaic panels on all public council buildings within the next two years where possible; and
ii) New council built houses having a minimal carbon footprint; and
iii) An action plan is created to focus on reducing the impact of day-to-day living on the environment beyond that caused by greenhouse gas emissions.

HERTFORDSHIRE COUNTY COUNCIL

Declaration: Climate Emergency

Date of Declaration: 16th July 2019

Motion Link: Here

Cllrs: David Williams

Adopted Motion / Commitment:
Hertfordshire County Council's sphere of influence is broad with the ability to influence carbon emission reductions, improve air quality, promote energy efficiency, seek more sustainable sources of energy, reduce waste production, promote better land use practices, make links to health and wellbeing and influence procurement practices.

The Council's existing initiatives include an Air Quality Strategy, Energy Strategy, a Climate Change Resilient Communities Strategy, a Pollinator Strategy and the Leading by Example working group.

To fortify and coordinate the Council's existing initiatives, contribute to the national imperatives and provide local leadership:

• This Council agrees the declaration of a "Climate Emergency";

• Calls upon the Leader of the Council to commit to the development and implementation of an overarching Sustainable Hertfordshire Strategy. This will set out the policies, strategies, implementation plans and resourcing requirements to embed the values of sustainability into the Council's service delivery, operations, procurement and supplier management as well as the basis for engaging proactively with the County's many stakeholders, including the 10 Local Planning Authorities, who can contribute to a sustainable Hertfordshire; and

• Seek Cabinet approval of an ambitious Sustainable Hertfordshire Strategy by the end of 2019."

3.6 Reporting requirements

The following section specifies the attributes (assumptions, results, etc.) that need to be disclosed and provides a recommended reporting structure for clarity and transparency. Table 12 can be used for reporting the project specific background information. Table 13 provides an organised template for the carbon results to be reported according to the requirements set out below. The cells shaded in purple indicate the minimum results required to be reported for an assessment.

A full whole life carbon assessment report should contain the following:

1 Details of the commissioning body, assessor and verifier if applicable.

2 Date of assessment completion.

3 A purpose statement declaring the drivers and aims of the assessment.

4 A description of the built asset assessed including its main physical and technical characteristics, e.g. number of storeys, floor area, as well as information on its use.

5 Declaration of the Reference Study Period used in the assessment.

6 A clear statement of the scope and boundaries regarding building parts and project life cycle stages accounted for in the assessment. If restricted scopes are used, justification in line with the aims of the study should be provided.

7 A clear indication of the point in time within the project process the assessment was conducted, e.g. early design stage (RIBA Stage 3), on practical completion, etc.

8 Explicit declaration of all sources of carbon data, material quantities and all relevant technical information and references throughout the assessment.

9 The percentage (%) of material quantities covered for each building element category – see 3.2.2.

10 Clear statement and explanation of all assumptions made and scenarios developed to facilitate the carbon calculations such as transport distances and EoL scenarios, including the percentage of quantities covered per building element category.

11 Itemised carbon results, separately per: 1. Building element group – see 3.1.2; and 2. Life cycle stage module – see 3.1.4.

12 Total carbon results for the cradle-to-grave scope [A] to [C] per building element group; both absolute (in $kgCO_2e$ or appropriate metric multiples thereof) and normalised (in $kgCO_2e$/unit of measurement, e.g. m^2) totals should be reported.

13 Total carbon results for each life stage module; both absolute (in $kgCO_2e$ or appropriate metric multiples thereof) and normalised (in $kgCO_2e$/unit of measurement, e.g. m^2) totals should be reported.

14 Aggregated carbon results for the cradle-to-grave scope [A] to [C] for all building element groups; both absolute (in $kgCO_2e$ or appropriate metric multiples thereof) and normalised (in $kgCO_2e$/unit of measurement e.g. m^2) totals should be reported.

15 Modules [A1–A3] (Product stage) can be reported jointly as a single figure.

16 Carbon sequestration figures should be identified separately, but can be included within the total cradle-to-grave figures [A] to [C].

17 Carbonation figures are recommended to be identified separately where applicable, but can be included within the respective applicable modules [A3]; [B1]; [C3]; [C4].

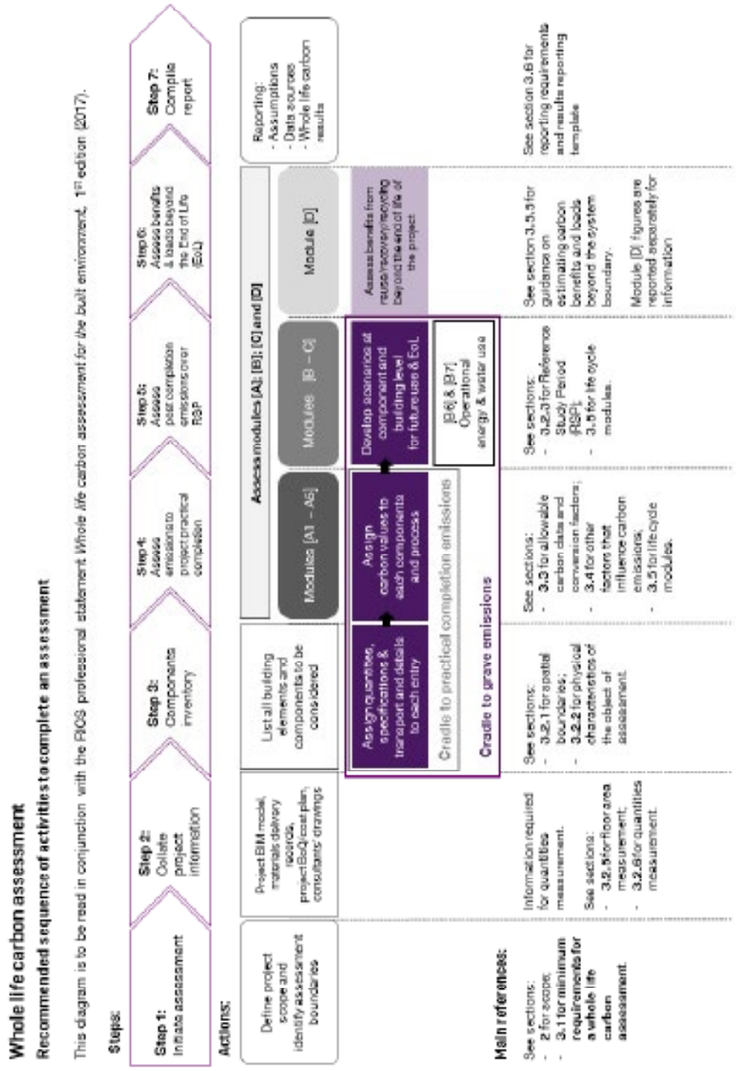
18 The decarbonised figures for modules [B2]; [B3]; [B4]; [B5]; [B6]; [B7] and [D] should be reported separately.

19 Further emissions to be reported separately: 1. Emissions associated with Demolition; 2. Operational emissions for non-building-related systems; 3. Module [D] figures.

The project ID matrix (Table 12) and the results reporting template (Table 13) organise the required items 1–10 and 11–19 respectively in a structured fashion. The minimum results required for submission are highlighted in purple in Table 13.

It is strongly recommended that the outputs of the assessments are entered into the RICS building carbon database to aid the gathering of robust data and subsequent carbon benchmarking for the built environment.

Appendix 1: Whole life carbon assessment flowchart



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APPENDIX 2b: WHOLE LIFE CARBON ASSESSMENT | TABLE 12 & TABLE 13

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 (FFGE)	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

Table 12: The project ID matrix

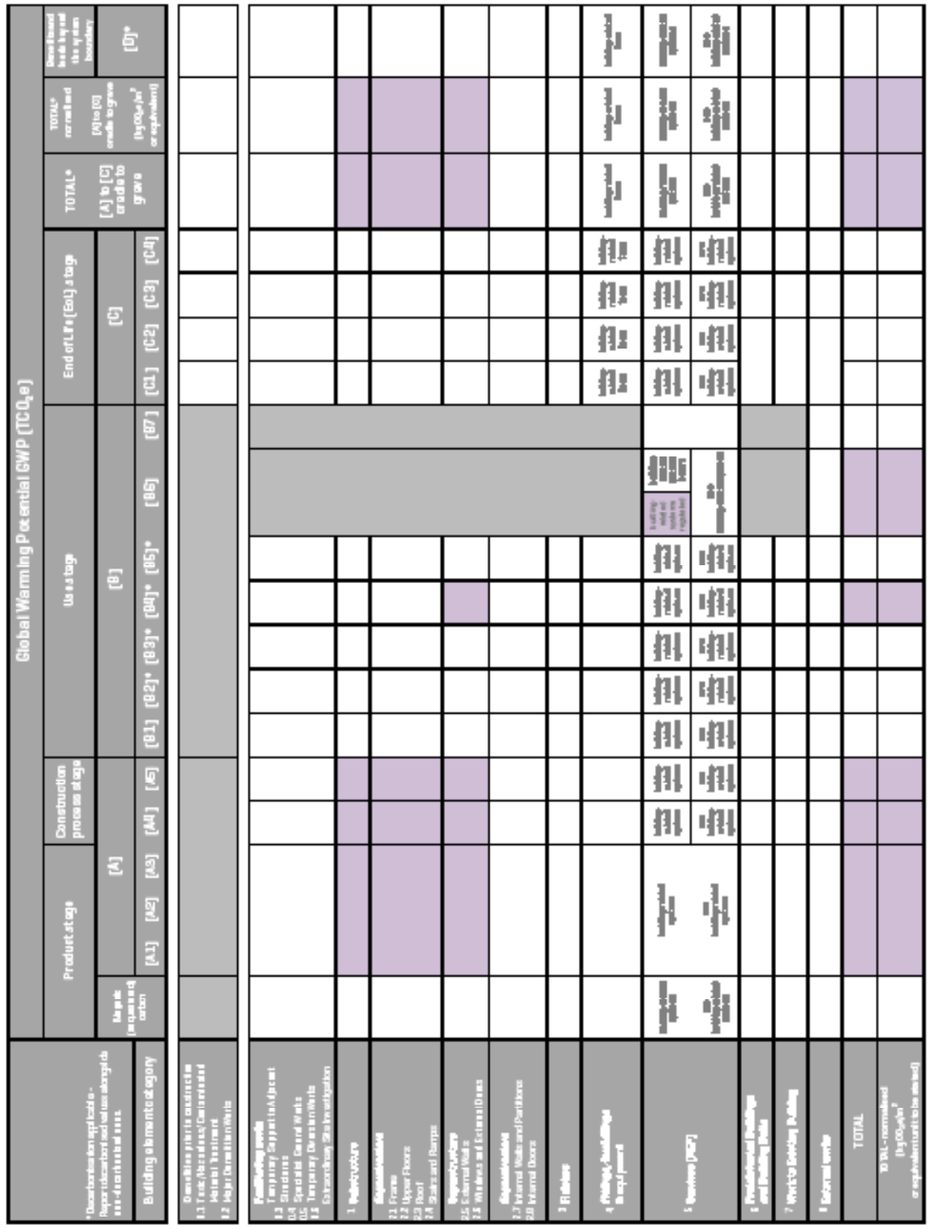


Table 13: Results reporting template 4 Biogenic Carbon Profiling

APPENDIX 3: LETI HEAT DECISION TREE: SEE LETI CLIMATE ENERGY DESIGN GUIDE FOR FULL DETAILS

Heat decision tree

The Heat Decision Tree below highlights the broad range of issues that the heating system selection must address, including such non-carbon issues as avoiding higher energy bills for those least able to pay. Similarly, air quality issues, particularly in urban areas, and countering the increase of future UHI, are likely to preclude combustion processes. Some of these criteria will vary from region to region and hence local planning policy will need to define locally acceptable limits with future trajectories for progressive improvements.

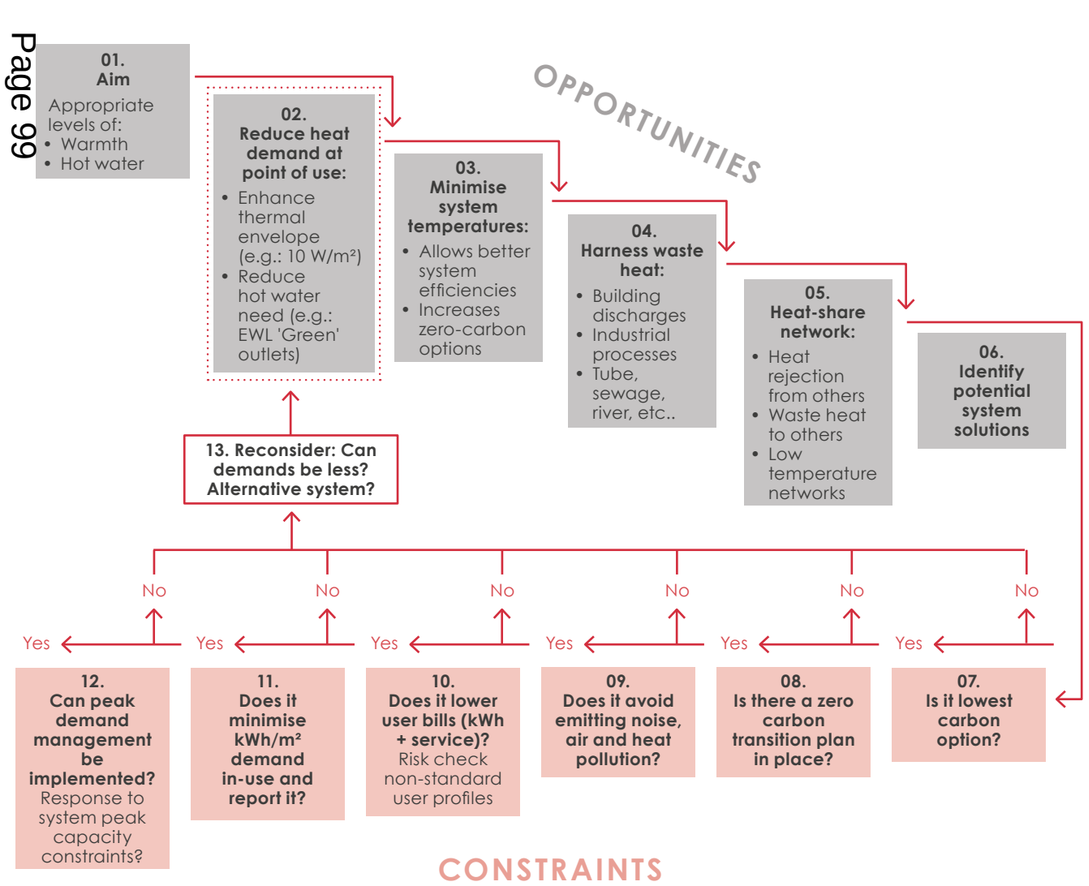


Figure 3.5 - Heat decision tree

Heat system options		Suitability for zero carbon
	Gas boilers / fuel cells	Not zero carbon because of fossil fuel use. Could be zero carbon if fuelled by hydrogen created from renewables.
	CHP leading with gas boiler	Not zero carbon because of fossil fuel use. Could be zero carbon if fuelled by hydrogen created from renewables.
	CHP leading with gas boiler on district heating	Not zero carbon because of fossil fuel use. Could be zero carbon if fuelled by hydrogen created from renewables. Beware of relatively high distribution standing losses when serving low energy buildings.
	ASHP with gas boiler peak loads on district heating	Not zero carbon because of fossil fuel use. Could be zero carbon if fuelled by hydrogen created from renewables. Beware of relatively high distribution standing losses when serving low energy buildings.
	Centralised ASHP on low temperature district heat network with local WSHP upgrade for DHW	Potential for zero carbon once grid decarbonised or if powered by on-site renewables. Beware ASHPs do not operate at their most efficient at high district heating temperatures. District heat network losses reduced if operating at 'ambient' temperature of 18-25°C ideally. Low flow DHW outlets ideally to reduce high temperature demands. Beware lowest COP efficiencies and reduced capacities occur are during coldest weather.
	Exhaust air heat pump (EAHP) with MVHR in each building / dwelling	Potential for zero carbon once grid decarbonised or if powered by on-site renewables. Harnesses only waste heat using 2-stage heat recovery and is dependent on enhanced thermal envelope and low flow DHW outlets.
	Room WSHP units with building centralised ASHP	Potential for zero carbon once grid decarbonised or if powered by on-site renewables. Heat sharing ambient loop water network allows heat recycling within building. Can connect to district heat sharing network so heat rejected from cooling systems is redistributed to heat demand buildings.
	ASHP for DHW	Potential for zero carbon once grid decarbonised or if powered by on-site renewables. Be-ware that COP efficiencies are generally quite poor for generating DHW temperatures. Future CO_2 high pressure refrigerants expected to improve COPs (see Appendix A3.2)
	GSHP per building or on heat share district system	Potential for zero carbon once grid decarbonised or if powered by on-site renewables. District heat network reduced losses if operating at 18-25°C ideally. Better COPs than ASHP in winter, although poorer during summer.
	DX / VRV heat pumps	Potential for zero carbon once grid decarbonised or if powered by on-site renewables. COP efficiencies are generally poor for generating DHW temperatures. Unlikely to be compatible with low global warming potential (GWP) refrigerants. Beware lowest COP efficiencies and lowest capacities during coldest weather.
	Direct electric	Unlikely to be compatible with future renewable grid peak demand restrictions. Likely to increase energy bills significantly. May be suitable as back-up for zero heating buildings and for very low DHW demands.
	Biomass (solid) boilers	Unlikely to be acceptable in urban areas due to fuel emissions. Harvesting and delivery also needs to be zero carbon with comprehensive forestry replenishment.

Figure 3.6 - Heat system options table

Definitions:

DHW	Domestic hot water
CHP	Combined heat and power unit (gas-fired)
ASHP	Air-source heat-pump
WSHP	Water-source heat-pump
COP	Coefficient of Performance of heat-pump
DX	Refrigerant piped between split units (often reverse-cycle)
EAHP	Exhaust-air-source heat-pump
MVHR	Mechanical ventilation heat recovery unit
ZC	Zero carbon

APPENDIX 4: STAKEHOLDER ENGAGEMENT LIST

TEMPLATE: [HGGT COMMUNICATION STRATEGY]

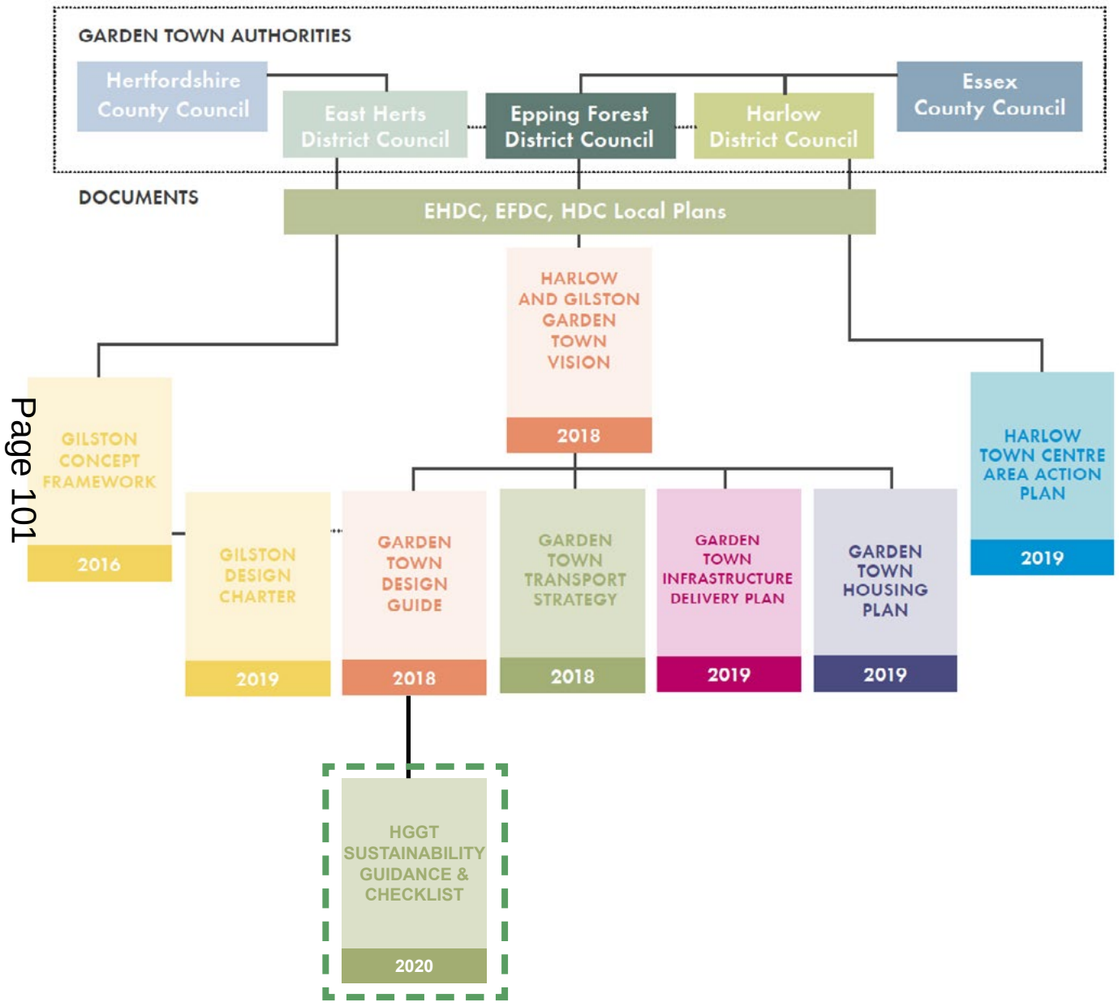
APPENDIX 5: USEFUL ADDITIONAL DOCUMENTATION

GARDEN TOWN PARTNER AUTHORITIES ADDITIONAL DOCUMENTATION

Following local community stakeholder engagement, additional local documentation has been highlighted as useful guides to inform high quality design in the Garden Town. These are listed below.

- Churches (i.e. Frontline Church)
- Harlow Voluntary sector forum
- NHS England Social Prescribing Group
- East Herts Healthy Hubs
- Joint Strategic Needs Assessment (JSNAs)
- Local community health profiles
- Transition Town Handbooks
- United in Kind initiative
- Dementia Action Alliance
- Health & Wellbeing Board
- Research into Ethnic and Culturally Diverse Groups in Harlow (RU)
- WECAN: West Essex Community Action Network

APPENDIX 6: FAMILY OF DOCUMENTS



APPENDIX 7: DRAFT PRE-OCCUPATION PLANNING CONDITION

TEMPLATE: [DRAFT PRE-OCCUPATION CONDITION]

PRE-OCCUPATION CONDITION DRAFT TEXT

Applicants will be expected to demonstrate compliance with all targets they have chosen in submitting this Sustainability Guidance and Checklist.

Satisfaction of meeting these conditions will need to be confirmed by the Partner Authority, prior to the occupation of any new development.

Example Condition Wording:

Submission of evidence-based Sustainability Compliance
Prior to first occupation of each phase of the development, evidence (including post-construction final certification) shall be submitted and approved by the Local Planning Authority, in writing, in accordance with the HGGT Sustainability Checklist and Statement submitted as part of the Planning Approved application. This evidence must be provided as stipulated within the Environmental & Socio-Economic Sections of the Guidance; and include the details relating to all categories including:
Energy Efficiency & Carbon Reduction, Renewable Energy, Sustainable Movement, Water Efficiency, Green Infrastructure, Circular Economy, Pollution, Post Occupancy Evaluation, Health & Wellbeing, Economic Growth & Job Creation, Community Strength & Social Infrastructure.

Reason:
To ensure satisfactory post-completion performance in the interests of resident comfort, in accordance with the guidance contained within the endorsed HGGT Sustainability Guidance & Checklist and relevant Council Local Plan Submission.

APPENDIX 8: POST OCCUPANCY EVALUATION REPORTING

Page 102

TEMPLATE: [POST-OCCUPANCY]

APPENDIX 9: LOCALLY IDENTIFIED SOCIO-ECONOMIC NEEDS

GARDEN TOWN PARTNER AUTHORITIES ADDITIONAL DOCUMENTATION

Following local community stakeholder engagement, additional local documentation has been highlighted as useful guides to inform high quality design in the Garden Town. These are listed below.

- Locally run cafés and green spaces as existing social infrastructure and assets for local community
- Combined Community / Health hubs
- Enabling Lunch Clubs (i.e. Haley Centre and Acton Centre);
- Enabling opportunities to provide catering for older people
- 'Chatter tables' initiatives for tackling loneliness/ integration
- Cultural Centres for minority communities to hold functions and meetings and socialise.
- Opportunities for additional "Wild" swimming - similar to lake swimming sites near Harlow
- Facilities for youths and the elderly age groups
- Facilities for families and teenage children
- Opportunities for skills development
- Opportunities for new communities to feel empowered to integrate with existing local residents

APPENDIX X: CIRCULAR ECONOMY STATEMENT

TEMPLATE:

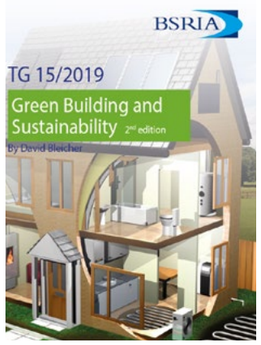
[DESIGN STAGE CIRCULAR ECONOMY STATEMENT]

APPENDIX 10: LIST OF PERFORMANCE STANDARDS ADOPTED

KEY RESOURCES USED TO DEVELOP PERFORMANCE AND QUALITY STANDARDS

This is not a comprehensive list and there are additional documents that were used in the creation of this Guidance.

- **Energiesprong**: Performance requirements: Part L UK vs Energiesprong vs Passivhaus.
- **Zero Carbon Hub**: Closing the Gap between Design & As-built: July 2014
- **Innovate UK**: Building Performance Evaluation Programme: Findings from non-domestic projects | Getting the best from buildings. January 2016

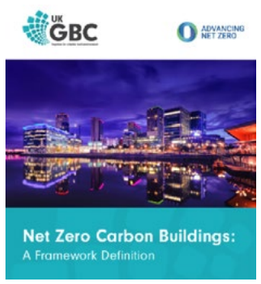


Building Performance Standards

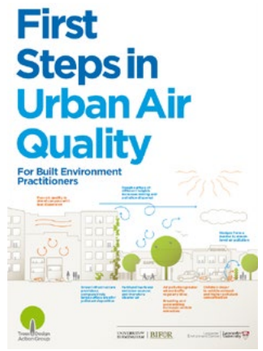
Passivhaus

BREEAM Communities

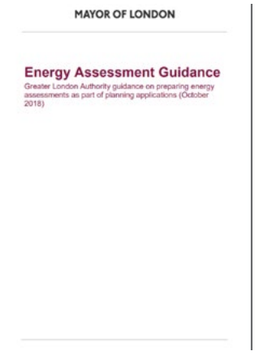
BREEAM HQM



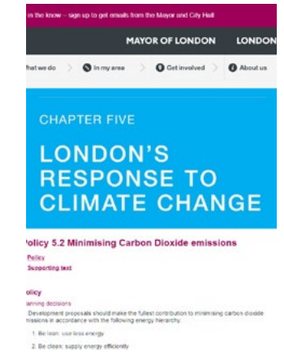
Net Zero Carbon Buildings - UKGBC



First Steps in Urban Air Quality



Guidance on preparing Energy Assessments



London Plan: Energy Hierarchy

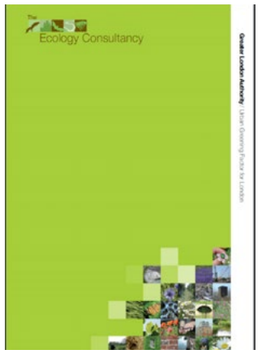
RIBA 2030 Climate Challenge

Future Homes Standard 2020

National Design Guide

London Plan: Be Seen

Transport for New Homes Checklist



Urban Greening Factor (UGF)

Acknowledgements

This document has been designed with the assistance of industry experts over the last new years. The development of the net zero carbon buildings framework was led by an industry task group and informed by a stakeholder consultation on the proposals. UKGBC would like to sincerely thank all task group participants, alongside all involved stakeholders and consultation respondents for their feedback, assistance and contributions over the course of the project.

The task group was supported by the following trade associations, professional institutions and non-profit organisations:

Better Buildings Partnership (BBP)
British Property Federation (BPF)
Building Services Research and Information Association (BSRIA)
Chartered Institute for Building Services Engineers (CIBSE)
Good Homes Alliance
London Energy Transformation Initiative (LETI)
Passivhaus Trust
Renewable Energy Association (REA)
Revo
Royal Institute of British Architects (RIBA)
Royal Institution of Chartered Surveyors (RICS)
Sustainable Energy Association (SEA)
Solar Trade Association (STA)

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HGGT

HARLOW & GILSTON GARDEN TOWN

Agenda Item: XX

Report to: **HARLOW AND GILSTON GARDEN TOWN BOARD**

Title: **Endorsement of Draft HGGT Sustainability Guidance and Checklist for Consultation**

Date: **28th September 2020**

Report Author: **Ione Braddick - HGGT Placeshaping & Engagement Lead**

Enclosures: **Draft HGGT Sustainability Guidance & Checklist**

EXECUTIVE SUMMARY:

The Harlow & Gilston Garden Town seeks to set the agenda for sustainable living through ensuring growth that will be net carbon neutral by 2030 and building strong and integrated communities across new and existing places. The UK Government has declared a Climate Emergency, with all five HGGT Partner Authorities also declaring a Climate Emergency / Action. This Sustainability Guidance & Checklist supports the highest commitment across the Garden Town authorities, which is to become Carbon-Neutral by 2030.

This document provides practical and technical guidance on how relevant sustainability indicators and policies (environmental, social, and economic) in the HGGT Vision, HGGT draft Transport Strategy and partner authorities' Local Plans will be applied to new strategic developments in the Garden Town.

The Guidance & Checklist is to be used by applicants and partner authority officers when preparing and discussing masterplans, pre-application proposals, planning and discharge of conditions applications. This will ensure coordinated and integrated consideration of sustainability principles and targets at an early stage across the Garden Town. The Guidance and Checklist applied to major developments (10 homes and above).

Once consulted upon and with comments incorporated, the document will be endorsed to be a material planning consideration in the assessment of planning applications for developments coming forward within the Garden Town. It will inform pre-application discussions and assist decision-makers in sustainability matters. The document will also be utilised for HGGT Quality Review Panel reviews to help form the basis of environmental and socio-economic sustainability discussions.

RECOMMENDATIONS:

1. **To agree this report;**

2. **To recommend that officers for the three Garden Town local planning authorities use this report at meetings of the East Herts Executive on 6th October 2020, Harlow Cabinet on 15th October 2020 and Epping Forest District Council Cabinet on 19th October 2020 to agree that the draft HGGT Sustainability Guidance and Checklist is published for a six-week period of public consultation from October – December 2020; and**

3. **To note that, following consultation and any subsequent revisions to the document, it is intended that the final HGGT Sustainability Guidance & Checklist will be endorsed as a material planning consideration for the preparation of masterplans, pre-application advice, assessing planning applications and any other development management purposes.**

---

1. Introduction

1.1 The HGGT Sustainability Guidance and Checklist has been prepared in-house, led by the HGGT Sustainability Officer in the HGGT Quality Design workstream (now

Placeshaping & Engagement Workstream) with input from all partner authorities and external expertise where appropriate. The Guidance and Checklist is intended to provide practical and technical guidance for applicants and officers, in relation to environmental, social and economic sustainability within the Garden Town.

1.2 The Harlow & Gilston Garden Town seeks to set the agenda for sustainable living through ensuring growth that will be net carbon neutral by 2030, and building strong and integrated communities across new and existing places. The UK Government has declared a Climate Emergency, with all five HGGT Partner Authorities also declaring a Climate Emergency / Action. This Sustainability Guidance & Checklist supports the highest commitment across the Garden Town authorities, which is to become Carbon-Neutral by 2030.

1.3 The Guidance and Checklist relate directly to the principles and indicators within the HGGT Vision, draft HGGT Transport Strategy and Local Planning Authorities adopted and emerging Local Plan policies and SPDs.

1.4 The Guidance and Checklist covers the following topics in a simple format, to enable maximum accessibility, use and consistency:

Introduction

Environmental Sustainability
- Design Approach: First Principles
- Energy Efficient & Carbon Reduction
- Renewable Energy
- Sustainable Movement
- Water Management
- Green Infrastructure & Biodiversity
- Air Quality
- Circular Economy: Waste Reduction
- Assuring Performance

Socio-Economic Sustainability
- Socio-Economic Sustainability: First Principles
- Creating Strong Communities
- Health & Wellbeing
- Voice & Influence

- Social Infrastructure
- Circular Economy
- Economic Growth

Appendices
- HGGT Documents Chart
- Climate Emergency Declarations
- Whole Life Carbon Assessment
- LETI Heat Decision Tree
- Model Planning Condition and Obligations wording
- Post-Occupancy Evaluation Reporting

1.5 The Guidance & Checklist is to be used by applicants and partner authority officers when preparing and discussing masterplans, pre-application proposals, planning and discharge of conditions applications. This will ensure coordinated and integrated consideration of sustainability principles and targets at an early stage across the Garden Town.

2. Process undertaken

2.1 There has been extensive input from officers from all partner authorities into the draft HGGT Sustainability Guidance and Checklist, with a number of rounds of engagement across various services and departments in order to create a holistic and agreed guidance and checklists questions on a broad range of topics. This has included whole-document reviews through the Quality Design workstream, as well as specific topic-focused workshops with relevant officers.

2.2 An early draft of the HGGT Sustainability Guidance and Checklist was reviewed by the Garden Town Quality Review Panel (QRP) on 24th January 2020; the full QRP report is attached as Appendix 'B'. The review was undertaken by the panel chair and two sustainability experts, and particular questions for the panel focused the document's legibility, whether it is sufficiently robust to be implemented by officers and applicants; whether it is ambitious enough; any omissions; and how strong incentives can be incorporated to encourage applicants to aim for 'best practice'.

2.3 The QRP welcomed and supported the aspirations of the document and its layout and clarity, but recommended focusing on where this document could have the most immediate impact – in particular in terms of audience e.g. housebuilders and local authority officers. The panel also recommended being clearer through the RAG checklist on the outcomes being sought, as well as the need for more work on how the guidance would be applied during planning and post-completion. The panel

recommended providing greater emphasis on the importance of masterplanning and placeshaping in achieving sustainable places, and the critical need for training and resourcing for officers to meet sustainability ambitions.

2.4 Expert advice was also commissioned from the UK Green Building Council (UKGBC), through the facilitation of two Sustainability Workshops on 5th February 2020, to review and discuss the draft Guidance and Checklist with over 30 experts in Sustainability in attendance. A summary of recommendations from the UKGBC workshops included; being more bespoke in terms of audience and development type; re-organising the RAG checklists to state achievement of specific targets (e.g. Net Zero Carbon by 2030); using the guidance to facilitate collaboration of developers to achieve sustainable goals; provide clarity on the overlaps between different requirements and sections in the guidance; consider the commissioning of a green infrastructure map, a social value map, and undertaking a detailed assessment of residents' needs across the Garden Town; develop a comprehensive training programme, and; the importance of the Garden Town playing a key role in driving best practice, through coordination, communications, messaging, and awards.

2.5 Engagement with local stakeholders, developers and members has also been undertaken, to enable shaping of the guidance at an early stage. A HGGT Developer Forum to workshop the Guidance and Checklist was held virtually on 7th May 2020, with 29 attendees, two All-Member Workshops have been held on 27th July 2020 and 26th August 2020, and a Socio-Economic Sustainability Workshop with a number of local groups, charities and organisations within the Garden Town was held on the 29th July 2020. Comments and queries from these sessions have been tracked, incorporated and/or responded to within the updated Guidance and Checklist where possible. This has led to a number of clarifications in the document, including in the overarching narrative, to ensure it remains accessible and clear in terms of the sustainability ambitions of the Garden Town, the importance of integration of new and existing residents as a socio-economic sustainability goal, as well as the impact of COVID-19.

2.6 The document has been through a series of iterations to respond to the recommendations and comments received. Given the broad scope of topics, it has also become clear that there are some elements which are beyond the scope of this document, and which will need to be considered for potential future work, such as sustainability advice for retrofit and refurbishment, a wider Landscape Strategy for the Garden Town, and ensuring consistent information and best practice for engagement and integration in the upcoming HGGT Communications Strategy.

2.7 The amended draft HGGT Sustainability Guidance and Checklist is attached as Appendix 'A' and the Board is asked to agree recommendations 1-3 set out at the start of this report.

3. Endorsement and Consultation

3.1 Following endorsement for consultation from the Garden Town Member Board, the draft HGGT Sustainability Guidance and Checklist will be taken to the Garden Town local planning authorities' Cabinets/ Executives ahead of public consultation in October. Subject to the Board agreement, the Cabinets/ Executives of the GT LPAs will be asked to agree that the draft HGGT Sustainability Guidance and Checklist is published for a six-week period of public consultation in October – December 2020; and to note that following consultation and any subsequent revisions to the document, it is intended that the final HGGT Sustainability Guidance and Checklist will be agreed as a material planning consideration for the preparation of masterplans, pre-application advice, assessing planning applications and any other development management purposes.

3.2 Consultation on the Guidance and Checklist will take place over a six week period from October – December 2020. Given current restrictions on in-person engagement due to COVID-19, we will focus on reaching a broad audience primarily through digital and, where possible, non-digital means. The consultation will seek to include:

Digital engagement:

- HGGT Sustainability Guidance and Checklist available for viewing on HGGT website, with links to this from partner authority websites.
- Overview of document via accessible pre-recorded video available for viewing on HGGT website.
- Digital questionnaire / survey available for viewing and completing on HGGT website.
- Staffed online webinars and Q&A for particular stakeholder groups (e.g. Local residents and Community Groups, Developers, Members, Youth Councils, Partner Officers)
- Social Media awareness campaign (via HGGT and partner authorities).
- Notification of consultation via LPA Planning Policy databases and statutory consultees.

Non-digital engagement:

- Limited number of hard copy consultation packs, on request: leaflet/ poster information to provide summary, and link/ QR Code to online document, and to provide hard copy of questionnaire/ survey.

- A COVID-19 secure staffed event within the Garden Town, with a small number of hard copies of the document available for review, if this is considered safe to do so.

3.3 Consultation arrangements will be put in place over the coming month and will be advertised ahead of the consultation, in accordance with the adopted Statements of Community Involvement of the respective local planning authorities.

3.4 The Garden Town is also aiming to simultaneously consult publicly on the HGGT Healthy Town Framework (this consultation was approved by the Board in July 2019). Epping Forest District Council will also be consulting on the draft EFDC Sustainability Guidance documents (Major Developments and Minor Developments) which are aligned in format and scope to the HGGT Sustainability Guidance and Checklist. Attention will be given to explaining these separate documents, their purpose and use, and where they align or diverge.

4. Next Steps

4.1 Once the Sustainability Guidance and Checklists has been finalised and endorsed by the Garden Town Board, following consultation, the next steps will be to:

- Ensure the Guidance and Checklist is embedded into the masterplanning and planning processes for the new Garden Town communities and developments;
- Develop a comprehensive training programme for Officers and Members on the Sustainability Guidance, best practice and robust use of the document.
- Develop Guidance for Retrofit and Refurbishment within the Garden Town, based on the LETI Retrofit Workstream outputs.

Appendices

Appendix 'A' – Draft Sustainability Guidance and Checklist, September 2020
Appendix 'B' – QRP Report on Draft Sustainability Guidance and Checklist, January 2020

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