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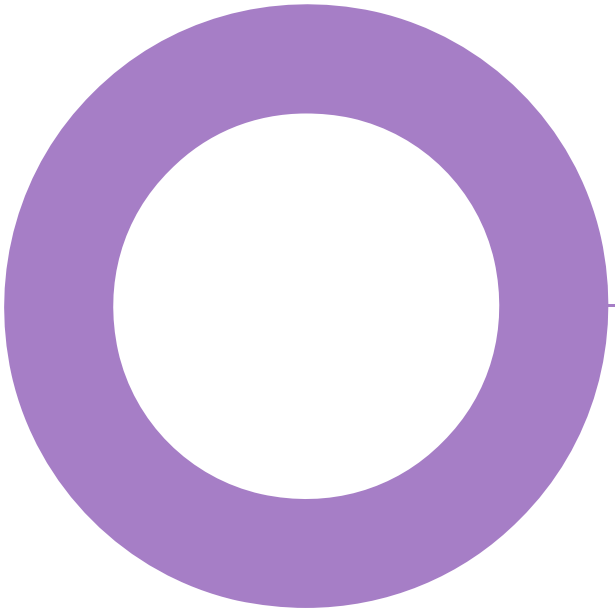
Chigwell.
Epping Forest.
Rangeford.

SUSTAINABILITY
ENERGY AND SUSTAINABILITY STATEMENT

REVISION 01 – 17 JANUARY 2021



Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
0	10/01/2021	Issue in Support of the Planning Application	J. Drane	M. Wilkinson	
01	17/01/2021	Updated with Comments	J. Drane	M. Wilkinson	

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Contents.

1. Introduction.

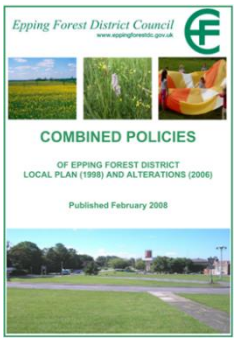
1.1 Purpose of this report.

This document has been produced on behalf of Rangeford to support the Energy and Sustainability strategy for the proposed development on the Land West of Froghall Lane, Chigwell (EPF/1182/18) - Hybrid application requesting full planning permission for an assisted living development comprising of apartments and integrated communal and support facilities; landscaped residents' gardens; staff areas; refuse storage; construction of a new site access; a sustainable urban drainage system; a new sub-station and associated infrastructure and services, and outline planning permission for a 0.45 hectare extension of the cemetery.

This document supersedes the previous energy and sustainability statement provided as part of the submission following comments from the planning department. This document draws on the narrative of current national, regional, local policy and UK and local context drivers specifically responding to the 1998 Epping Forest adopted local plan and the unadopted draft guidance that is the Epping Forest District Council Sustainability Guidance and Checklist. This document is intended to demonstrate how the development will respond to these policies and aspirations.

2. Policy.

2.1 Epping Forest Adopted Local Plan (1998) and Alterations (2006).



The Council's original Local Plan was adopted in 1998. Some of these policies are still in force. In 2006 the Council adopted the Local Plan Alterations, which replaced parts of the 1998 Local Plan.

Core Polices focusing on sustainable development were included in the alterations made in 2006. The key polices are listed below;

- Policy CP1 Achieving Sustainable Development Objectives
- Policy CP4 Energy Conservation
- Policy CP5 Sustainable Building
- Policy CP6 Achieving Sustainable Urban Development Patterns
- Policy CP7 Urban Form and Quality 10-11
- Policy CP8 Sustainable Economic Development
- Policy CP9 Sustainable Transport
- Policy CP10 Renewable Energy Schemes

2.2 Epping Forest District Draft Local Plan Consultation (2016)

The Epping Forest District Draft Local Plan sets out the proposed strategy for meeting the District's needs for the next 17 years. It sets out draft policies to ensure that development delivers high quality, sustainable homes, driving the quality of design and pushing to maintain high quality built and natural environment.

The development management policies below address a wide range of aspects that relate to the wider, and site environment that pertains to individual developments. They include additional requirements to those contained in the design policy section of the Plan and include measures that address natural resources and mitigate against the impacts of climate change as well as assisting in places adapting to the changing climate.

- Policy DM 15 Managing and Reducing Flood Risk
- Policy DM 16 Sustainable Drainage Systems
- Policy DM 17 Protecting and enhancing watercourses and food defences
- Policy DM 18 On site management of waste water and water supply
- Policy DM 19 Sustainable Water Use
- Policy DM 20 Low Carbon and Renewable Energy
- Policy DM 21 Local environmental impacts, pollution and land contamination

2.3 EFDC Sustainability Guidance / Major Developments (Draft for Consultation 2021)

The purpose of the 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.

The guidance should be read in conjunction with the policies found in the Epping Forest District Council Local Plan.

Upon adoption 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. The draft guidance has not been adopted and neither have the Local Plan policies which it provides further detail on. As such, they are not currently being given weight in the development management process, notwithstanding this we have sought to set out the progress being made against these objectives within this document.

3. EFDC Design Approaches; First Principles.

The following 'First Principles' are to be incorporated to ensure new developments are sustainable and bring practical solutions towards good design. The principles act as an iterative design process, encouraging a wholistic approach to sustainability. It should be noted that these are emerging principles and have yet to be adopted as policy guidance.

- Landscape led Design
- Sustainable Movement
- Orientation & Form
- Energy Hierarchy
- Adaptable & Future Proof Design
- Fabric-First Approach
- Ventilation and Overheating
- Embodied & Operational Carbon
- Airtight & Thermal Bridge Free

The sections below demonstrate as a minimum, how the development will achieve the performance targets set out within the Local Plan.

3.1 Energy Efficiency & Carbon

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.

Physical value is all about creating a building that delivers and showcases uncompromising quality in its energy strategy, infrastructure and built assets. Future focused flexibility, strategic and resilient energy solutions, optimised infrastructure and carbon-neutral design measures all make for a building that is not only the best it can be from day one but has true longevity.

Development Commitments

EN.1: An Operational Energy Assessment will be undertaken to determine the kWh/m^2y for the different usages across the site. These figures will be compared to the Industry Benchmark figures for buildings of a similar type and usage.

EN.2: An Embodied Carbon Assessment will be undertaken to determine the kg/$CO2_e/m^2$ for the different usages across the site. These figures will be compared to the Industry Benchmark figures for buildings of a similar type and usage.

EN.3: Space Heating Demand (kWh/m^2/y) will be calculated for the residential elements of the scheme in order to drive down demand.

EN.4: An Air Permeability of 3 m^3/h m^2 at 50 Pa will be targeted initially with this figure being reduced where possible across the site.

EN. 5: Mechanical Ventilation with Heat Recovery will be proposed through out the development.

EN.7: The reduction in CO_2 emissions will more than meet the minimum requirement set out in the document for the development (34% better than Part L 2013).

EN.8: BREEAM New Construction will be targeted for the commercial elements of the scheme

EN.9: The fabric U-values will be in compliance with the newly released Part L 2021.

3.2 Renewable Technologies

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.

Low and zero carbon (LZC) technologies can be used to extract or generate onsite renewable energy. This can be in the form of renewable heat, such as from the atmosphere or ground, or as renewable electricity, to be used on site or sold back to the national grid to offset emissions.

The potential for solar PV, generating zero carbon electricity, is being explored and will be optimised to complement the strategy.

Development Commitments

RN.1 PV and EV Charging will be included in the development with the potential to explore a low temperature heat network

RN.2: PV will be optimised in order to reduce onsite CO_2 emissions as far as practically achievable.

RN.3: The percentage of household electricity provided by on-site renewable technology will be reported

RN.4: Government incentivised schemes relating to renewable heat will be explored.

RN.5: The space heating peak will be reported (W/m^2)

RN. 6: The domestic hot water peak will be reported (W/m^2)

3.3 Green Infrastructure

Proposals must be landscape-led from the start, as set out in the EFDC Green Infrastructure Strategy. They should respond to the District's distinctive setting; expand and enhance the green and blue infrastructure network; and improve access to, and the quality of, the surrounding Green Belt.

Enhancing the environment is an important factor for the development both within the local context and through contributing to wider climate and biodiversity challenges. The built environment is the most powerful influence on our natural world, and when considering how we add value we have to take a bold and ambitious approach that considers both what we can remove (in terms of negative impact) and what we can add (in terms of transforming an environment for the better).

Ultimately, with the right approach, the built environment can exist and enhance our natural world in harmony. The defined targets will ensure that design and operation contribute to environmental sustainability in the vicinity of the site and beyond through enhancement of ecological assets and sustainable and responsible resource management.

Development Commitments

GR1: A high quality landscape-led approach will be demonstrated

GR2: Biodiversity Net Gain will be achieved

GR3: The Ecology report will show process of mitigation and location hierarchy, with Stewardship and Maintenance strategy provided for green infrastructure and BNG

GR4: Play, community amenity and food production opportunities are being investigated on the development. All new homes should be within 800m of allotments, and Fields in Trust distances will be followed for play spaces.

GR5: A Landscape Framework will be investigated articulating whether an integrated approach has been taken to the provision of SANG, including the use of recognised tools to assess its value/quality.

GR6: An Overheating Assessment will be provided, as set out in UKGBC's Housing Standards Playbook, taking into account impact of green infrastructure.

GR7: Multifunctional green infrastructure will be proposed at different scales, with clarity on how its quality and quantity reinforces the existing infrastructure within the District.

3.4 Sustainable Movement

Development should minimise the need to travel, promote opportunities for sustainable transport modes, improve accessibility to services and support the transition to a low carbon future. New proposals must futureproof for change in travel habits, including reallocating parking and road space, innovation in travel technology, last mile deliveries and electric charging.

A development is only as strong as its people and communities, and social value is all about opening opportunities for them to thrive. A key theme for the development is to embed itself within the growing local community. When a project embraces this unique local identity – one that considers the full diverse range of value that the community both offers and could benefit from – you create a place for the people... a place that becomes more than its bricks and mortar and delivers an immeasurable long-term legacy.

Development Commitments

TR1: Walkable, low-traffic and permeable neighbourhoods been designed as a first principle?

TR2: Safe and high-quality connections to active travel networks beyond the development boundary will be proposed with Green Infrastructure (GI) considered.

TR3: Inclusive design principles / accessibility for all regarding sustainable movement will be achieved.

TR4: Cycle parking been designed to be high quality, safe, secure and easy to access.

TR5: A high quality transport assessment will be undertaken

TR6: A thorough Sustainable Travel Plan will be provided, with investigations into Modeshift Stars accreditation.

3.5 Water Management

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

The Proposed Development will seek to maximise soft landscaping as far as possible and will provide a degree of benefit to reducing flood risk.

In addition to limited flood risk, water use on-site is of equal importance. Water scarcity is another likely consequence of climate change and measures to mitigate the effects of this will be demonstrated through detailed design stages. This use of low flow fixtures and fittings alongside leak detection and flow control devices will be implemented. Efforts to reduce water use will be assessed in line with standards from relevant environmental assessment methods such as BREEAM.

Development Commitments

W.1: The expected internal water use will as a minimum target 110 l/p/d with investigations undertaken to reduce in line with emerging targets.

W.2: A number of water collection strategies will be explored across the site, looking at water butts, rainwater and greywater harvesting.

W.3: Permeable area will be maximised as part of the surface water drainage strategy

W.4 Water saving devices will be installed wherever possible across the development

W.5 A number of SuDs measures have been considered across the site.

3.6 Circular Economy

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.

A holistic, interdisciplinary approach with all stakeholders will be adopted to define and communicate the sustainability and Circular Economy strategy for the development.

Development Commitments

CE.1: Ethical and responsibly sourced materials will be targeted on site

CE.2: All materials will be non-toxic

CE.3: Investigations will be undertaken to maximise the use of recycled materials in the design

CE.4: Circular Economy Principles will be incorporated within the design

CE.5: Reusable materials will be optimised.

CE.5: Reused materials will be optimised.

CE.6: No biodegradable or recyclable waste will be sent to landfill.

3.7 Waste Management

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

The Proposed Development will include ample waste storage area to cater for general waste and recyclable waste streams predicted as a result of the occupancy patterns for the buildings. Tenants will be encouraged to segregate waste into the relevant waste streams to maximise the quantity of waste that is recycled. The Contractor will be required to adhere to a Site Waste Management Plan.

Development Commitments

W.1: ≥95% of construction, demolition and excavation (CD&E) waste will be recycled.

W.2: The operational waste strategy will target to maximise composted waste rather than landfill

W.3: Engagement with the EFDC Waste Management team will be undertaken to ensure that their processes are taken into consideration.

W.4: The development will be designed to encourage ease in waste recycling.

3.8 Air Quality

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

The Proposed Development aims to implement an effective air quality strategy that includes the use combustion free servicing strategy for all building services. In addition it is proposed to limit parking to a minimum feasible level and provide electric vehicle charging points.

Development Commitments

P.1: Mitigation measures as described in the District's Air Pollution Mitigation Strategy will be adhered to.

3.9 Non-Domestic Development

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

It is intended that the Proposed Development will target (BREEAM) 'Very Good' rating (as a minimum), an embodied and operational carbon assessment will also be undertaken in order to understand and drive down carbon emissions on site.

Development Commitments

ND.1: The development is targeting BREEAM 'Very Good' as a minimum

ND.2: An Operational Energy Assessment will be undertaken to determine the kWh/m^2y for the different usages across the site. These figures will be compared to the Industry Benchmark figures for buildings of a similar type and usage.

ND.3: An Embodied Carbon Assessment will be undertaken to determine the $kg/CO2_e/m^2$ for the different usages across the site. These figures will be compared to the Industry Benchmark figures for buildings of a similar type and usage.

ND.3: The potable water usage targeted for the development will as a minimum target 16 l/p/d

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