

Appendix 1 – Climate Change and Sustainable Construction Policy

Three Rivers declared a Climate Emergency in 2019, requiring action at both local and global levels. In this context it is critical that delivery of new homes to meet our needs help create an urban environment that both mitigates its contribution to the causes of climate change and which can adapt to the further climate impacts that are expected over the plan period and beyond.

The Government has committed the UK to a 68% reduction in emissions by 2030 and 78% by 2035, from 1990 levels. To achieve these targets and ensure the sustainability of our cities and society we will need to facilitate drastic decarbonisation of the built environment. As such, it is appropriate now for future development to aim to achieve net zero operational energy. The policies in this section take it as an assumption that net zero operational energy design will be considered from the earliest concept stages through to the final stages of design and construction. By making this assumption, it is more likely that truly sustainable, net zero development will be feasible and viable.

The draft policies in this chapter are designed to ensure that future development contributes towards this goal of a net zero and climate resilient district.

Preferred Policy Option ~~12-3 Adapting to~~ Climate Change and Sustainable Construction

(1) All major developments are required to submit a Sustainability Statement demonstrating how sustainable design and construction methods have been used, including adaptation strategy and outlining measures to enable the development to mitigate and adapt to climate change over its lifetime.

Mitigating and Adapting to Climate Change

(2) To help manage and mitigate the impacts of climate change, new development should build in greater resilience to climate change and extreme weather events through careful design of buildings, public realm, infrastructure and ecological services, sites and buildings including where appropriate:

- a) Managing flood risk and promoting sustainable drainage systems and their maintenance;
- b) Promoting and enhancing the Green Infrastructure network across the District and integrating this as part of the design process;
- c) Protecting the natural environment, and conserving and enhancing biodiversity;
- d) Considering the layout of new development, building orientation, shading, construction materials and ventilation systems to address sunlight and daylight, passive solar gain and reduce risks of overheating and reliance on air conditioning systems.

- e) Minimising energy demand through high standards of energy efficiency, and maximising on-site generation of renewable energy (see Preferred Policy Option 13 Carbon Dioxide Emissions and On-site Renewable Energy); and
- f) Minimising embodied carbon and making efficient use of natural resources.

(3) All major development is required to submit an Adaptation Strategy with clear design drawings to demonstrate:

- (a) risk assessment of climate change impacts to the proposed development and the surrounding context;
- (b) a masterplan indicating where protective and adaptive measures are to be taken, for example through layout, massing, public realm, green and blue infrastructure;
- (c) more detailed information at the building design level, for example massing, facades, materials, finishes, ground floor uses and design, minimising single aspect dwellings;
- (d) building services measures (a reliance on powered cooling without appropriate design measures will not generally be acceptable).

Sustainable Design and Construction

(4) New development should be designed and constructed to:

- a) Make efficient use of materials and mineral resources and incorporate a ~~proportion of~~ recycled materials and/or secondary aggregates, where possible;
- b) Minimise waste and reuse material resulting from excavation and demolition activity;
- c) Take a Fabric First approach to reduce energy requirements and carbon emissions;
- d) Embody circular economy principles to reduce the need for virgin materials;
- d) Balance demolition and excavation with fill and onsite construction;
- e) Conserve top soil for future use either on or offsite;
- f) Minimise water use in construction and operation;
- g) Conserve water in accordance with the requirements set out in Preferred Policy Option 15 (the tighter Building Regulations optional requirement of 110 litres/person/day or subsequent updated tighter standards), and reduce flood risk;
- h) Manage water courses, surface and drainage water to avoid flood risk on and offsite;
- i) Be flexible and adaptable to the needs of future occupiers in terms of building design;

~~i) Incorporate measures to enhance biodiversity value;~~

- (5) Major non-residential development must ~~aim to~~ achieve BREEAM 'Excellent' Standard (or equivalent) or BREEAM 'very good' plus 'Passivhaus' certification including a 15% improvement in predicted carbon emissions, compared with the building regulations current at the time, through low or zero carbon energy generation on site or in a location agreed by the Council, unless this is demonstrated to be unviable.

Reasoned justification

7.XX By 2050, Three Rivers will need to decarbonise activities across all sectors. This will require: a transition to a low carbon and circular economy which promotes the effective use of resources and minimises waste; all journeys using petrol and diesel vehicles will need to be replaced by low carbon alternatives such as cycling and walking, and low carbon vehicles; and emissions from all existing and new buildings will need to be net-zero carbon by minimising energy demand, and meeting all our energy needs using renewable and low carbon energy.

7.10 Mitigating and adapting to climate change are intrinsic to the Local Plan and are key priorities for the Council. We consider that all development should take into account opportunities to mitigate and manage the effects of climate change and to use resources efficiently. While opportunities may be more limited for minor developments, improvements should still be sought in the design and construction of these schemes where possible.

7.11 For major developments where there is generally more scope to achieve significant improvements, it is proposed that a Sustainability Statement is required as part of an application to demonstrate how sustainable design and construction measures are included to mitigate and adapt to climate change and reduce the use of natural resources over the intended lifetime of a development.

7.12 In addition, projected increases in future temperatures must be taken into account to ensure that developments provide for a suitable standard of amenity and quality of life for future occupiers. As a consequence, development proposals need to consider how measures have been taken to minimise overheating and to reduce reliance on air conditioning.

7.13 Ensuring that development is constructed in the most sustainable way requires consideration to be given to reducing the use of natural resources including through minimising waste, using sustainable building materials and reducing water consumption; and making sure that development is flexible and adaptable to respond to future needs, manages flood risk and supports enhancements to biodiversity.

7.XX All materials and construction processes have embodied carbon. New developments should use resources efficiently, prioritise materials and processes

that have low embodied carbon and a low environmental impact, eliminate and reduce waste and reuse materials wherever possible in order to help deliver a circular economy. The policy requires all development to adopt a circular economy approach to building design and construction to keep products and materials in use for as long as possible and to minimise construction waste.

7.XX To improve sustainability and effectively tackle the causes of climate change, new development must be energy efficient and use low carbon energy sources. Applicants must adhere to the energy hierarchy of improving fabric first approach followed by prioritising reductions in carbon emissions through energy efficient design and materials before efficient building services, and then low carbon energy, are used to reduce emissions further., then adding renewables and finally offsetting emissions that can't be mitigated onsite, but with no fixed targets at each stage due to the difficulty of setting targets when Part L (the baseline) is changing. ~~Examples of 'fabric first approach' include Passivhaus which is seen as the most stringent low 'energy in use' standard and is consistent with LETI's Climate Emergency Design Guide. This standard also relies on a more accurate energy demand assessment methodology using the Passive House Planning Package (PHPP).~~

7.14 Household water consumption in the District is significantly higher than in the rest of Hertfordshire or nationally. The region is designated as water stressed and water is largely supplied by chalk streams which are at extreme risk from over-abstraction. As a result, new development will be required to improve the way we use water with a water efficiency standard for new development above the basic national standard. ~~We are therefore requiring new dwellings to meet the Building Regulations optional requirement of 110 litres/person/day.~~ New developments in the region would be advised to protect against drought and improve their sustainability credentials by designing in water saving schemes such as rainwater harvesting and greywater recycling.

7.15 The Building and Research Establishment Environmental Assessment Method (BREEAM) **provides market recognition for low environmental impact non-residential buildings. It addresses a wide range of environmental issues and enables developers and designers to prove the environmental credentials of their buildings so we are asking for major non-residential development proposals to aim to achieve BREEAM 'Excellent' Standard.**