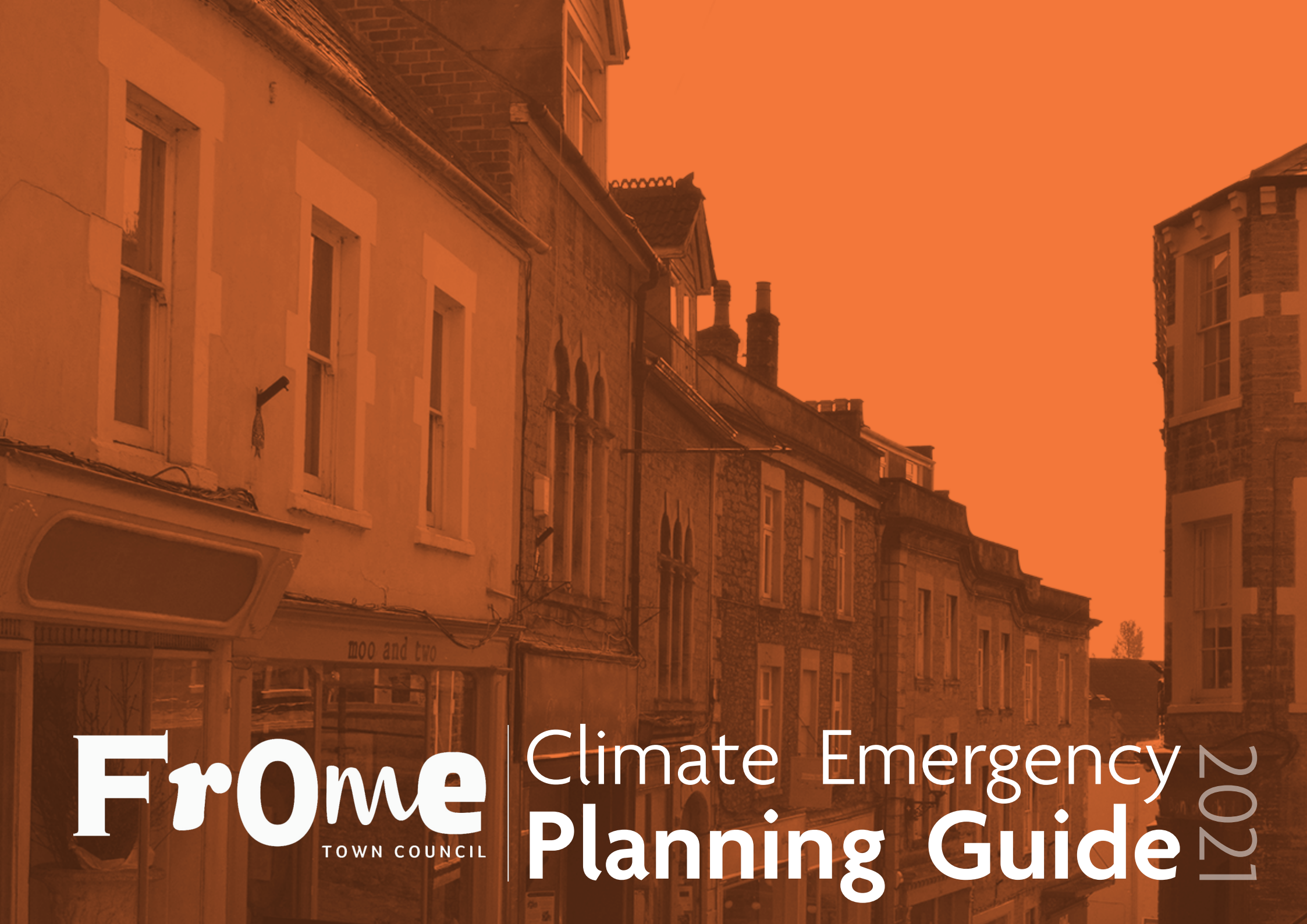


Frome
TOWN COUNCIL

Climate Emergency Planning Guide 2021

CONTENTS

Introduction & Policy Context

1. Climate Emergency

1.1 In 2019 Frome Town Council became one of the first councils in the country to declare a Climate Emergency, a move that was shortly followed by Mendip District Council, Somerset County Council and over 300 local authorities across the UK. Frome Town Council, Mendip District Council and Somerset County Council have all committed to a target of carbon neutrality by 2030.

1.2 Buildings currently account for around 40% of Frome's CO^2e (Carbon Dioxide equivalent) emissions[1]. To achieve Frome's goal of carbon neutrality, in addition to addressing emissions from existing stock, any new buildings must be net-zero compliant from day one.

1.3 Somerset's Climate Emergency Strategy Built Environment sector report[2] states

- All new developments (new homes and non-residential) will be highly energy efficient, at least zero carbon and climate resilient from as early a date as possible.
- All new developments will be constructed from sustainable and carbon neutral materials, as well as sourcing materials with future reuse in mind. This keeps circular economy principles central throughout every stage of construction and development.
- All new developments will reduce the need to travel to access key services and employment opportunities and facilitate sustainable movement patterns in and around them by default.

2. National Policy and Planning Reform

2.1 The UK Government is currently consulting on major reforms to the UK planning system. The white paper states the aim to "build environmentally friendly homes that will not need to be expensively retrofitted in the future, homes with green spaces and new parks at close hand, where tree-lined streets are the norm and where neighbours are not strangers."[3]

2.2 This ambition is supported by changes to Part L and Part F of the Building Regulations for new dwellings in 2025 to ensure all new homes are net-zero ready without the need to retrofit. Interim higher standards for energy efficiency for new homes will be introduced in 2021.

2.3 The proposed reforms will make Local Plans more succinct, based on areas designated for development and including a set of National Design Codes which can be adopted at a local level. There is an emphasis on deeper consultation during the Local Plan phase after which, if proposals meet the Local Plan requirements outline planning could be approved automatically.

2.4 Alongside the white paper the government has published a new National Model Design Code and updated the National Design Guide for new buildings, with an emphasis on energy efficiency, renewable energy generation, green infrastructure and encouraging healthy lifestyles.

[1] https://impact-tool.org.uk./footprint/footprint?parishId=E04008560&footprintType=territorial&scale=absolute&showSubCategories=true
[2] https://docs.somerset.gov.uk/wl/?id=LZhxLhBNNxdiLzO7JdSqaXSRxuOzoTHd
[3] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/958420/MHCLG-Planning-Consultation.pdf

3. Mendip Local Plan

3.1 Mendip's Local Plan stipulates that new developments:

- are of a scale, mass, form and layout appropriate to the local context
- protect the amenity of users of neighbouring buildings and land uses, and provide a satisfactory environment for current and future occupants
- optimise the potential of the site in a manner consistent with other requirements of this policy
- incorporate all practical measures to achieve energy efficiency through siting, layout and design
- maximise opportunities for:
    - The use of sustainable construction techniques
    - The use of sustainable drainage systems
    - Renewable energy generation on site
    - The use of water efficiency measures, recycling and conservation
    - New residents to minimise, re-use or recycle waste
- use locally sourced or recycled materials wherever practically possible
- meet the access needs of a wide range of users
- incorporate appropriate crime prevention measures
- make efficient use of materials and minimise waste.

4. Frome's Neighbourhood Plan

Frome's Neighbourhood Plan is underpinned by the One Planet Living framework as defined by Bioregional and Worldwide Fund for Nature (WWF).

One Planet Living (OPL) is a simple concept. We have only one planet and collectively we have a responsibility to live within its capacity. In the UK, natural resources are currently being consumed at a rate that would require the equivalent of three planets if everyone worldwide shared our lifestyle.

Ten clear principles have been developed to promote happy, healthy and sustainable communities, and these have been translated into a management model for development.

Zero carbon

Making buildings more energy efficient and delivering all energy with renewable technologies.

Zero waste

Reducing waste, reusing where possible, and ultimately sending zero waste to landfill.

Sustainable transport

Encouraging low carbon modes of transport to reduce emissions, reducing the need to travel.

Sustainable materials

Using sustainable healthy products, with low embodied energy, sourced locally, made from renewable or waste resources.

Local and sustainable food

Choosing low impact, local, seasonal and organic diets and reducing food waste.

Sustainable water

Using water more efficiently in buildings and in the products we buy; tackling local flooding and water course pollution.

Land use and wildlife

Protecting and restoring biodiversity and natural habitats through appropriate land use and integration into the built environment.

Culture and community

Reviving local identity and wisdom; supporting and participating in the arts.

Equity and local economy

Creating bioregional economies that support fair employment, inclusive communities and international fair trade.

Health and happiness

Encouraging active, sociable, meaningful lives to promote good health and well being.

CHAPTER 1

Building Design & Renewable Energy

1. Net-Zero Emissions Target

All buildings constructed today will be standing in 2050. Therefore, any newbuild that is not built to net-zero emissions standards will need to be retrofitted to varying extents later on, in order to meet UK emissions goals. This cost will be borne by the homeowner or the taxpayer.

2. The Cost of Building Energy Efficient Homes

Building energy efficient homes with renewable generation and minimal running costs is no longer a niche or costly exercise; the London Energy Transition Initiative (LETI) estimates there are 30,000 houses in the UK at the Masterplan stage that are designed to meet Passivhaus standards[4]. There is clear evidence that the cost of developing to a Passivhaus standard is not a barrier - in 2018, it is estimated the cost of building to Passivhaus standard was 8% higher than the cost of building to 2013 regulations[5]. With repetition this cost can fall further to around 4% - before considering the long-term savings in terms of low running costs, comfort and health benefits for the occupants.

3. The Energy Hierarchy

In line with the National Design Guide[6], new buildings should follow the energy hierarchy:

- Reducing the need for energy through passive measures including form, orientation and fabric
- Using energy efficient mechanical and electrical systems, including heat pumps, heat recovery and LED lights
- Maximising renewable energy especially through decentralised sources, including on-site generation and community-led initiatives

4. Form, Orientation and Fabric

4.1 The Government has announced an uplift of building standards for new homes to be introduced at the end of 2021, as a stepping-stone to the Future Homes Standard which will be introduced in 2025. The current 2013 regulations are outdated and incompatible with the UK's legally binding net-zero target. The below table shows the requirements for thermal performance of new buildings expressed in U-values.

Building Element	Part L 2013	Part L 2025	Future Homes Standard	Passivhaus
External walls	0.30	0.18	0.15	All elements combined = >0.15
Floor	0.25	0.13	0.11	
Roof	0.20	0.11	0.11	
Windows	2.00	1.20	0.80	0.8
Air permeability (m3/h.m2)@50Pa	10	5	5	1

[4] https://www.theguardian.com/artanddesign/2021/mar/06/eco-homes-become-hot-property-in-uks-zero-carbon-paradigm-shift
[5] https://www.passivhaustrust.org.uk/UserFiles/File/research%20papers/Costs/2019%20PHT%20Costs%20Summary%20web.pdf
[6] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/962113/National_design_guide.pdf

4.2 The London Energy Transformation Initiative (LETI) has produced the following recommendations for new homes as part of its Climate Emergency Design Guide:

Small scale housing

Operational energy

Implement the following indicative design measures:

Fabric U-values (W/m².K)

Walls	0.13 - 0.15
Floor	0.08 - 0.10
Roof	0.10 - 0.12
Exposed ceilings/floors	0.13 - 0.18
Windows	0.80 (triple glazing)
Doors	1.00

Efficiency measures

Air tightness	<1 (m^3/h. m^2@50Pa)
Thermal bridging	0.04 (y-value)
G-value of glass	0.6 - 0.5
MVHR	90% (efficiency) ≤2m (duct length from unit to external wall)

Window areas guide (% of wall area)

North	10-15%
East	10-15%
South	20-25%
West	10-15%

Balance daylight and overheating

Include external shading

Include openable windows and cross ventilation

Reduce energy consumption to:

35 kWh/m².yr

Energy Use Intensity (EUI) in GIA, excluding renewable energy contribution

Reduce space heating demand to: 15 kWh/m².yr

Maximise renewables so that 100% of annual energy requirement is generated on-site

Form factor of 1.7 - 2.5

Heating and hot water

Implement the following measures:

Fuel
Ensure heating and hot water generation is fossil fuel free

Heating
Maximum 10 W/m² peak heat loss (including ventilation)

Hot water
Maximum dead leg of 1 litre for hot water pipework

'Green' Euro Water Label should be used for hot water outlets (e.g.: certified 6 L/min shower head – not using flow restrictors).

Demand response

Implement the following measures to smooth energy demand and consumption:

Peak reduction
Reduce heating and hot water peak energy demand

Active demand response measures
Install heating set point control and thermal storage

Electricity generation and storage
Consider battery storage

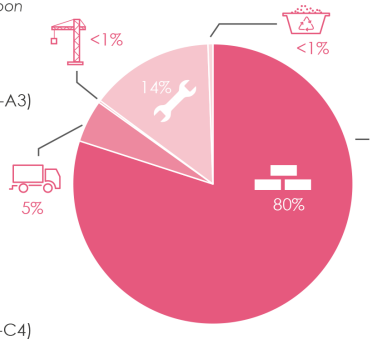
Electric vehicle (EV) charging
Electric vehicle turn down

Behaviour change
Incentives to reduce power consumption and peak grid constraints.

Embodied carbon

Focus on reducing embodied carbon for the largest uses:

- Products/materials (A1-A3)
- Transport (A4)
- Construction (A5)
- Maintenance and replacements (B1-B5)
- End of life disposal (C1-C4)



Average split of embodied carbon per building element:

30% - Superstructure

27% - Substructure

20% - Internal finishes

17% - Façade

5% - MEP

Reduce embodied carbon by 40% or to:

<500 kgCO₂/m²

Area in GIA

Data disclosure

Meter and disclose energy consumption as follows:

Metering

1. Submeter renewables for energy generation
2. Submeter electric vehicle charging
3. Submeter heating fuel (e.g. heat pump consumption)
4. Continuously monitor with a smart meter
5. Consider monitoring internal temperatures
6. For multiple properties include a data logger alongside the smart meter to make data sharing possible.

Disclosure

1. Collect annual building energy consumption and generation
2. Aggregate average operational reporting e.g. by post code for anonymity or upstream meters
3. Collect water consumption meter readings
4. Upload five years of data to GLA and/or CarbonBuzz online platform
5. Consider uploading to Low Energy Building Database.

Recommendation: To avoid costly retrofit measures all new homes should be built to the Future Homes Standard 2025 or Passivhaus standard.

[7] https://www.leti.london/cedg

5. Renewable Heat

5.1 Emissions from heating residential buildings using mains gas accounts for 19% of Frome's existing carbon emissions[8].

5.2 As part of the Future Homes Standard the government has announced that from 2025 no new homes will use fossil fuels for heat, including gas boilers. Therefore, new housing developments that are connected to the gas grid before 2025 will be obsolete almost as soon as they are built.

5.3 The Committee on Climate Change has highlighted that "future-proofing new homes for low-carbon heating, through the use of appropriately-sized heat emitters and low-temperature compatible thermal stores, has been estimated to save £1,500-£5,500 of costs compared to later having to retrofit low-carbon heat from scratch"[9]

Recommendation: Under no circumstances should new homes be connected to the gas grid; either a low carbon heat network or individual heat pumps should be included as standard.

6. Renewable Electricity Generation

6.1 Installing rooftop solar PV and battery storage as standard (around 4kW for a 3-4 bed house) has the potential to generate 100% of the electricity requirement for new housing developments on-site. Buying and installing solar PV, batteries and heat pumps in bulk will dramatically reduce the cost compared to individual households opting to install them later.

6.2 There is also potential to explore connected renewable energy generation through a microgrid, optimising demand and generation across a whole development. Frome Renewable Energy Co-op (FRECo), in partnership with Frome Town Council, has secured £40,000 from the Government's Rural Community Energy Fund to explore opportunities for a net-zero carbon heat network and microgrid at Saxonvale. If implemented, this could provide a blueprint for other developments in the town.

6.3 Working with community energy groups locally allows for community ownership of energy generation assets, greater accountability, and the potential for innovation and partnership.

6.4 One of the major costs of a development can often come from the connection agreement to the electricity grid District Network Operator (DNO); by reducing overall electricity demand of a new development through efficiency and onsite generation, a developer could negotiate a smaller connection agreement[10].

Recommendations:

- 100% of electricity demand for new residential developments to be met on-site.
- Developers should make early contact with local community energy groups to explore possibilities for partnership on innovative projects.

7. Building Performance Evaluation and User Guidance

7.1 The "performance gap" between the targets set out in the design of a building and its actual operational performance is well documented; it has been demonstrated that a typical home meeting current building standards will require, on average, at least 60% more energy for heating than was predicted[11]

7.2 One way to resolve this is for the client and developer to ensure the performance of the building is reviewed at the design and construction stage and where possible, once in use. The Good Homes Alliance and Woodknowledge Wales have produced a helpful guide for clients and developers on how to implement Building Performance Evaluation.

7.3 It is important that the home occupant is aware of how the building performs and how to use it - for example providing a clear explanation of heating and ventilation controls, smart meter displays and how to avoid overheating on hot days. This doesn't have to be a complex document; it could be a 2-page leaflet such as the one overleaf.

[8] https://impact-tool.org.uk./footprint/footprint?parishId=E04008560&footprintType=territorial&scale=absolute&showSubCategories=true
[9] https://www.theccc.org.uk/publication/uk-housing-fit-for-the-future/
[10] https://www.leti.london/cedg
[11] https://kb.goodhomes.org.uk/wp-content/uploads/2020/09/Building-Standards-Comparison-October-2020-v1.2.pdf

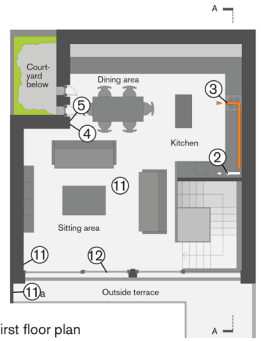
Ranulf Road User Guide


Ranulf road south elevation

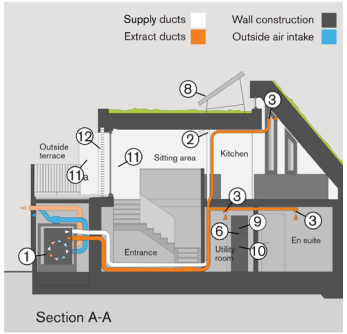
Ground floor plan

This house is a Passivhaus. The term passivhaus refers to an advanced low energy construction standard for buildings, which have excellent comfort conditions in both winter and summer. They typically achieve a heating saving of 90% compared to existing housing. Passivhaus buildings are easy to live in and require little maintenance, but they do have some important features, which are explained in this guide. The features are simple to operate, but a full understanding will help you get the lowest energy consumption and best comfort. This guide has been design by Alan Clarke and bere:architects for you (the user) to understand how a passivhaus works and how to operate the controls in this house.

Each feature is labelled on the drawings below, highlighting their locations and briefly explaining how to operate them in the corresponding text. Please take the time to read this guide and familiarise yourself with the controls.



First floor plan



Section A-A

① Heat recovery ventilation unit


This unit saves heat from the internal air produced by solar gains, people and electric items to pre-heat a supply of fresh air. If air heating is not required only fresh filtered air is supplied. These filters need to be replaced every 6months in london. The system saves about 10 times more energy than it uses! It is located in the store in an insulated cupboard.

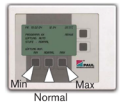
② Fresh air vents


The fresh air (pre-warmed in winter) is supplied by the heat recovery unit and delivered to the bedrooms and living room using these fresh air vents. The heating system (10) is automatic but you can adjust the fan speed (4) manually with the wall mounted panel in the dining area. This will keep the air fresh during a party or intensive cooking.

③ Extract air vents


These vents remove possible stale and damp air from the kitchen, bathroom and utility room. The heat recovery unit saves heat, which saves money. The ventilation runs continuously all year round but special motors have tiny energy consumption. The extract air vent filter need to be cleaned about every 3 months.

④ Heat recovery ventilation control panel



The fresh air system can be left on "auto" but the fan speed can also be manually changed using this panel during cooking or if the bathrooms are steamy. If you go away during the winter don't turn it off but leave it on the lowest speed.

⑤ Thermostat

The thermostat in the living room sets the temperature in the room. 20-21°C is the normal temperature, but you could turn it down if you are away for a few days or just for a few hours to save energy.

⑥ Solar tank and boiler control panel


This should be set for all-day-long because the ventilation system is designed to provide gentle continuous heat. It can't give a quick boost like radiators can. The space heating is controlled with the panel in the dining room (4) and not via this panel.

⑦ Towel radiator control


If at any time you wish to run the radiators press the 'boost' switch on the wall beside the shower rooms. You can choose half an hour, 1 hour or 2 hours depending on how many times you press the 'boost' button. The time is indicated by the light display.

⑧ Hot water from the sun


In summer almost all the water in the solar tank is heated by the sun shining on the solar panel on the roof. In winter the panel can heat the bottom half of the tank and the boiler is used to top up the temperature. This means there is always hot water available in the tank even on a cloudy day.

⑨ Hot water temperature


Hot water is always ready in the tank this is due to the tank being very well insulated so that the water will not cool down overnight. On cold cloudy winter days most of the hot water will be provided by the integrated boiler above the tank .

⑩ Heating


A Passivhaus does need a small amount of heating. This comes from the air supply and the towel radiators in the shower room and bathroom. The heat for the towel radiators comes from the gas boiler normally used for hot water. Air heating is automatic but you adjust the temperature on the ventilation control panel (4).

⑪ External blinds control (for summer cooling)


In summer the outside blinds minimise solar gains from the sun. These come down automatically in the summer when sunny but can also be manually operated with use of the controller. The controllers have two programs; one blind operation or all together. If it's too windy outside the blinds will retract to prevent them being damaged. NOTE: A waterproof controller needs to be kept outside to avoid being stuck outside in sunny conditions (11a).

⑫ Windows (for summer cooling)


To keep the internal temperature cool in the summer utilise the cooler night temperatures by leaving the windows open in the secure "tilt" position overnight. If it's hotter outside in the day you can shut the windows and external blinds and then run the heat recovery ventilation on summer by pass to keep cool inside.

bere:architects

For further information regarding these features:

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bere:architects (passivhaus specialists)
Tel: 020 7359 4503
E-mail: bere@bere.co.uk

Delivered with 'Details for passive Houses' by IBO Book

Recommendation:

- Developers to work with clients to commission a Building Performance Evaluation for the design, construction and handover stages of development
- All new houses to come with an easy user guide to cover heating and ventilation systems and controls, metering and energy generation.

8. Building Standards for Non-Residential Development

8.1 Alongside the Future Homes Standard (FHS), the Government is consulting on a Future Buildings Standard (FBS) for non-residential properties. As with the FHS, the FBS proposes the introduction of an interim standard in 2021 providing a 'stepping stone' to the full FBS in 2025, and ultimately the delivery of 'zero carbon ready' buildings.

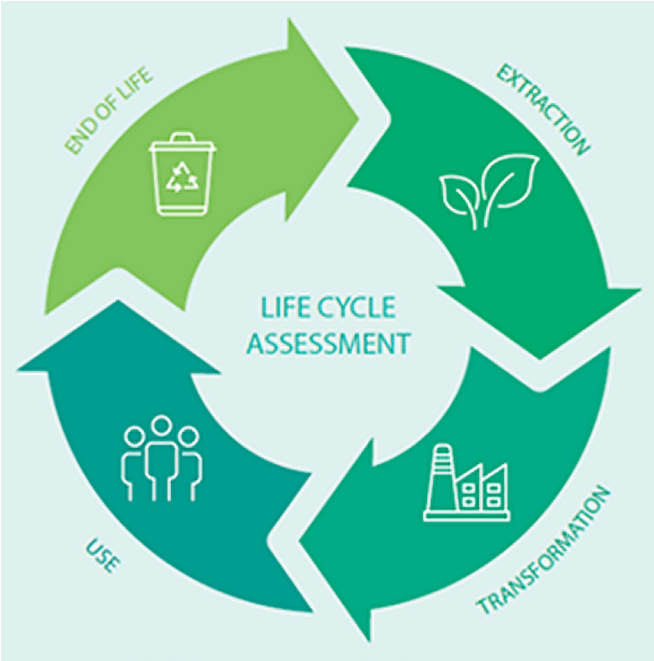
8.2 As there are many types of non-residential buildings, the consultation recognises that some will be able to transition quickly and others will need time to adapt. As there is not a one-size-fits-all approach for non-residential buildings, the government has not set out a standardised set of requirements for the building fabric in the FBS. However, the stated preferred option for the 2021 Part L regulations is a 27% reduction of CO2 emissions from the current 2013 standard.

8.3 Achieving a 27% reduction will require use of low carbon heat alongside material improvements.

Recommendations:

- All new non-residential developments to be built as close to net-zero carbon as possible, demonstrating at a minimum a 27% improvement from 2013 Part L regulations.
- All new non-residential developments to include low carbon heating and renewable electricity generation as standard.

Building & Materials Resources



1. Circular Economy

1.1 Circular Economy principles[12] aim to:

- Design out waste and pollution
- Keep products and materials in use
- Regenerate natural systems

1.2 All development proposals should minimise use of materials and creation of waste and promote opportunities for a circular economy through:

a) Prioritising the use of previously developed land and buildings, whilst maintaining and enhancing local character and distinctiveness

b) Reuse and recycling of appropriate materials that arise through demolition and refurbishment, including the reuse of non-contaminated excavated soil and hardcore within the site

c) Prioritising the use of locally sourced and/or sustainable materials and construction techniques that have smaller ecological and carbon footprints

d) Consider the lifecycle of the development and surrounding area, including how they can be adapted to meet changing community needs and how materials can be recycled at the end of their lifetime.

e) Provide adequate space to enable and encourage greater levels of recycling across developments, like adequate storage for recycling bins and containers, space for composting bins etc.

f) Provide household rainwater collection, efficient fittings, and sustainable drainage as standard.[13]

1.3 In order to support developers and those wishing to renovate their homes, Frome Town Council has published a Green Directory including local building material suppliers, tradespeople and architects.

IMPROVE DON'T MOVE

The Green Directory

Recommendations:

- All developments shall demonstrate actions taken to reduce resource use and maximise opportunities for reuse through the provision of a Circular Economy Statement
- Developers to refer to Frome's Green Directory for local, low carbon building materials and resources

[12]https://www.ellenmacarthurfoundation.org/circular-economy/concept
[13]Adapted from Cornwall DPD

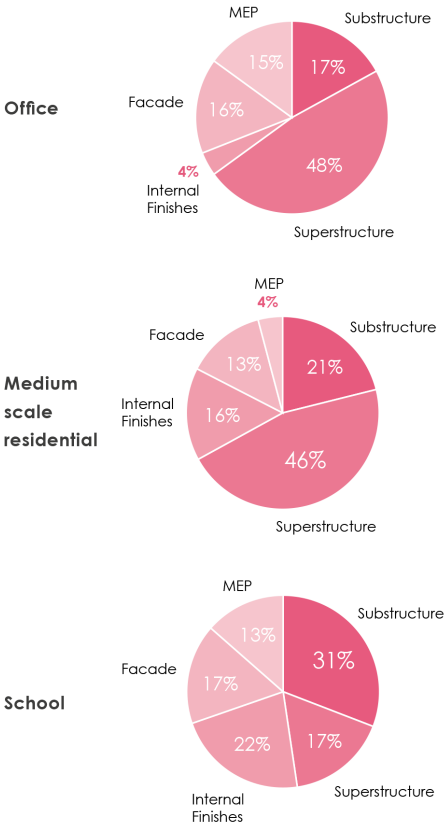
2. Embodied Carbon and Whole Lifecycle Assessment

2.1 Embodied carbon is the sum of emissions caused by extraction, manufacture/processing, transportation and assembly of products and materials used in construction. Embodied carbon can account for 40-70% of the footprint of a new building and therefore careful consideration should be given to the materials and methods used in construction.

2.2 The LETI Climate Emergency Design Guide (below) has an in-depth guide to understanding and reducing embodied carbon.

2.3 Ideally all new developments should achieve net-zero carbon on site. The Royal Institute for Chartered Surveyors (RICS) Whole Lifecycle Carbon Assessment guidance sets out a methodology for calculating whole lifecycle emissions of a development.

2.4 We would like to see developers considering the whole lifecycle emissions of their developments and where for any reason these cannot be net-zero, to demonstrate how they plan to offset residual emissions locally.



Proportions of embodied carbon by building element

Figure 2.7 shows the relative proportions of embodied carbon by building element.

It is important to consider not just the proportion of embodied carbon per element, but also the potential total embodied carbon reductions of all the elements. At RIBA Stage 3 a detailed whole life carbon study shall be undertaken. As part of this, a study shall be undertaken that identifies the breakdown of embodied carbon by element and the carbon reductions that could be achieved for each element. This helps to identify 'big ticket items' – where the greatest embodied carbon reductions can be achieved.

Figure 2.5 (on the previous page) is an example of the results of this type of assessment for a typical mixed used development (commercial and residential). It is evident that the top five building parts (Piling, Foundation, Frame, Upper Floor and Envelope) provide the greatest embodied carbon reduction opportunities and thus should be the focus. Nevertheless, the remaining bottom items (ceiling finishes, internal walls, floor finishes and external works) should also be considered for establishing the project embodied carbon reduction strategy.

Structure (Sub and super structure)

- → Compare the embodied carbon options for sub and superstructure at an early stage to identify an optimum solution.
- → Typical bay studies for the horizontal and vertical grid should be conducted at concept stage for different material arrangements to determine the impact on the total embodied carbon for each framing arrangement.
- → A structural rationalisation study should be conducted to determine the impact on overall material quantity versus efficiency in construction/fabrication.
- → Reduce the weight of structure where possible through voids.
- → Maximum embodied carbon quantities should be specified for structural components. Targets can be achieved by cement replacement such as GGBS, low carbon concrete mix design, low carbon materials and using recycled/repurposed materials.
- → Structural frame should be considered to have a dual purpose, i.e. the structure could serve as a shading device rather than introducing additional shading elements to control solar gain.
- → Explore recycled sources of material.

Envelope (Facade and roof)

- → Carry out embodied carbon comparisons on typical construction bays during early design stages where decisions can be guided by benchmarks / data.
- → Remember that it is the hidden parts (for example metal secondary framing) of a build up that often contain the most embodied carbon.
- → Where metals are used, limit their use and ensure they can be removed and recycled at end of life.

Mechanical, Electrical and plumbing (MEP)

- → Avoid over-provision of plant - a detailed load assessment must be undertaken.
- → Typically, fewer and simpler systems will reduce embodied carbon.
- → Explore options for plant room locations which reduce duct runs.
- → Design for deconstruction and recycling as MEP is typically replaced 2-3 times during the lifespan of a building.
- → Specify refrigerants with low Global Warming Potential (i.e. <150) and ensure refrigerant leakage is carefully considered in the whole life carbon analysis.

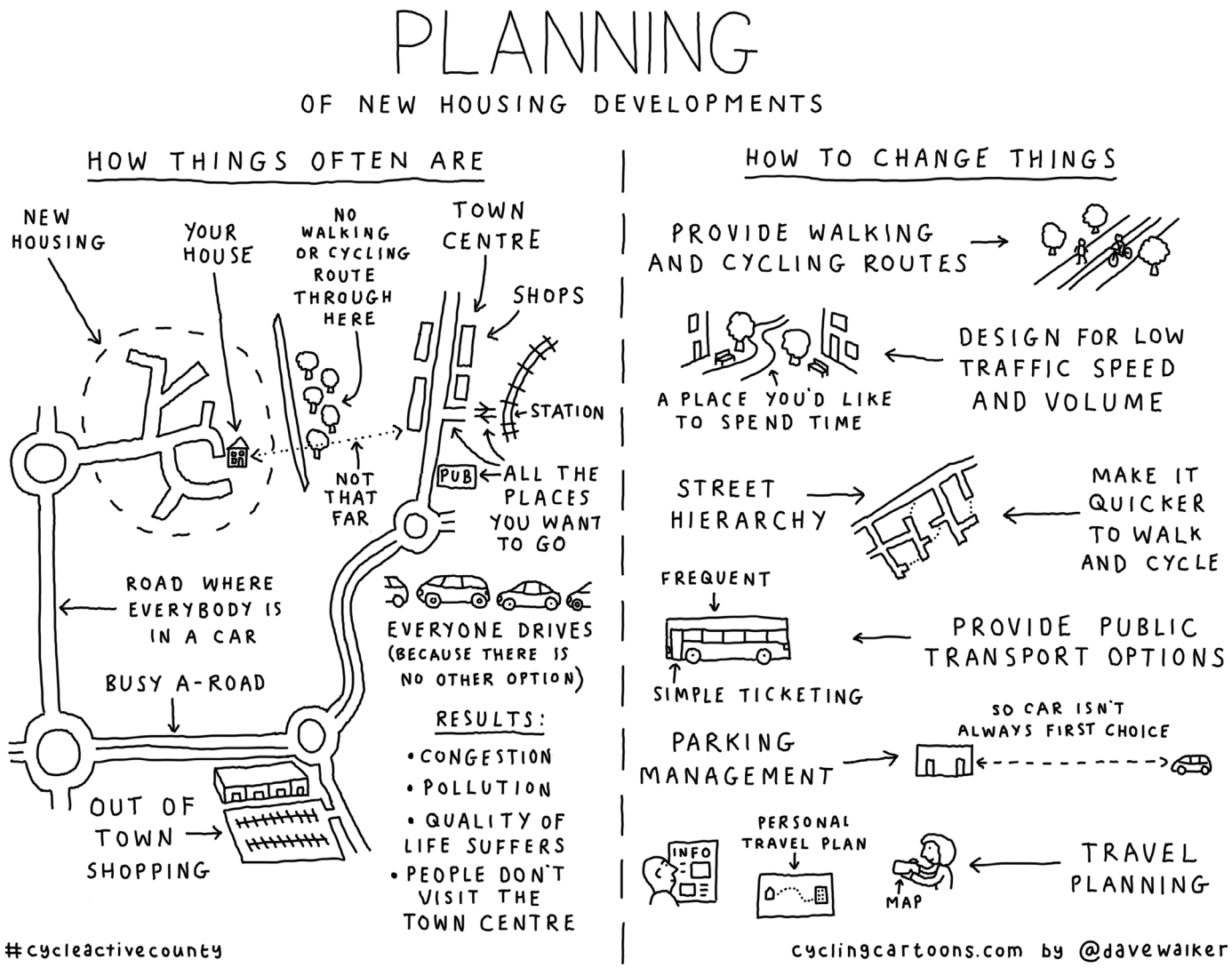
Finishes and Furniture Fixtures and equipment (FF&E)

- → Consider eliminating materials where not needed e.g. by exposing services.
- → Utilise self-finishing internal surfaces like timber.
- → Consider the cleaning and maintenance regime to be undertaken.
- → Ensure the fit out requirement is clearly understood to avoid FF&E to be replaced when the first tenant moved in.
- → Carefully compare products based on EPD data, recycled material and also avoidance of harmful chemicals like formaldehydes and VOCs.
- → Consider the replacement cycle and specify for longevity.
- → Choose products that do not rely on adhesives so fabrics or finishes can be replaced.
- → Be wary of trends that are likely to date and require early replacement.

Recommendation: All developments shall demonstrate actions taken to reduce embodied carbon and for large developments, a Whole Lifecycle Carbon Assessment will be submitted.

[14]https://www.leti.london/cedg

Active & Green Travel



1. Transport is the largest emitter of greenhouse gas emissions in the UK and private vehicle use, especially car use, make up the bulk of transport emissions. Modelling from transport charity Sustrans shows that even accounting for the take-up of electric vehicles, private vehicle use will need to be reduced by 20 - 60% by 2030 to meet our climate change targets.[15]

2. Encouraging active travel has a whole host of benefits including reducing congestion, improving air quality and improving the health of residents.

[15]https://www.sustrans.org.uk/our-blog/policy-positions/all/all/our-position-on-the-climate-crisis-and-transport

3. New housing or industrial developments will inevitably lead to increased pressure on public transport and roads in Frome. Therefore, all new developments should from the outset aim to make walking, cycling, public transport and shared vehicles the most obvious and convenient choice to facilitate the necessary culture shift away from private vehicle use.

4. Developments should consider the principle of "20 minute neighbourhoods" where people can access schools, shops and other amenities within 20 minutes walking distance of their home, thereby reducing the need to travel by car.

5. Frome Town Council is in the process of developing a Local Cycling and Walking Infrastructure Plan (LCWIP) to strengthen its existing Transport Strategy; developers are encouraged to engage with the Council to ensure that developments can integrate into existing or planned walking and cycling infrastructure.

6. To encourage walking and cycling, new developments should incorporate:

- Clearly marked, safe walking and cycling routes with clear signposting for navigation
- Trees and bushes separating walkers and cyclists from vehicular traffic
- Secure and weatherproof cycle storage

7. Developers should also consider provision for car-free streets with spaces for private car parking and access to shared vehicles at the periphery of the development.

Left: Slateford Green in Edinburgh, where car parking spaces outside houses have been replaced with raised beds for food growing - a communal car park is located on the periphery of the estate

8. Car clubs such as Co-Wheels which operates in Frome can work with developers to incorporate car clubs to their development proposals. Residents are offered discounts to encourage using the car club car from day one as part of the new development, rather than trying to add it later once people have moved in and established travel routines.

Recommendations:

- Developers to work with FTC and residents to ensure new developments link with Frome's Local Walking and Cycling Infrastructure Plan and Transport Strategy
- Active travel to be prioritised through clearly marked and separated walking and cycling routes that link up with public transport routes
- Secure and weatherproof cycle storage to be incorporated into all developments
- Developers to work with local car club providers to incorporate community vehicles into the development from day one

CHAPTER 4

Biodiversity & Green Infrastructure

1. Biodiversity Net Gain

1.1 Once it receives royal assent, the Environment Bill 2019-21 will require a 10% net gain in biodiversity for new developments.

1.2 The Chartered Institute of Ecology and Environmental Management (CIEEM) defines biodiversity net gain as "development that leaves biodiversity in a better state than before. It is also an approach where developers work with local governments, wildlife groups, land owners and other stakeholders to support their priorities for nature conservation."

1.3 All developments are expected to follow the mitigation hierarchy:

Avoid: Avoid biodiversity harm. Avoidance can be achieved through site selection, alternatives design or layout or completing works at an alternative time of year when vulnerable species are least likely present.

Mitigation: Where impacts are unavoidable, specific mitigation measures must be designed to significantly reduce the impacts to biodiversity in or next to the site. Mitigation measures must be realistic and effective, based on sound ecological information.

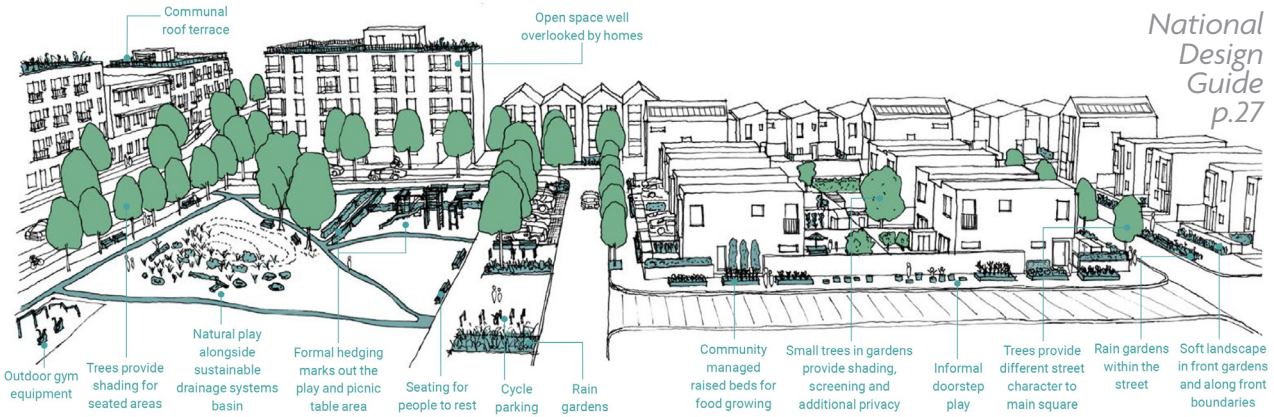
Compensation: This should only be considered as a last resort for unavoidable residual impacts that remain after avoidance and mitigation measures. It should only be considered in exceptional circumstances.

Recommendation:

All new developments must demonstrate that they have adhered to the Biodiversity Mitigation Hierarchy and have achieved a >10% net uplift in biodiversity in line with the Environment Bill.

2. Water Management

2.1 The new National Design Guide states that "in well designed places, water features form part of an integrated system of landscape, biodiversity and drainage. This includes new water features that manage drainage and existing watercourses. Together with green and brown roofs, swales, rain gardens, rain capture and other drainage, water features create multifunctional 'green' sustainable drainage systems."



National Design Guide p.27

Brighton & Hove Planning Advisory Notice on Food Growing and Development

In 2011 Brighton and Hove Council introduced Supplementary Planning Guidance[16] for provision of space to grow food on new developments, including but not limited to: community gardens, allotments, roof gardens, private gardens and orchards. The guidance advises developers to:

- Give early consideration in landscaping proposals to the location of food growing spaces, the use of productive trees, other edible planting, together with structures needed to facilitate food growing, such as storage for tools and equipment, water supply and irrigation e.g., water butts that can be integrated into a cohesive design.
- Note that there are very few development proposals which could not find some space for some food planting.
- Landscape design which offers flexibility will enable garden space to be adapted for food growing or general planting according to occupiers' interests in the future.
- Vacant sites awaiting redevelopment may be suitable for 'meanwhile' gardens with potential benefits for the community in the interim.
- Commit to entering into and adhering to planning conditions/Section 106 obligations requiring on-going management and maintenance.

3. Community Food Growing

3.1 There is a huge demand for space to grow food in Frome, and a local appetite for locally grown produce. At the time of writing there is currently a 5-year waiting list at Frome's Allotment Association; and a 100-person waiting list to sign up to Vallis Veg's box scheme.

3.2 As Brighton and Hove's supplementary planning guidance notes, "there are very few development proposals which could not find some space for some food planting."

Recommendation: All developments to include allocated space for communal food growing

4. Tree Planting

4.1 The revised National Planning Policy Framework (NPPF)[17] states that:
"Planning policies and decisions should ensure that new streets are tree-lined, that opportunities are taken to incorporate trees elsewhere in developments (such as community orchards), that appropriate measures are in place to secure the long-term maintenance of newly planted trees, and that existing trees are retained wherever possible."

4.2 Frome Town Council is planting thousands of trees through its Wild About Trees initiative, including developing "tiny forests" in some of Frome's open spaces.

Recommendations:

- New residential streets to be "tree lined" in line with NPPF, with further trees planted in community orchards and gardens
- Developers to liaise with Frome residents and FTC's Wild About Trees officer to identify opportunities for planting projects and maintenance

Left: A family plants a tree at one of the first community planting days as part of Frome Town Council's Wild About Trees Initiative

[16]https://ww3.brighton-hove.gov.uk/sites/brighton-hove.gov.uk/files/downloads/ldf/PAN6-Food_Growing_and_development-latest-Sept2011.pdf
[17]https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf