

SUSTAINABILITY STATEMENT

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Overview

This report has been produced to support a planning application for a development of 4 holiday cottages on the Oakwood West Estate, West Sussex. The proposals under the control of Chichester District Council.

The report sets out policy requirements for Sustainability, and how the proposals will comply with and where possible exceed these requirements.

The proposals have been developed with sustainability at the core of the design approach, with the aim of meeting and exceeding all relevant design standards.

Planning Policy

National Planning Policy Framework (NPPF)

The NPPF states that 'significant weight should be given to outstanding or innovative designs which promote high levels of sustainability or help raise the standard of design more generally in an area, so long as they fit in with the overall form and layout of their surroundings.' (Paragraph 134 b).

In terms of rural housing, the NPPF states that 'To promote sustainable development in rural areas, housing should be located where it will enhance or maintain the vitality of rural communities. Planning policies should identify opportunities for villages to grow and thrive, especially where this will support local services.' (Paragraph 79).

Chichester Local Plan 2014-2029

Policy 40 of the Chichester Local Plan 2014-2029, requires all planning applications for new development to demonstrate that energy consumption will be minimised, and the amount of energy supplied from renewable resources will be maximised to meet the remaining requirement.

Policy 40 - Sustainable Design and Construction

For all new dwellings or for new non-domestic buildings, evidence will be required by the developer to demonstrate that all of the following criteria have been considered (proportionate to the scale of development):

1. How the proposal aims to protect and enhance the environment, both built and natural. Where this is not possible, how any harm will be mitigated.
2. The proposal achieves a minimum of 110 litres per person per day including external water use.



3. New development complies with Building for Life Standards or equivalent replacement national minimum standards, whichever are higher by ensuring it is accessible to all, flexible towards future adaptation in response to changing life needs, easily accessible to facilities and services; and takes into account the need for on-site waste reduction and recycling;
4. Where appropriate, the proposals apply sound sustainable design, good environmental practices, sustainable building techniques and technology, including the use of materials that reduce the embodied carbon of construction and the use of re-used or recycled materials.
5. Energy consumption will be minimised, and the amount of energy supplied from renewable resources will be maximised to meet the remaining requirement, including the use of energy efficient passive solar design principles where possible.
6. The proposals include measures to adapt to climate change, such as the provision of green infrastructure, sustainable urban drainage systems, suitable shading of pedestrian routes and open spaces and drought resistant planting/landscaping.
7. The historic and built environment, open space, and landscape character will be protected and enhanced.
8. The natural environment and biodiversity will be protected and/or where appropriate provision will be made for improvements to biodiversity areas and green infrastructure.
9. The development is appropriate and sympathetic in terms of scale, height, appearance, form, siting and layout and is sensitively designed to maintain the tranquillity and local character and identity of the area; and
10. The reduction of the impacts associated with traffic or pollution (including air, water, noise and light pollution) will be achieved, including but not limited to the promotion of car clubs and facilities for charging electric vehicles.

Chichester District Council Interim Position Statement for Housing Development, November 2020

Development proposals shall not compromise on environmental quality and should demonstrate high standards of construction in accordance with the Council's declaration of a Climate Change Emergency. Applicants will be required to submit necessary detailed information within a Sustainable Construction and Design Statement or chapter within the Design and Access Statement to include, but not be limited to:

- Achieving the higher building regulations water consumption standard of a maximum of 110 litres per person per day including external water use;
- Minimising energy consumption to achieve at least a 19% improvement in the Dwelling Emission Rate (DER) over the Target Emission Rate (TER) calculated according to Part L of the Building Regulations 2013. This will be achieved through improvements to the fabric, low-carbon energy and heating solutions and ventilation systems of the dwelling;
- Maximising energy supplied from renewable resources to ensure that at least 10% of the predicted residual energy requirements of the development, is met through the incorporation of renewable energy production; and
- Incorporates electric vehicle charging infrastructure in accordance with West Sussex County Council's Car Parking Standards Guidance. Proposals that can commit to delivery of EV charging infrastructure that exceeds policy requirements will be given strong positive weight.



Low-carbon design and technologies

The proposals have been developed with sustainability at the core of the design approach.

Relevant Building Regulations documents include:

- Approved Document L1: conservation of fuel and power in new dwellings
- Approved Document G: sanitation, hot water safety and water efficiency
- Overheating: Approved Document O

The table below shows the target u-values for the various building elements, as compared with Building Regulations compliant u-values. The percentage improvement on Building Regulations

STABLE CONVERSION			
Building Element	Building Regulations	U-values	Improvement on Regulations
Ground Floor (w/m2)	0.25	0.16	36%
External Wall (w/m2)	0.30	0.20	35%
Roof (w/m2)	0.20	0.16	20%
Doors (w/m2)	2.0	1.6	20%
Windows (w/m2)	2.0	1.2	40%
Air leakage rate m3 (h/m2) @ 50	10.0	5.0	50%

The buildings construction will use a **'fabric first'** approach to minimise their energy consumption in use. High levels of insulation will help to retain heat during winter and prevent heat gain during the summer.

The buildings energy performance will be modelled by an **accredited Elmhurst Energy Assessor** and **Energy Performance Certificates** produced for each of the 4 holiday cottages.

A fabric first approach starts with highly insulating the homes, meaning that they require lower levels of heating and cooling when in use. Walls, floors and roofs will be **highly insulated** using timber framing technology. Windows will be **argon filled Low E double glazing**.

Use of renewable energy supplied from renewable resources will be maximised, with a minimum of at least **40%** of the predicted residual energy requirements of the cottages being met through the incorporation of **renewable energy** on site with any shortfall being made up by off-site solutions.

The most appropriate options for this supplementary requirement for heating and cooling systems will then be evaluated, with renewable technologies such as **Air Source Heat Pumps, wood burners** and / or a **biomass boiler** being the preference.

TIMBER LODGES			
Building Element	Building Regulations	U-values	Improvement on Regulations
Ground Floor (w/m2)	0.25	0.14	44%
External Wall (w/m2)	0.30	0.18	40%
Roof (w/m2)	0.20	0.14	35%
Doors (w/m2)	2.0	1.6	20%
Windows (w/m2)	2.0	1.2	40%
Air leakage rate m3 (h/m2) @ 50	10.0	5.0	50%

Electric Vehicle charging points will be provided for all properties which will exceed the requirements of West Sussex County Council Guidance on Parking at New Developments (September 2020).

Rainwater harvesting in the form of water butts, to be used to water gardens.



On-site micro-generation in the form of **roof-mounted photovoltaic cells** will be considered to help meet the energy demands of the holiday cottages.

Any white goods installed will be **Energy Savings Trust ratings of 'A'**.

The cottages will exceed the higher building regulations water consumption standard with **a maximum of 105 litres per person per day** including external water use. All WCs low flush and taps will be low flow. Appliances will also be chosen for their reduced water use.

Green roofs have been incorporated where possible to reduce rainwater run-off, provide wildlife habitat and soften the built forms into the surrounding landscape.

Canopies, pergolas and roofs will be designed to **reduce solar gains** during the hot weather conditions.

Cycle parking will be provided in accordance with West Sussex County Council Guidance on Parking at New Developments (September 2020). In addition, each home will be provided with an electric cycle charging point.

Construction materials will be **sourced as locally** to the proposal site as possible. All cladding, fencing and beams will be from **timber grown, processed and milled on site on the Oakwood West Estate**. This will **reduce the embodied carbon** in the materials by minimising transportation emissions.

Lime mortars will be used for bedding face brickwork. Unlike Portland cement, natural hydraulic lime mortars absorb carbon during the curing process and are therefore far less environmentally damaging.

Construction trades and craftspeople will be **employed from the local area**, drawing on understanding of local building techniques and also supporting the local economy.

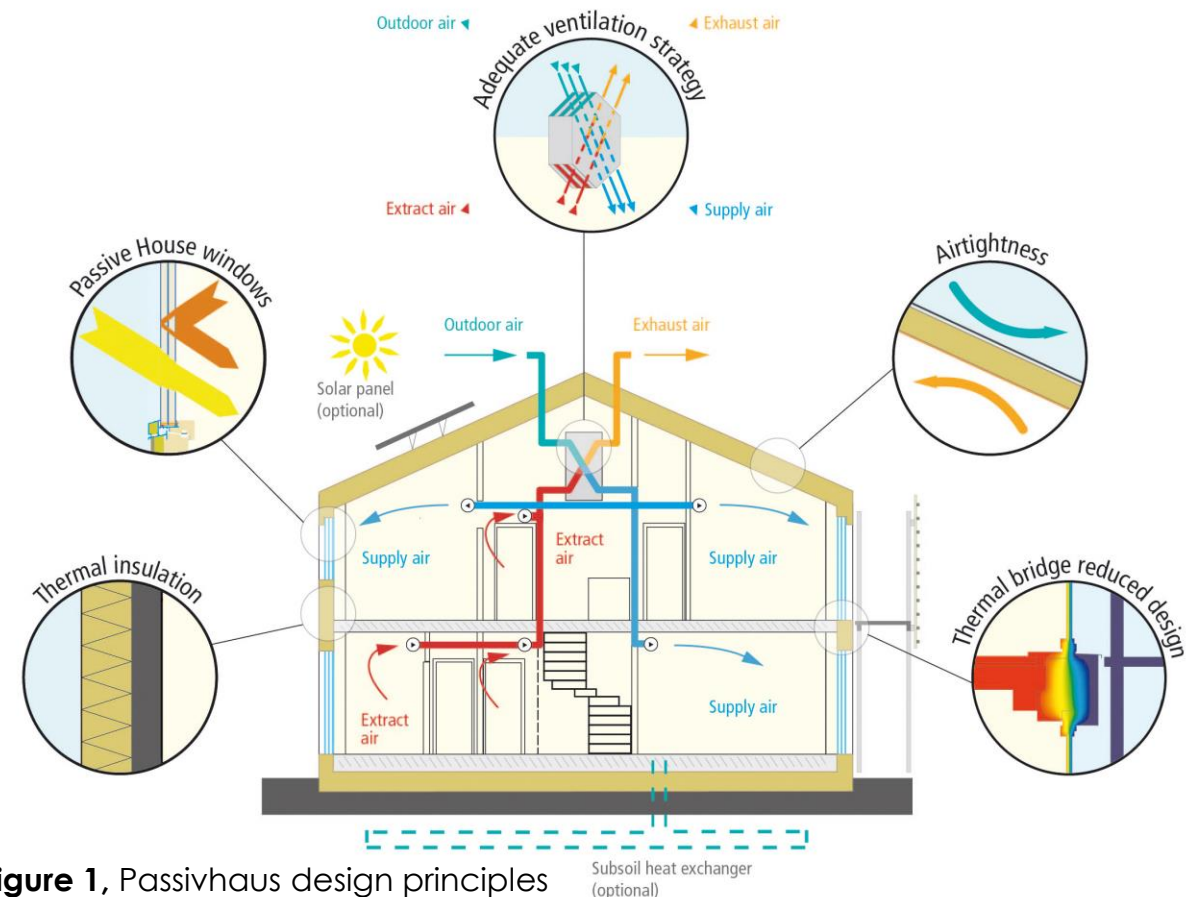


Figure 1, Passivhaus design principles

Landscape-led Design

Landscape design will work in harmony with the environmental sustainability objectives; the Landscape design will follow the principles of Water Sensitive Urban Design.

Hard surfacing will be constructed using natural, permeable surfaces and sub-bases where possible, to help attenuate rain and storm water.

The use of green roofs assists with water management on site. Sedum or wildflower meadow roofs will absorb rainwater to grow. This not only reduces rainwater run-off, but also provides additional habitat on site, visually integrates the built form into the rural surroundings, as well as providing many health benefits that additional greenery will bring to the visitors.

To provide opportunities for sustainable management of organic and garden waste through composting.

Any vegetation requiring clearance can either be chipped and re-used as mulch in proposed planted areas, or used as log piles for instance, to create habitat areas for wildlife.

Extensive tree planting will be undertaken on site as part of landscaping proposals and the development is expected to provide a net increase in biodiversity with a net gain in habitats on site of 48%.

Conclusion

Achieving exceptional standards of Environmental Sustainability is a key objective of the design brief. The proposals show a unique opportunity to achieve sustainability both technically and environmentally in the development's design, but also socially in its location.

Environmentally, the proposed holiday cottages will achieve very high standards with Energy Efficiency and Environmental Impact Ratings of 'A'. The buildings' construction will use 'fabric first' principles to reduce the embodied energy in construction and in use.

The site is located in convenient proximity to public transport and cycle routes and is inherently highly sustainable in accessibility terms with easy access to many tourism sites.

The buildings reflect the rural setting and the character of the local area, and are designed to provide flexible and adaptable accommodation, supporting guests of different ages and physical needs.

As a practice, we value the positive impact that we can make. Environmental sustainability goes hand-in-hand with providing a thriving tourism business over the long term.



References

National Planning Policy Framework, Ministry of Housing, Communities & Local Government, 2021.

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Chichester Local Plan, Key-Policies 2014-2029,

https://www.chichester.gov.uk/media/24759/Chichester-Local-Plan---Key-Policies-2014---2029/pdf/printed_version.pdf

Chichester District Council Interim Position Statement for Housing Development, November 2020,

<https://www.chichester.gov.uk/interimpolicystatement>

Figure 1 – Passivhaus design principles,

https://passiv.de/en/02_informations/02_passive-house-requirements/02_passive-house-requirements.htm

Cycle and car parking guidance: West Sussex County Council Guidance on Parking at New Developments (September 2020)

https://www.westsussex.gov.uk/media/1847/guidance_parking_res_dev.pdf