

SUSTAINABILITY STATEMENT

NORTHCOURT LODGE, 65 NORTHCOURT AVENUE, READING, RG2 7HF.

**AMENDMENT TO CONSENT NO. 201141,
PROPOSING CONSTRUCTION OF A 13 BEDROOM CARE BUILDING (CLASS C2)
WITH ANCILLARY ACCOMMODATION AND ASSOCIATED WORKS.**

Ref: 2685/SS – March 2022

Prepared by:

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1. Introduction

- 1.1 This Sustainability Statement relates to the proposed construction of a 13 bedroom care building (Class C2) with ancillary accommodation and associated works.
- 1.2 The report is in response to Reading Borough Council's adopted Supplementary Planning Document (SPD) and the National Planning Policy Framework (NPPF).
- 1.3 The report discusses areas of renewable use as well as recycling and more sustainable practices.

2. Planning Framework

The strategy for the proposed development has been considered with the following policies in mind: -

- 2.1 The NPPF has relevant paragraphs with regards to meeting the challenge of climate change and flooding and places a reliance on the use of renewable infrastructure where viable.
- 2.2 There is also a desire to encourage design features which will reduce the requirement for mechanical heating and ventilation solutions.
- 2.3 For full planning applications, the Sustainability Statement need not provide full details, but should set out an explanation in broad terms how the proposed development will meet the requirements of policy framework.
- 2.4 To reduce carbon emissions and secure sustainable energy solutions, all new developments over 100 square metres gross or one or more dwellings should incorporate the generation of energy from renewable or low carbon sources equivalent to at least 10% of predicted energy requirements, unless it has been demonstrated that this would make the development unviable.
- 2.5 The Supplementary Planning Document (SPD) explains planning requirements with regard to energy, climate change, water management and waste reduction. It is intended to supplement the policies of the Local Plan, particularly: -
 - CC2: Sustainable Design and Construction
 - CC3: Adaptation to Climate Change
 - CC4: Decentralised Energy
 - CC5: Waste Minimisation and Storage
 - EN18: Flooding and Drainage
 - H5: Housing Standards

3. Building Regulations

- 3.1 The 2013 (with additional 2016 + 2018 + 25th of February 2022) changes to the approved document L of the Building Regulations was introduced with similar aims of reducing carbon dioxide emissions.
- 3.2 This document takes into account the buildings orientation, fabric, layout, design and energy use and assesses the building on a pass/fail model.
- 3.3 Given the rigorous nature of the approved document of the Building Regulations standards, this is relevant with regards to this proposal.

4. Design Solution

The evaluation of our proposal will be in several stages:

- Design of the fabric
- Thermal bridging
- Passage of air / ventilation
- Energy requirement
- Energy mitigation
- Water conservation
- Energy efficient appliances
- Landscaping
- Sustainable drainage systems (SuDS)
- Waste reduction

5. Fabric Design

5.1 Walls

Wall construction will be full cavity construction with 50mm Celotex or equivalent rigid insulation to the cavity with the intention to better the current u value requirement at around 0.27W/m²K.

5.2 Roof

The roof will be constructed using traditional methods with quilt insulation and therefore the insulation value will relate to the thickness of product used. A 400mm layer will better the current value for a pitched roof at 0.11W/m²K (100mm laid within joists and 300mm laid over).

5.3 Floors

The ground floor is a key part of the strategy and the intention is to use 150mm rigid insulation to reduce downwards heat loss through the fabric from the heat source, rated at around 0.12W/m²K.

5.4 Windows – Natural Day Lighting

The windows are to be UPVC frame with double glazed units low E/Argon filled, rated at around 1.4W/m²K.

Coupled with solar gain, natural day lighting can reduce the energy demand for new buildings through the controlled entry of natural light through windows, skylights and other building envelope components. The day lighting benefits of large areas of glazing need to be considered against the thermal and other properties of glazing.

External doors are to be composite frame, rated at around 1.00W/m²K.

5.5 Ventilation

Maximising natural ventilation is appropriate in the design and construction and is considered a more sustainable option than air conditioning systems, albeit that the building will be able to be made airtight to reduce energy demand for heating or cooling in extreme weather. The method is to create opportunities for cross ventilation. Openings on opposing (or even adjacent) walls can draw air through a space. Windows and patio doors are to be openable and trickle vents will be installed to provide controllable background ventilation.

6. Thermal Bridging

- 6.1 E2 – keystone Hi-Therm Lintels with a Psi-value of 0.05W/mK + 50mm Celotex or equivalent for partial fill cavity.

7. Passage of Air

7.1 Detailing

The project will be constructed using the 'Robust Standard Detail' suite of details ensuring a good level of design and workmanship.

- 7.2 The building will require air-testing and the above details will ensure that the design meets the air leakage requirements. This is controlled through the SBEM energy predicted assessment and post assessment.

8. Energy Requirement

- 8.1 Central Heating. This will be via Air Source Heat Pump (ASHP) to provide heating.
- 8.2 Hot water. Hot water system is controlled through the installation of ASHP and it is proposed to drastically reduce energy requirements for the hot water usage within the building.
- 8.3 Vehicle charging points to be installed, type: Wallpod.EV 32A Type 2 Tethered cable charging unit to be specified.

9. [Energy Mitigation](#)

- 9.1 The building has very good access to natural light and the building is well within the width at which natural light becomes less effective. This means that the building can, when possible, use natural light in lieu of artificial light.
- 9.2 When artificial light is required, the building will rely on led fittings which use up to 70% less energy than normal fittings. It is our standard policy to design for all fittings to be low energy, which exceeds the current building control requirement of four in ten being low energy.
- 9.3 The building will be well ventilated locally with openable windows. The only mechanical ventilation envisaged is in the wc and bathrooms which as a requirement under the Building Regulations is unavoidable.

10. [Water Recycling](#)

- 10.1 This is addressed within the Building Regulations.
- 10.2 Water use per person per day not to exceed 110 litres.
- 10.3 Hot water heating – 150 litre cylinder. Maximum storage losses of 1.70KW per person per day.
- 10.4 Water butt to collect rainwater for use in the garden to be installed.

11. [Energy Efficient Appliances](#)

- 11.1 Appliances providing heat, light and other essential services are major consumers of energy. The careful choice of appliances will reduce energy demand and therefore costs, significantly. The building proposed should as far as possible use the most energy efficient appliances, in particular energy and water efficient white goods.

12. [Landscaping](#)

- 12.1 Landscaping has been carefully considered in the design of garden space. If solar gain is needed, any trees that need to be retained as part of the development should ideally be sited in relation to the development so that they are not overshadowing the new development.
- 12.2 New planting will help avoid overheating in the afternoon. If solar gain is not needed, trees can provide important cooling benefits and help the building to adapt to a warming climate.

13. Sustainable Drainage Systems (SuDS)

- 13.1 Implementation of a SuDS approach, as opposed to conventional drainage systems will provide several benefits and is a requirement for new development. This will be appropriately designed, constructed and maintained SuDS to improve the sustainable management of surface water on site by reducing peak flows to the sewer and reducing the risk of flooding downstream.
- 13.2 SuDS are made up of one or more structures built to manage surface water runoff and are a mandatory requirement for new development according to national guidance. Used in conjunction with good site management, these systems will prevent flooding and pollution.
- 13.3 The SuDS design will ensure that development does not result in any additional surface water run-off when compared to the site pre-development. SuDS improve water quality and can provide other social, environmental and economic benefits for the owner (as outlined in Policy EN18: Flooding and Sustainable Drainage Systems of the Local Plan) and in line with the Government's Technical Standards.

14. Waste Reduction

- 14.1 Policy CC5 of the Local Plan requires that development will demonstrate measures to minimise the generation of waste in the construction, use and life of buildings. The proposals are to promote a more sustainable approach to waste management, including re-use and recycling of construction waste and promotion of layouts and designs that provide adequate space to facilitate waste storage, re-use, recycling and composting.
- 14.2 Low-impact building materials include timber, earth, straw, secondary aggregates and recycled products. Plastic, steel and aluminium, for example, are higher-impact materials. Where possible, materials should be produced locally and from sustainable or certified sources.

Waste hierarchy

- 14.3 There are three basic strategies for dealing with waste: reduce (i.e. avoid or prevent), re-use, recycle and only as a last resort, dispose.

15. Conclusion

- 15.1 Where energy is used, it is minimised by the layout and design of the building and the use of technologies designed to use less energy.
- 15.2 Water use to be minimised, heat is localised and provided efficiently, and lighting is of a low energy type.

- 15.3 Above all, the requirements enforced by building control will insist on good building fabric, good technology and renewable energy sources, which we fully embrace.
- 15.4 The building will achieve a 25% improvement over the Target Emission Rate, which shows compliance with ENE1 - Level 4 of Code for Sustainable Homes.

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