



Sustainability Statement

Garrard House Reading

Ecofirst Consult
Sustainability and Energy Consultants
49 High West Street
Dorchester
T 01305 897222
23 March 2015

Contents

Contents.....	1
Executive Summary.....	2
1 Sustainability.....	4
2 Sustainable Design & Construction SPD Checklist.....	6

Revision	-	1	2	3
Status	Planning	Planning		
Prepared by	Sara Bennett	Claire Stone		
Checked by	Claire Stone	Sara Mairs		
Approved by	Sara Mairs	Sara Mairs		
Date	23/03/2015	29/09/2015		

Executive Summary

Ecofirst Consult were appointed to complete a Sustainability Statement including a Code for Sustainable Homes Pre-assessment for the new build part of the development at Garrard House, Reading.

The Proposed Development

The development proposals consists of building 20 new apartments, with a mixture of 1, 2 and 3 bedrooms, on top of the existing building, Garrard House, an extension to the existing building with 5 new apartments on the existing fourth floor and 2 new storey's to form a further 15 apartments on the new fifth and sixth floors. The existing ground floor is to incorporate to space for the additional requirements for refuse, recycling and cycles.

Planning Requirements

Sustainable development is at the core of Reading Council's Community Strategy the key aims of the Community Strategy relevant to this section are:

- To encourage best practice in sustainable building design and construction;
- To ensure that new development is sustainable and well-designed, and incorporates measures that make a positive contribution to the environment; and
- To limit and respond to the impacts on climate change by reducing energy consumption and encouraging the use of renewable sources of energy.

As part of the Revised Sustainable Design and Construction Supplementary Planning Document, Policy CS1 of the Core Strategy is to be adhered to. For this development the scheme has the choice of 2 options;

- To meet 50% Code level 4 and 50% Code level 3 OR
- An overall score of 62.5%, along with the mandatory mid-way point for the mandatory energy criteria within ENE1

However, on 25th March 2015 the government issued a Ministerial Statement setting out the conclusion to the Housing Standards Review. This review aimed to simply government regulations and standards into one key set, driven by building regulations, setting out that:

From the date the Deregulation Bill 2015 is given Royal Assent, local planning authorities and qualifying bodies preparing neighbourhood plans should not set in their emerging Local Plans, neighbourhood plans, or supplementary planning documents, any additional local technical standards or requirements relating to the construction, internal layout or performance of new dwellings. This includes any policy requiring any level of the Code for Sustainable Homes.

The written Ministerial Statement withdraws the Code for Sustainable Homes (in England) so Local Authorities are not required to enforce it as a planning condition for new approvals. The Deregulation Bill was given Royal Assent on 26th March 2015.

This Sustainability Statement has been prepared to illustrate the measures applied to the proposed development with regards to sustainability.

The Sustainable Design and Construction Supplementary Planning Document within Appendix 5 has a Sustainability Checklist which covers areas of the Code for Sustainable Homes assessment and other sustainable

factors. It covers 22 questions within the CSH categories, the table and the answers relating to Garrard House are in Section 11 of this report.

Sustainability Measures

Sustainability measures will include:

- As per the Altered Core Strategy Policy CS15 Lifetime Homes standards will be designed to an appropriate number of units
- Low energy lighting internally and externally
- Good thermal envelope
- Minimise CO₂ emissions
- Efficient water fixtures to reduce potable water consumption
- Provision of good Transport, including Cycle Storage
- Brown Roof
- Protect and improve the quality of the environment
- Improve health and well-being, including daylighting, where feasible
- Low environmental impact of materials (achieving BRE Green Guide A rating, where possible)
- Excellent waste and recycling provision

SAP modelling has been completed to estimate the energy demand and to meet the energy requirements of Policy CS1. Ecofirst Consult's Energy Statement demonstrates that the emission rate of the new build elements is reduced by over 12% due to energy efficiency measures. Average daylight factor (ADF) have also been completed to aid the accuracy of the report.

1 Sustainability

Background

- 1.1 In the sustainable development policies summarised previously, the government has set various targets designed to reduce the economy's reliance on fossil fuels, reduce carbon emissions and improve the sustainability of new development. This is to be achieved through general measures such as:
- Improving construction standards to make buildings more energy efficient in use
 - Improving the sustainability of the construction materials used by reducing the overall embodied carbon content and reusing materials where possible
 - Reusing land and buildings that were previously developed and/or have fallen into disuse
 - Increasing the proportion of energy generated from renewable sources
- 1.2 This report is looking at the sustainability measures to be incorporated within the design of the proposed development at Garrard House, Reading.

Energy

- 1.3 The energy measures are broad and covering a number of elements. The Building Regulations and associated fabric energy efficiency targets ensure the calculated u-values provide the carbon compliance for the fabric energy efficiency. These designs reinforce the efficient use of energy and optimise the use of energy from the sun and limit heat losses.
- 1.4 Our energy target is a midway point between Code 3 (Building Regulations Pass) and Code 4 (19% improvement over Building Regulations). SAP modelling has shown an improvement of 12.4% over Building Regulations can be achieved, this is demonstrated in the Energy Statement.
- 1.5 The Fabric Energy Efficiency of any dwelling must be in line with Building Regulations 2013. SAP modelling has shown the Fabric Efficiency as an energy average 39.70.
- 1.6 The Average Daylight Factor (ADF) calculations carried out for the proposed development demonstrate a good Daylight factor, thus allowing more natural daylight into the habitable rooms. This then reduces the energy demand for lighting and the potential to optimise the energy from the sun to reduce the need for heating.

Transport and Amenities

- 1.7 In line with Reading Council's key objectives the development aims to secure sustainable travel patterns.
- 1.8 The proposed development will aim to provide safe and secure, enclosed cycle storage area.
- 1.9 The provision of cycle storage will promote the use of alternative use of transport.
- 1.10 Additionally Reading Station is positioned close to the site and is the major railway station and transport hub in Reading. Reading has links to London as well as other major cities.
- 1.11 The location of proposed development is in the heart of Reading's commercial area including a plethora of amenities.

Waste and Recycling Provision

- 1.12 The development shows an enclosed communal waste and recycling storage area. Reading Council collect refuse and recycling. The communal storage provides level access and a turning circle for future proof of occupiers.

- 1.13 The proposed development will promote resource efficiency via effective management and reduction of construction waste.

Pollution and Surface Water

- 1.14 The proposed development will aim to incorporate high efficiency Class 5 (<40mg/kWh) gas boilers, ensuring NO_x emissions are minimised.
- 1.15 The design of appropriate drainage system and assessment of surface water run-off calculations will mitigate the likelihood of any surface and ground water pollution.
- 1.16 The contractor should have best practise policies in regards to air (dust) and water pollution during the construction phase to minimise damage to the environment.

Health and Wellbeing

- 1.17 The average daylight factor (ADF) calculations have been completed to ensure that all rooms meet the desired target for allowing natural daylight into the rooms. The window size in relation to the room size is important to allow the natural daylight into a room for the occupiers to feel healthy.
- 1.18 The main entrance and internal entrances are to have a level threshold and therefore improving the future adaptability of the apartments.
- 1.19 As per the Core Strategy Policy CS15 Lifetime Homes standards will be designed to an appropriate number of units.

2 Sustainable Design & Construction SPD Checklist

Appendix 5: Table A5.1

The Sustainability checklist for Code for Sustainable Homes is below with the review of the scheme.

Energy / CO₂ <i>Aim: To conserve energy, in particular carbon dioxide emissions and maximise the use of energy efficiency techniques</i>	
1. How has the development been designed to optimise the use of the energy from the sun and limit heat losses	The SAP modelling has used measured the orientation and calculated improved u-values for the thermal envelope of the building to reduce heat loss. The large glazed areas of the dwellings optimise the energy of the sun
2. How has the development been designed to optimise natural daylighting, energy efficient lighting, external lighting and natural ventilation	The internal lighting now forms part of current Building Regulations to ensure all lighting is low energy. It is anticipated that all external lighting is also to be low energy. The natural daylighting and natural ventilation is from the large glazed areas, with openable ventilation within each room
3. How will the design of the building make efficient use of energy	The SAP modelling has shown the improved u-values of the thermal envelope has surpassed the Building Regulations in terms of efficient use of energy
4. Has local energy generation from renewables been considered as part of the scheme	The Energy Statement is based on the SAP modelling that has looked at all sources of energy to find the most suitable for the scheme
5. How have cycle storage facilities been considered	The cycle provision has been considered in detail, in terms of space, security and proprietary system
Water <i>Aim: To improve the efficiency in the use of water, conserve water resources and minimise vulnerability to flooding</i>	
6. How will the development incorporate the use of water saving devices to achieve a maximum consumption of 105L pppd	With improved products on the market with low flush WC's, flow restrictor's on the shower and taps and a lower capacity bath, the target of 105 l/p/d should be easily met
7. How will the development incorporate recycling water and reduce the use of potable water	Due to the roof space and lack of outdoor space, it is not feasible to collect and recycle the greywater to make use of internally within the dwellings
8. Has the collection, treatment and re-use of grey water been considered	Due to the new apartments forming an extension to an existing block, it is not feasible to incorporate enough greywater to collect and reuse within the potable demand
Materials <i>Aim: To retain local character and promote the use of materials with a low environmental impact</i>	

9. How will the selected materials help retain the local character, ensure long life and ensure a low environmental impact	Planning policy has governed the materials for local character due to the location within the city centre for apartments. The development will seek to reduce the environmental impact of buildings materials through use of an environmental preference or profiling system. (eg. seek to achieve the BRE's Green Guide Rating of A+ to D for at least 3 of the main building elements)
Surface Water Run-off <i>Aim: To reduce flooding, pollution and other environmental damage</i>	
10. How has the development considered flooding and pollution	The latest online Environment Agency (EA) flood zone maps indicate that the site lies within Flood Zone 1 and therefore a site specific Flood Risk Assessment (FRA) is not required to consider the risk of flooding. The development takes into consideration the additional run-off volume, with the inclusion of suitable depth of substrate/gravel and brown roof for attenuation purposes. The brown roof will mitigate and reduce pollution and run-off quantities.
11. Has the development considered the use of SUDS	The proposed brown roof will act as an SUD, thus mitigating and reducing pollution and run-off quantities.
Waste <i>Aim: To minimise the production of waste and maximise the re-use and recycling</i>	
12. How will the development minimise waste sent to landfill	The scheme is to produce a Site Waste Management Plan, setting appropriate targets
13. How will the development make maximum use of construction and demolition waste	The scheme is to produce a Site Waste Management Plan, which aims to predict the waste volumes and look into ways of reducing the waste and incorporating the waste into the build
14. How will the development make maximum use of re-used and recycled materials	The scheme is to produce a Site Waste Management Plan, setting targets and benchmarks to look at re-use of materials and if any recycling is possible
15. How will the provision be made for storage and recycling of waste for all users of the site	Differing contractors have site rules and regulations to follow that ensure facilities are in place for recycling, waste and hazardous waste areas are clearly marked and accessible
Pollution <i>Aim: To minimise damage to the environment through air, ground/surface water, land, noise or light pollution</i>	
16. What measures have been incorporated to ensure that noise and light pollution will be minimised throughout the development	In terms of light pollution, any external lights are to be designed to minimise light pollution
17. What measures have been incorporated to reduce nitrogen oxide emissions and reduce the GWP of insulants	The scheme is to incorporate individual gas boilers with a lower than class 5 emissions of less than 40mg/kWh. The contractors also have to only incorporate insulants that have a GWP of less than 5

18. What measures have been incorporated to reduce the release of pollution into the atmosphere	It is intended the contractor is to commit to following Best Practice Policies for water and air pollution during the construction phase. The design of the development ensures low energy demand and low emissions from the heating and hot water demand
Health & Wellbeing <i>Aim: To improve the quality of life in homes through good daylighting, improved sound insulation, provision of outdoor space with good accessibility</i>	
19. How has the development been designed to maximise natural lighting, reduce the likelihood of noise complaints, incorporate private outdoor space and ensure the layout of the development can be easily adapted to meet the needs of future occupants	The development uses large glazing areas to promote natural daylighting. Where feasible the development will seek to achieve an improvement over Building Regulations for party walls and floors, thus reducing the likelihood of noise complaints. Due to the extension of the existing space, it is not possible for outdoor space. Accessible entrance ways are mandatory within the Lifetime Home Assessment, thus addressing CS15 and allowing ease of movement for occupiers.
Management <i>Aim: To manage the site in an environmentally and socially considerate manner</i>	
20. What measures have been taken to ensure the construction of the site is managed in an environmentally and socially considerate manner, mitigating environmental impacts	Registration with the Considerate Constructors Scheme and aiming for compliance ensures the site is managed in a socially constructive manner. Through the use of Best Practise Policies for water and air pollution, also with monitoring and recording the energy use and water use on site during the construction phase, ensures the site is managed to reduce the environmental impact
21. How has the development been designed to ensure people feel safe and secure	Where feasible, the development will seek to achieve section 2 (Physical Security) measures from the Secured By Design scheme. Advice from a Architectural Liaison officer will be sought, and to ensure security and safety of residents, the appropriate measures will be incorporated within the design.
Ecology <i>Aim: To retain, protect and enhance wildlife habitats and natural features</i>	
22. How have the wildlife habitats and natural features on and adjacent to the site been considered and how will they be retained, protected and enhanced	Due to the extension of the existing building, there are no wildlife habitats or natural features to be retained or protected. The proposed 'Extensive' Brown Roof will be introduce Bio-diversity to the site.