

**37, Alpine Street,
Reading, RG1 2PY**



Sustainability Statement

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Report produced by -

Ian Bacon
Director
Blewburton Limited
23 St Martins Street
Wallingford
Oxfordshire
OX10 0AL

Tel: 01491 825337

E-mail: ian.bacon@blewburton.com

Web: www.blewburton.com

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1.0 Introduction

- 1.1 Blewburton Limited has been commissioned to prepare a Sustainability Statement for the conversion of the basement/lower ground floor at 37, Alpine Street, Reading, RG1 2PY, to form a separate 2-bedroom flat.
- 1.2 As licensed BREEAM, Home Quality Mark, Code for Sustainable Homes and energy assessors of several years standing, Blewburton Limited has considerable expertise in all issues of sustainability.
- 1.3 The site is located in an urban location approximately $\frac{3}{4}$ of a mile south of the town centre of Reading and is characterised by terraces of Victorian housing
- 1.4 The building on site was originally a single dwelling over four floors, but is now being split and a two-bedroom apartment created in the basement/lower ground floor, with a small extension added to facilitate this. Other than the extension and the sealing up of the stair access to the current upper floors, there is little additional work being undertaken internally.
- 1.5 Externally, there will be access to the long rear garden for the new apartment, providing private space and a secure location for the storage of bicycles.
- 1.6 The existing site area and location is shown in the aerial photo in Figure 1 below, with the proposed site location plan shown in Figure 2.



Figure 1: Aerial photo of site location and area



Figure 2: Proposed site location plan

2.0 Proposed Approach to Sustainability

2.1 This statement sets out the approach that the applicant is proposing to adopt to ensure that the proposal meets high standards of sustainability. The report includes a discussion of the full range of sustainability issues as shown below:

- Energy & carbon emissions
- Water conservation
- Flood risk & surface water management
- Ecology & biodiversity
- Waste & pollution
- Materials selection and sustainable construction methods
- Security
- BREEAM applicability

2.2 This will demonstrate that this proposed development will meet, as far as is reasonable, the requirements of the Reading Borough Council (RBC) Local Plan.

3.0 Energy Conservation and Carbon Emissions

- 3.1 It is recognised that the generation of energy to heat, light and cool buildings is responsible for approximately half of the total CO₂ emissions of the UK. Part L of the Building Regulations requires a minimum standard of energy efficiency in new and refurbishment development and compliance with this will be delivered at this site.
- 3.2 The approach to compliance with Part L of the Building Regulations only relates to new build elements and installations, so will only apply to the small rear extension, where a fabric first strategy is proposed. The energy efficiency measures associated with this are listed below:
- Ground floor U-value of 0.18;
 - External wall U-value of 0.18;
 - Roof U-value of 0.15;
 - High specification, triple-glazed windows, glazed doors & roof lantern, all with a U-value of 1.0;
 - All new lights installed will be of the low energy variety, with external lights featuring daylight sensors.
- 3.3 The existing heating system is recently installed, efficient, point of use electric heaters with integral time and temperature controls and as the UK electricity grid continues to utilise more and more electricity from low and zero carbon sources, this is the most appropriate heating system for a small dwelling such as this and will therefore be retained (and extended into the extension. It makes no sense to replace this fairly recently installed system with a gas based alternative as in time, this will only lead to higher carbon emissions. In addition, air source heat pumps, another alternative, are far more suited to larger properties with far higher heating requirements.
- 3.4 The use of passive solar design has been considered and where possible good levels of glazing have been designed in to the proposal to allow for natural light and heat penetration, without causing a summertime overheating issue. Where artificial light is required, the focus is on the provision of the energy efficient lighting systems as appropriate to locational requirements.
- 3.5 The option to utilise solar energy technologies has also been considered, however, the rear located flat roof is on the northern side of the building and therefore totally shaded, rendering solar technologies unsuitable for this dwelling.
- 3.6 'White Goods' the – fridge-freezer, washing machine and dishwasher – are already in situ and are fairly recent in specification with good scores under the EU Energy Labelling Scheme. Again, it makes no sense to replace these items as they are neither old or poorly performing, so they will be retained.

- 3.7 Externally, a rotary dryer will be installed to supply provision for the natural drying of clothes.
- 3.8 Any external lighting fitted will include daylight detection fittings, to ensure lights are not left on when not required.
- 3.9 In summary, the use of energy conscious design principles and a fabric first approach means that the dwelling should remain energy efficient for its entire lifetime.

4.0 Water Resource Management

- 4.1 The UK has a poor record in being profligate with its abundant water resource and the South-East of England is recognised as suffering from water stress, therefore, it is important that for new development water efficient products are utilised.
- 4.2 The specifications of the water using products for this dwelling are as for the in-situ products that are all to be retained (and enhanced where possible). An assessment of the efficiency of the dwelling domestic water-consuming components has been undertaken using the Building Research Establishment's water calculator.
- 4.3 The water consumption (L/person/day) for the proposed dwelling shows a figure of 95.40l/p/d with the following specification with flow rates controlled by flow restrictors or aerators (where required). This is below the 105.00l/p/d required under RBC Local Plan policy H5:
- Dual 6.0/4.0 litre flush WC
 - Shower average flow rate of 8.0L/min
 - Basin average tap flow rate of 3.0L/min
 - Kitchen tap average flow rate of 6.0L/min
 - Bath average overflow capacity of 152 litres
 - Washing machine water use of 4.86l/kg dry load
 - Dishwasher water use of 0.85l per place setting
- 4.4 Externally, a rainwater harvesting butt for external watering will be supplied, attached to suitable downpipe and with a lid and tap included.

5.0 Flood Risk & Surface Water Management

- 5.1 The Environment Agency's (EA) Flood Mapping for the area shows the site is located within an area considered to be of low risk from flooding from both rivers and surface water – see <https://check-long-term-flood-risk.service.gov.uk/map?easting=471585&northing=172571&map=RiversOrSea> and the image below.

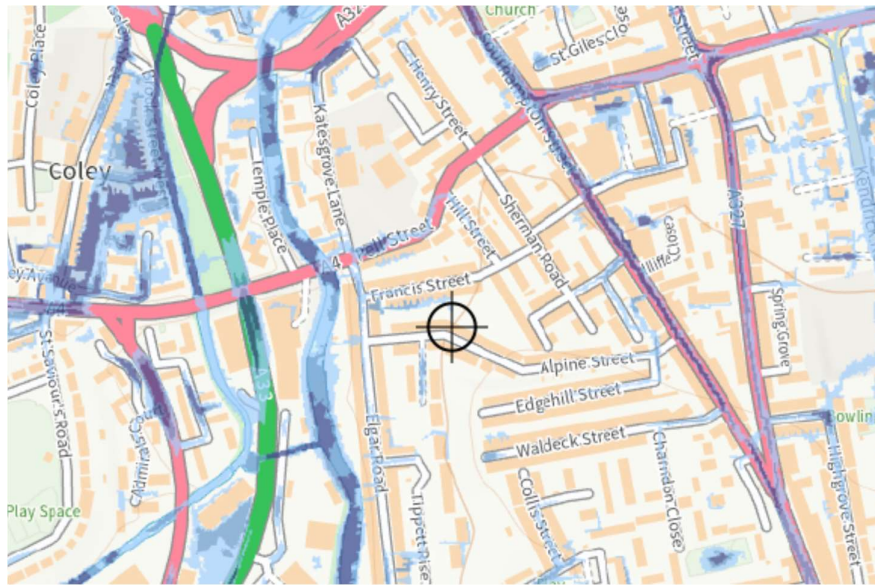


Figure 3: EA flood risk map for site and surrounding area

- 5.2 Given the limited nature of this project, a full flood risk assessment and surface water-runoff strategy has not been required or developed, with the limited additional run-off arising from the small extension to be fed into the existing drainage network, which is will have an additional soakaway added and will be perfectly sufficient for the limited additional input arising.

6.0 Ecology & Biodiversity

- 6.1 The existing site is currently occupied by a single dwelling with a long, fairly thin rear garden and a small paved area to the front. The rear garden is currently laid to false turf, with a few bushes slightly overhanging from neighbouring properties. As such, the site can be regarded as being of low ecological value and will be retained as such. Images of the site from ground level are shown below in figures 4 & 5.



Figure 4: Looking south, down the garden

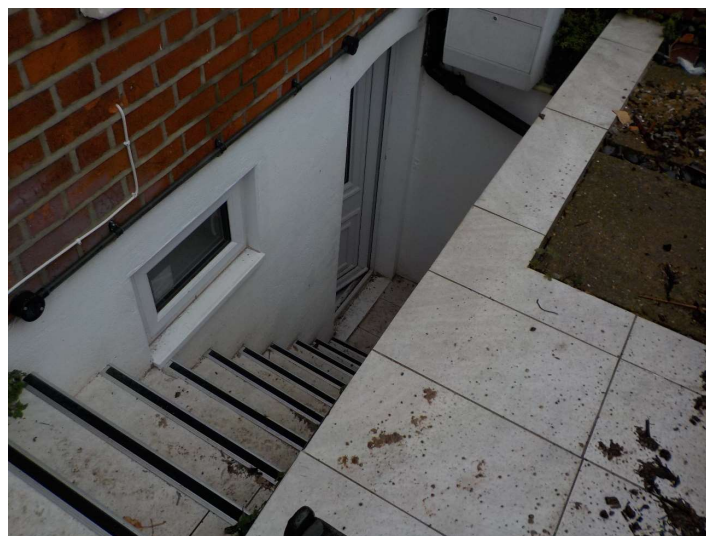


Figure 5: Front access to the flat

7.0 Waste & Pollution

- 7.1 Waste arising from the construction process has been an area of focus for some years now, with the industry making good strides in re-use and reduction of materials, which not only helps the environment, but also engenders significant cost savings to developers.
- 7.2 With this in mind, the appointed contractor for the scheme will be encouraged to develop a comprehensive site waste management plan (SWMP) prior to the start of construction reflecting the recognition that reduction of waste begins in the design and ordering stage of a project and carries on through to the sign-off of the building. This SWMP will set targets and procedures for the sorting, reusing and recycling of construction waste into defined waste groups, either on site or through a licensed contractor at a waste transfer station.
- 7.3 The generation of waste does not stop at the end of the construction process and adequate provision will be supplied to the proposed dwelling, both internally and externally to allow for the sorting of general waste from recyclable materials and separation of food waste in line with RBC's waste collection practice.
- 7.4 Pollution can occur in various guises and attempts will be made to design out or mitigate against a number of issues identified below.
- 7.5 At the construction stage there can potentially be noise nuisance for neighbouring properties and all contractors will be made aware of and expected to comply with policies to prevent this issue.
- 7.6 Noise pollution and nuisance between dwellings, once occupied, is also a potential issue and attention has been paid to deliver an improvement against the minimum standards of Part E of the Building Regulations to mitigate against this issue for the neighbouring dwellings.
- 7.7 Light pollution will be countered by the use of external lighting which only involves energy efficient fittings, daylight detectors and angling/capping to prevent unnecessary glare.

8.0 Materials Selection and Sustainable Construction Methods

8.1 The developer is committed to ensuring that all materials used score as highly as possible when checked against the Building Research Establishment's Green Guide to specification – see Figure 6 to right.

8.2 In addition, wherever possible all building and finishing materials will be sought from local suppliers and manufacturers registered to an environmental management scheme such as FSC or PEFC (for timber based products), BES6001, ISO14001 or EMAS. This will ensure that the materials have been sourced from suppliers certified as ethical and responsible as far in to the supply chain as possible.

8.3 All insulation materials selected for the building will have a Global Warming Potential of below 5 and where possible be made from natural products.

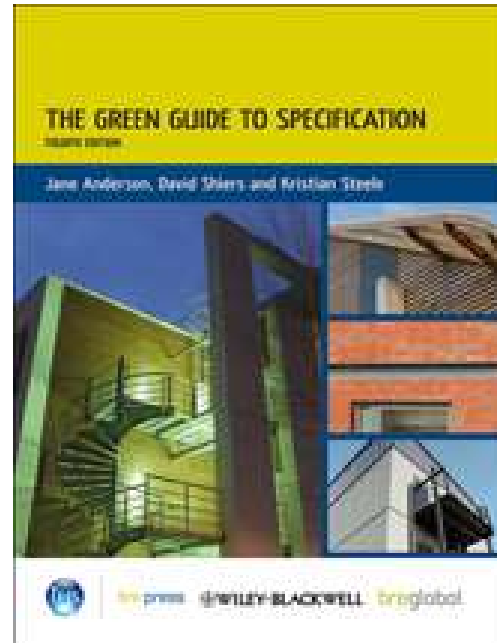


Figure 6: BRE Green Guide to Specification

8.4 Finally, attention will also be paid to materials specified for the internal environment with a focus on materials/finishes containing low/no volatile organic compounds (VoCs) in an effort to improve the internal environment for occupants as internal air pollution is increasingly recognised as having negative impacts on health.

9.0 Security

- 9.1 Crime is the product of many factors. However, research has shown that design is one element that can influence the occurrence of crime - both positively and negatively. The aim of 'Designing Out Crime' is to reduce the vulnerability of people and property to crime by removing opportunities that may be provided inadvertently by the built environment. It also aims to reduce fear of crime and, in doing so, helps to improve people's quality of life.
- 9.2 Secure by Design (SBD) is a police initiative to encourage the building industry to adopt crime prevention measures in the design of developments to assist in reducing the opportunity for, and fear of, crime, creating a safer and more secure environment.
- 9.3 This development will adopt SBD design principles for a residential setting. This includes the consideration of the following:
- Good visual overlooking opportunities within the design allowing for natural surveillance of communal spaces around the site;
 - Doors and windows to be SBD certified;
 - Provision of a clear threshold between the street and site in the form of front paved area to clearly define public and private space;
 - A lighting design to reduce dark and shadowed areas.

10.0 BREEAM Applicability

- 10.1 If assessed against a BREEAM scheme, this project would be registered under BREEAM Domestic Refurbishment 2014. As the date, 2014, suggests, this scheme is now well over ten years old and much of what may have been applicable then is no longer the case now.
- 10.2 In addition, the scheme proposed is essentially an extension project, with most services and construction left untouched, rendering many of the requirements under BREEAM as pointless or significant overkill for a project of this limited scope and size.
- 10.3 As an example, ten years ago, the perceived wisdom was that electric based heating systems were not a good idea, both from a running cost and a carbon emissions perspective. Times have now changed and the carbon factor for electricity is now significantly lower (and continuing to decline) with the rapid development of renewable energy technologies now feeding into the National Grid.
- 10.4 The scheme at 37, Alpine Street already has modern electric heating in situ and there would be no sense in replacing this to meet a dated BREEAM requirement. Very little other work is occurring too, with the exception of an extension, which is being built to 2021 Part L of the Building Regulation Standards, which far exceed those in place when the BREEAM scheme was developed. However, this is not enough to meet the mandatory requirements under the Ene02 category of the 2014 BREEAM scheme.
- 10.5 Another example relates to flood risk assessment and surface water runoff. To gain the credits under these categories, the developer would need to commission expensive, detailed reports from appropriately qualified consultants and yet, both the RBC Planning department and Building Control are satisfied with the information supplied that already adequately covers these issues.
- 10.6 Therefore, as long standing BREEAM consultants, Blewburton Limited can say that the imposition of a BREEAM requirement on this development is not appropriate and the various approaches and measures outlined above in this report adequately cover the full range of issues that are applicable under BREEAM for this scheme and that it meets the ethos behind RBC sustainability policies.

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