



Sustainability Statement

Crawley Down Road, Felbridge

Client: BDW Southern Counties

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1. Executive Summary

1.1. Introduction

- 1.1.1. Environmental Economics Ltd has been commissioned by BDW Southern Counties to carry out a sustainability statement for the residential site Crawley Down Road, Felbridge. This document sets out how the development proposal presents a positive sustainable development.
- 1.1.2. As part of the sustainable development strategy, the proposed development has been designed to consider sustainability in accordance with the National Planning Policy Framework (NPPF) and the Mid Sussex District Plan.
- 1.1.3. While the development is still at an early stage of the design process, it is considered that the proposal meets or exceeds the required level of sustainability across all given criteria.

2. Project Overview

2.1. Description of Site

- 2.1.1. The proposed development Crawley Down Road, Felbridge consists of 200 new residential dwellings made up of detached, semi-detached and terraced housing along with several apartment blocks, together with associated access, parking, landscaping and open space.
- 2.1.2. The proposed site location is shown in Appendix A with the first parcel which this report refers to being outlined in red.
- 2.1.3. The proposed site layout is shown in Appendix B.

2.2. Brief

- 2.2.1. The planning authority for this site is Mid Sussex District Council. The local plan containing the relevant planning policy is the Mid Sussex Adopted Local Plan.
- 2.2.2. The relevant policy within the local plan is DP39: Sustainable Design and Construction:
- *All development proposals must seek to improve the sustainability of development and should where appropriate and feasible according to the type and size of development and location, incorporate the following measures:*
 - *Minimise energy use through the design and layout of the scheme including through the use of natural lighting and ventilation;*
 - *Explore opportunities for efficient energy supply through the use of communal heating networks where viable and feasible;*
 - *Use renewable sources of energy;*
 - *Maximise efficient use of resources, including minimising waste and maximising recycling/ re-use of materials through both construction and occupation;*
 - *Limit water use to 110 litres/person/day in accordance with Policy DP42: Water Infrastructure and the Water Environment;*
 - *Demonstrate how the risks associated with future climate change have been planned for as part of the layout of the scheme and design of its buildings to ensure its longer term resilience.*
- 2.2.3. This statement seeks to address the planning policy relevant for the proposed site and present a sustainable strategy.

2.3. Building Regulations

- 2.3.1. The client anticipates the development to coincide with Part L 2021 of building regulations.
- 2.3.2. It should be noted at this stage that detailed energy and carbon emissions calculations are currently only possible for plots subject to Part L 2013 and therefore no detailed assessments are available at this stage.

3. Sustainability Appraisal

3.1. Green Guide Materials

3.1.1. The Green Guide is used to examine the environmental impact of the construction materials commonly used within dwellings.

3.1.2. The standard specification of materials used by Barratt Homes consists of predominantly 'A' and 'A+' Green Guide rated elements. 'A+' rated construction elements include: pitched roof construction, internal upper floors, internal timber partitions and external cavity walls.

3.1.3. Table 1 below shows a sample of materials used by Barratt Homes and their Green Guide rating.

Table 1

<i>Element</i>	<i>Green Guide Equivalent (online)</i>	<i>Code</i>	<i>Rating</i>
Ground Floor Option A (Beam and Aircrete Block)	Screed on insulation laid on grouted beam and Aircrete block flooring.	820140014	B
Ground Floor Option B (Ground Bearing)	Powerfloated in situ concrete slab, over insulation on polyethylene DPM laid on blinded virgin aggregate sub-base	820100202	C
Internal Upper Floors	Chipboard decking on timber I joists	807280024	A+
Wall – External Cavity (single & 2 storey) – Brick	Brickwork outer leaf, insulation, Aircrete blockwork inner leaf, cement mortar, plasterboard on battens, paint	806170615	A+
Wall – Internal Partition (timber) non loadbearing	Timber stud, plasterboard, paint	809760003	A+
Wall – Internal Partitions (masonry) (Used in very small number of cases)	Medium dense solid blockwork, plasterboard, paint	809180008	B
Wall – Party (cavity)	Robust Detail E-WM-20: Twin leaf 100mm min. solid medium dense blocks (1350-1600kg/m ³), with 100mm min. cavity including proprietary glass wool acoustic roll, type A wall ties, with gypsum-based board (9.8kg/m ²) on dabs and paint to each side	1118190007	C
Windows	PVC-U window with steel reinforcement, double glazed	813100009	A
Insulation	Glass wool insulation - density 12 kg/m ³	815320001	A+
Pitched Roof	Timber trussed rafters and joists with insulation, roofing underlay, counterbattens, battens and concrete plain tiles	812410017	A+

3.2. Responsible Sourcing

- 3.2.1. Barratt Homes has an established network of responsible sourcing certified suppliers that have been carefully selected to align with sustainability and responsible sourcing policies.
- 3.2.2. Materials used within construction of the proposed development will be at a certified standard, proving the materials sourced have been done so with sustainability in mind.
- 3.2.3. Responsible sourcing of materials can come in a variety of certifications including: BES 6001, FSC, PEFC and EMS.
- 3.2.4. Appendix C shows a wide range of Barratt's suppliers with material responsible sourcing certification including:
- *wallboard supplier British Gypsum;*
 - *aggregate/cement product supplier Tarmac.*
 - *Aircrete block supplier H+H Celcon;*
 - *brick supplier Ibstock Brick;*
- 3.2.5. Additionally, the site aims to utilise timber that is procured sustainably and independently accredited by either the FSC or PEFC schemes. The Barratt Homes Sustainable Procurement Policy can be seen in Appendix D. The policy sets a high standard of sustainability when sourcing materials.

3.3. Waste Management

- 3.3.1. Appendix E shows an extract of Barratt's Sustainability Framework 2020+ that sets targets for waste management including at least 95% construction waste diverted from landfill as well as continued reductions in construction waste intensity.
- 3.3.2. The scheme aims to use waste reduction procedures to enable waste reduction and diversion of waste from landfill. The goal is to minimise waste and maximise re-use of resources in response to climate change. Barratt achieved 97% of construction waste diverted from landfill in 2018 and Barratt's Sustainability Framework 2020+ sets targets to continue diversion from landfill and reduce construction waste intensity.

3.4. Flood Risk

- 3.4.1. Appendix F shows the Environment Agency Flood Risk Map for the site location.
- 3.4.2. All residential development on site will be within Flood Zone 1, the lowest probability evaluated by the Environment Agency. Flood Zone 1 is defined as land with less than 1 in 1000 annual probability of river or sea flooding.
- 3.4.3. Zone 1 flood risk is considered best practice for a positive sustainable development and would be well located for a site that is resilient to climate change.

3.5. Electric Vehicle Charging

- 3.5.1. Providing EV charging points is an exemplary measure for sustainability and promotes sustainable lifestyles for residents.
- 3.5.2. With the provision of EV charging points, residents would have ready opportunity to purchase / lease EV's and have immediate secure charging infrastructure. This aligns with current government policy to stop the sale of new petrol and diesel cars by 2030 (GOV.UK, November 2020).
- 3.5.3. The BEAMA Guide to Electric Vehicle Infrastructure (BEAMA, 2015) illustrates the various "Modes" of electric car charging, with Mode 1 being the slowest, and Mode 4 the fastest. Mode 1 is not recommended and Mode 4 is only recommended for public and commercial use. Modes 2 to 3 are suitable for dedicated charging of EV's at domestic properties. Please refer to Figure 1 below which shows common infrastructure side connections for Mode 2 and 3.

CONNECTOR TYPE	BS 1363	BS EN 60309-2	BS EN 62196-2 TYPE 2	BS EN 62196-2 TYPE 3
				
MODE	2	2	3	3
MAX POWER (kW) (at mains voltage i.e. harmonised EU voltages)	Single phase - 3	Single phase - 28.8 Three phase - 86.6	Single phase - 16.1 Three phase - 43.7	Single phase - 7.4 Three phase - 43.7
NOTES	Standard UK household plug & socket-outlet system	Standard industrial plug & socket-outlet system	Specialist EV	Specialist EV

Figure 1 – Common infrastructure options for Mode 2 and 3 EV charging points (BEAMA, 2015)

- 3.5.4. It is proposed that appropriate external electric vehicle (EV) charging points will be provided for the development.
- 3.5.5. West Sussex County Council split EV charging infrastructure into "active" charging points which are fully installed and "passive" charging points where ducting is put in place to allow for the retrofit of an "active" charging point. Provision of both active and passive charging points will be in line with West Sussex County Council policy and current and future Building Regulations.
- 3.5.6. All dwellings on the proposed development are to be provided with active EV charging points as per new Part S Regulations.
- 3.5.7. It should be noted that should the new Government legislation on EV charging points come into effect prior to construction phase, all parking spaces will be provided with active charging points.

3.6. Water Use

- 3.6.1. The criteria for measuring potable water usage are set out in Approved Document G of the Building Regulations.
- 3.6.2. All dwellings on site can be designed to achieve the maximum of 105 litres per person per day internal potable water, with an additional allowance for external water use of 5 litres per person per day. The total internal water consumption estimate is 101.6 litres per person per day for dwellings with a bath and shower; and 90.6 litres per person per day for any dwellings with only a shower. An additional 5L is specified for external use. The specification of water fittings will be identified at the detailed design stage.
- 3.6.3. Representative data has been input into the BRE's Water Efficiency Calculator for New Dwellings for relevant domestic water consuming components; dual flush WC, taps and kitchen sink taps, bath and shower. Washing machine and dishwasher specification have been set to default rates as standard practice.
- 3.6.4. The following representative rates have been utilised:
- *Dual Flush WC – 4L & 2.6L flush volumes*
 - *Taps – 4L per minute flow rate*
 - *Bath – 195L overflow capacity*
 - *Shower – 8L per minute flow rate*
 - *Kitchen sink taps – 4L per minute flow rate*
- 3.6.5. Alternative component consumption rates are available which can achieve the required water consumption. The rates provided are representative only.
- 3.6.6. The calculator can be found in Appendix G.
- 3.6.7. The calculated results show that utilisation of the representative component's water consumption can achieve a maximum of 105 litres per person per day internally, and additional external water use of 5 litres per person per day. This is in line with Policy DP42 of the Mid Sussex District Plan which states:
- *Residential units should meet a water consumption standard of 110 litres per person per day (including external water use).*

4. Energy Assessment

4.1. Assessment Methodology – Part L 2021

- 4.1.1. Part L 2021 will be an interim Part L introduced prior to Future Home Standards (due to be implemented from 2025 onwards) to ease the transition from Part L 2013. Part L 2021 is expected to constitute a 31% uplift when compared to Part L 2013.
- 4.1.2. As well as having stricter carbon emissions targets, Part L 2021 will also utilise the new SAP 10 methodology, the updated version of the current SAP 2012. This will mean significant revision to a number of aspects within the methodology, such as:
- *Updated fuel costs*
 - *Updated carbon factors for fuels*
 - *Renewed focus on energy required for lighting*
 - *More accurate calculation of hot water demand*
- 4.1.3. These factors will alter the effectiveness of certain solutions. A key example is that the carbon intensity of grid electricity, which will reduce the carbon emissions relating to electrically powered systems. This will have a major impact (i.e. will reduce) carbon emissions relating to electrically powered systems (e.g. panel heaters / storage heaters / ASHP / GSHP) but will make PV panels less effective in terms of reducing carbon emissions.
- 4.1.4. A formal SAP 10 based methodology is not available at time of writing, and as such detailed calculations for house types to be built to Part L 2021 cannot be carried out.
- 4.1.5. There is however draft SAP 10 software that enables a specification to be tested to see if it is likely to perform well against the new standards. The proposed specification in this report is based on the results of this draft assessment, however no outputs can be created from the draft SAP 10 software. Therefore there are no reports or detailed results for any plots/house types to be built to Part L 2021.
- 4.1.6. It should be noted that all guidance for any new standards is still in draft format, so as such all solutions and specifications for these new standards are also draft and subject to change at any time.

4.2. Design Philosophy

- 4.2.1. Upgrades have been made to a number of elements from a standard build specification in order to improve energy efficiency across the development. The site adopts the good design principles endorsed and promoted by The Zero Carbon Hub, the construction industries' key advisors and partners with the Governments Communities and Local Government Department. This guidance follows the general good principles of energy efficiency as the industry moves towards zero carbon. The principles are illustrated in figure 2 below.

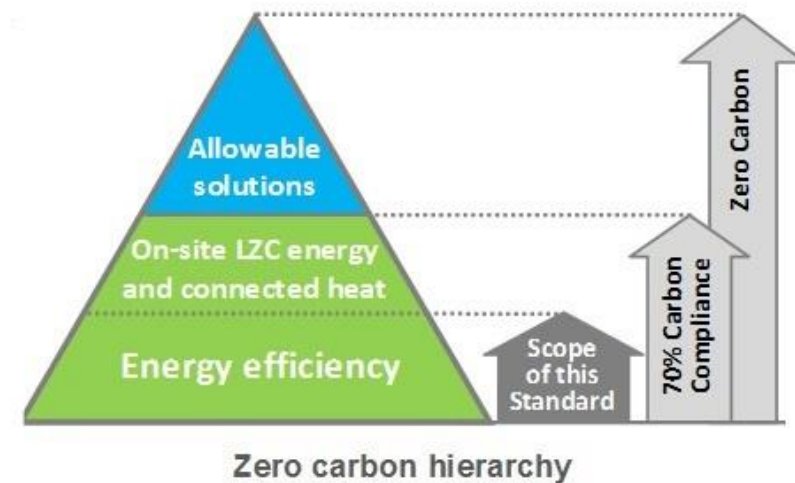


Figure 2

4.3. Fabric Specification

4.3.1. The building fabric for all dwellings was improved from the minimum standards required to an enhanced specification. These fabric improvements reduce the space heating requirement upon a property. The improvements have been made through a combination of upgraded materials and increased insulation thicknesses. Enhanced glazing with a larger transmittance factor allowing for increased solar gains will also be used. Changes to the U-Value of external elements are shown in table 2 below.

Table 2 – Part L 2021

<i>Element</i>	<i>Minimum Standard</i>	<i>Improved Potential Specification</i>	
-	<i>W/m²k</i>	<i>Description</i>	<i>W/m²k</i>
Walls	0.26	Timber Frame to be 140mm Stud with 140mm Mineral Wool (K Value 0.035).	0.21
Roof	0.16	400mm Mineral Wool Horizontal Ceiling, Loft Space	0.11
		Sloping Ceiling to have 100mm PUR between joists, and 55mm PUR Board underlaid	0.15
Floors	0.18	150mm TE Platinum Insulation	0.13 - 0.16
Doors	1.60	Double glazed Low-E, u-PVC frame	0.60 - 1.00
Windows	1.60	Double glazed Low-E, u-PVC frame	1.20

4.3.2. As improvements are made to the thermal conductivity of main elements, thermal bridging and air permeability becomes increasingly significant in the overall fabric performance. Bespoke thermal bridging designs have been utilised, which achieve much lower heat loss levels in comparison with standard practice.

4.3.3. As a result of following these junction details and focusing on build quality air permeability will also decrease. A target air pressure rating of 5.01m³/hr.m² has been set for all houses on site which is a 50% improvement on the maximum allowable rating in the 2013 Building Regulations.

4.4. Building Services

- 4.4.1. 100% Low-E lighting fixtures shall be fitted to all properties.
- 4.4.2. Ventilation requirements will be met via intermittent extract fans to wet rooms and natural ventilation.
- 4.4.3. The systems used in a property to supply hot water and heating, as well as control it, are important to the overall energy demand of a property. Building regulations state that all systems and their controls must adhere to the minimum standards shown in Domestic Heating Compliance Guide.
- 4.4.4. For Part L 2021 it is currently proposed to provide heating and hot water via mains gas boilers.
- 4.4.5. For a mains gas fired system the minimum boiler efficiency required is 86%. High efficiency condensing boilers have been specified throughout the site for both combination and cylinder based systems. These boilers achieve a SAP 2009 rated efficiency of at least 89% and are recommended by the Energy Saving Trust.
- 4.4.6. Where installed, hot water cylinders can have significant standing losses. In order to minimise this energy loss and corresponding carbon emissions, cylinders which have higher levels of insulation in comparison to typical hot water cylinders will be used.
- 4.4.7. Subject to detailed design once formal guidance is released, further improvements to building services are likely for plots subject to Part L 2021 and beyond. Waste water heat recovery and flue gas heat recovery will likely be used to increase the efficiency of the heating system.

5. Low and Zero Carbon Technologies

5.1.1. The following section will outline various renewable technologies and assess their suitability for this scheme.

5.2. Photovoltaic (PV) Cells

5.2.1. The efficiency of PV cells has improved rapidly over the last 15 years. This has made a previously uneconomical technology an increasingly viable solution to rising energy costs and demand. The cells can be produced in a variety of formats but are typically manufactured as a panel or a roof tile for domestic housing applications.

5.2.2. The PV system typically produces direct current (DC) which is then sent through an inverter to supply the house with electricity. If a greater amount of electricity is produced than used by the household, this extra can be exported to the national grid, as can be seen in figure 3.

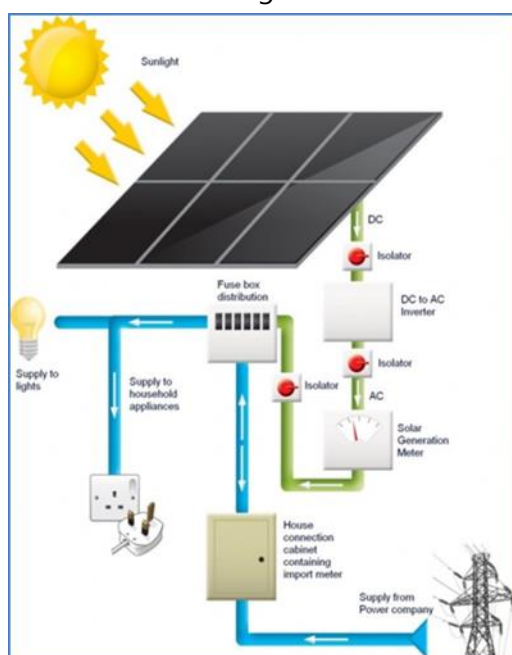


Figure 3

5.2.3. A PV cell is assessed on its peak power rating. This is tested by exposing the cell to the equivalent of full solar radiation and measuring the power output. The peak power is input into the Design SAP software as well as the physical attributes of the installation such as pitch, orientation and over-shading. A total energy saving per year can then be calculated through SAP for the PV installation. This is then offset against the electricity energy demand for the house.

5.3. Solar Hot Water (SHW)

- 5.3.1. SHW systems provide hot water to a household usually in conjunction with a conventional boiler and cylinder system. Because of this they are best suited to houses with a need for a cylinder hot water system rather than a combi boiler.
- 5.3.2. There are two main SHW systems; evacuated tubes and flat plate collectors. Evacuated tubes are more efficient at transferring solar irradiation to the fluid although flat plate collectors are considered to be better aesthetically and to install. An example of the latter can be seen in figure 4.



Figure 4

- 5.3.3. The final energy contribution to the household, calculated through SAP, is based on a number of factors:
- *Pitch, orientation and over-shading*
 - *Heat absorption efficiency for the collector*
 - *Average hot water usage of the dwelling*
- 5.3.4. The majority of the energy savings will be made in the hot water demand for the dwelling however, adding a SHW system will impact upon other energy demands.

5.4. Air Source Heat Pumps (ASHP)

- 5.4.1. ASHP provide heating and hot water to a home through thermal energy gathered from air outside the dwelling. Systems can be designed to work in conjunction with a boiler system but in the case of energy efficient new builds it is possible for an ASHP unit to provide 100% of the heating and hot water demand.



Figure 5

- 5.4.2. The thermal performance of the unit depends on the outside temperature as well as the unit's Coefficient of Performance. This is the ratio of thermal energy produced to energy used. A typical value for this would be around 3.5, meaning that for every 1kW of electricity consumed the unit would provide 3.5kW of thermal energy to the household. This efficiency leads to large carbon and energy savings for both space and water heating.
- 5.4.3. ASHP are assessed by their power output and the size of unit chosen depends on the demand from the household. An example external unit can be seen above in figure 5. The units with a larger power output can provide a larger amount of hotter water even in colder climates.

5.5. Ground Source Heat Pumps (GSHP)

- 5.5.1. GSHP provide heating and hot water to a dwelling through geothermal effects. A GSHP system would offset the energy demand from the main space heating. There is, however, an additional electricity demand for the pump and control system. This would reduce energy savings from the installation.

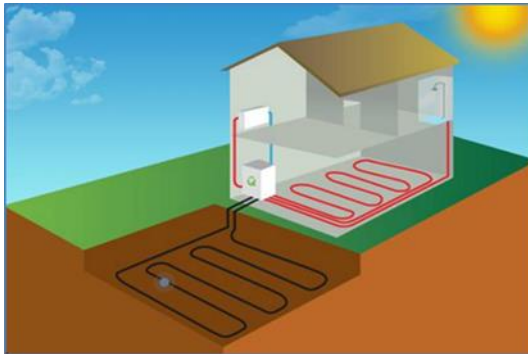


Figure 6

- 5.5.2. GSHP are expensive to install and rely on having appropriate ground conditions and suitable space around the dwelling for the pipe looping. Energy savings are dependent upon the type of system being replaced and the way the system is operated by the homeowner. A typical system can be seen above in figure 6.

5.6. Biomass Heating Systems

- 5.6.1. Biomass heating systems burn fuels, considered carbon neutral, to heat the water required for a dwelling. There are a large variety of systems available and choice depends on the type of fuel to be burned and the level of automation.
- 5.6.2. The system would offset the energy demand from the hot water and main space heating. However, biomass systems typically require a large amount of maintenance and monitoring. An example system can be seen in figure 7.



Figure 7

- 5.6.3. The savings from such a system, in terms of CO₂ and money, depends upon what it is replacing. The savings are greatest when replacing an electrical hot water system but are considerably less for replacing mains gas.

5.7. Wind Turbines

- 5.7.1. Wind turbines provide electricity directly to a dwelling. They can be added to a property in two ways: pole mounted or building mounted. The pole mounted systems are free standing and therefore require enough space around them to allow for the construction and maintenance of the structure, as well as to allow for efficient operation. The building mounted systems have a lower power output but do not require additional structures, as can be seen in figure 8.



Figure 8

- 5.7.2. The energy produced from a wind turbine is heavily dependent upon the surrounding landscape. The energy saved will be offset against the electricity usage of the dwelling.

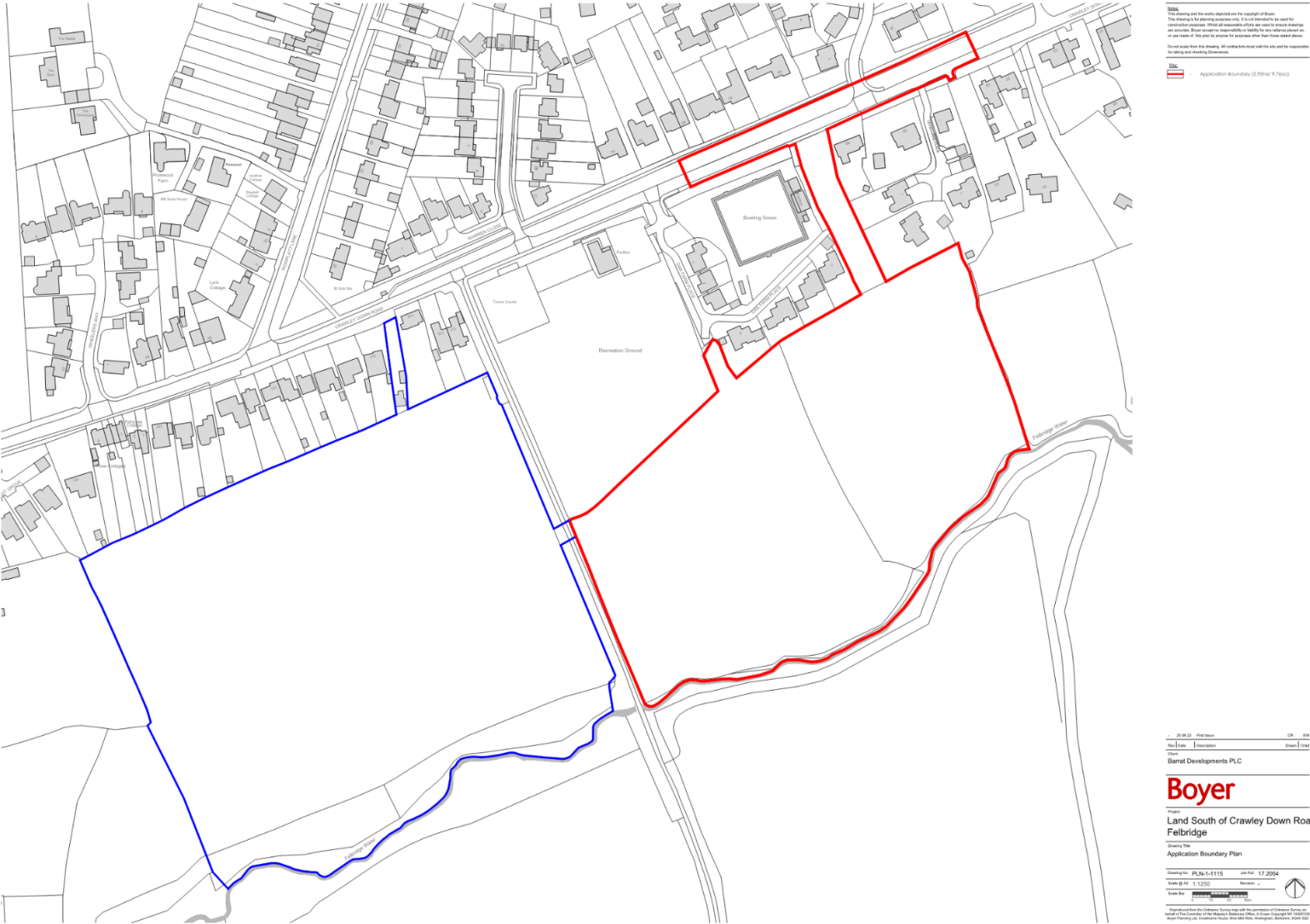
5.8. Comparison

- 5.8.1. SHW and PV can be easily incorporated into new build house designs and have the potential to reduce the energy demand and Carbon emissions. PV panels are now usually the preferred option.
- 5.8.2. ASHP provide a low carbon option due to the continuing decarbonisation of grid electricity. The same can be said of GSHP, however additional extensive ground work is required in order to make use of the system. As previously mentioned it is currently proposed to utilise ASHPs further down the development timeline.
- 5.8.3. Biomass hot water systems are more suited to the replacement of inefficient, carbon heavy systems such as electrical immersion heaters. The requirement of maintenance and monitoring makes it unsuitable for large scale new build developments
- 5.8.4. The density of the site is a major restriction on the potential energy that could be generated from wind turbines. Surrounding houses and the urban location would restrict wind speeds.
- 5.8.5. It is currently proposed that plots subject to Part L 2021 will benefit from PV panels to meet the 31% uplift required. As mentioned previously, all guidance for any new standards is still in draft format, so as such all solutions and specifications for these new standards are also draft and subject to change at any time.

6. Conclusion

- 6.1.1. This sustainability statement has been produced for the residential site Crawley Down Road, Felbridge.
- 6.1.2. The development strategy sets a high standard of overall sustainability with measures that include:
- Building elements with highest standard 'A+' Green Guide ratings including upper floors, external cavity walls, internal partitions, insulation and pitched roof;
 - Material suppliers with responsible sourcing certification guided by a high-quality sustainable procurement policy;
 - Enhanced building fabric specification with a Fabric-First approach including high efficiency insulation and provision of efficient appliances;
 - Effective waste management procedures to minimise waste;
 - Provision of active electric vehicle charging points to encourage adoption of sustainable private transport for all dwellings on the proposed development;
 - Efficient internal and external water use in line with building regulations;
 - Current recommendation to install PV on plots built to Part L 2021.
- 6.1.3. It should be noted that future policies and building regulations may require an update to the sustainability measures within this report.
- 6.1.4. The proposed site is found to present a positive sustainable development based on the assessed sustainability criteria and exceeds current standards with an exemplary strategy.

Appendix A – Proposed Site Location



Appendix B – Proposed Site Plan



Appendix C – Responsible Sourcing Certificates



Certificate of Registration

RESPONSIBLE SOURCING OF CONSTRUCTION PRODUCTS

This is to certify that:

Saint-Gobain Construction Products
UK Limited
T/A British Gypsum
Head Office
East Leake
Loughborough
LE12 6HX
United Kingdom

Holds Certificate Number:

BES 613170

and complies with the requirements of BES 6001: Issue 3.1 - Framework Standard for the Responsible Sourcing of Construction Products for the following scope. This Responsible Sourcing certification has been carried out under licence using BRE's Responsible Sourcing scheme methodology and underpinning processes.

Product Group: Gyproc plasterboard, Glasroc specialist board, Thistle Plaster, Cove products, Gyproc accessories. Overall Assessment Score: Excellent Amended scope should rea and replace above Gyproc plasterboard, Glasroc specialist board, Thistle Plaster, Gyproc Cove, Gyproc ready-mix joint cement. Overall Assessment Score: Excellent

For and on behalf of BSI:

Andrew Launn, EMEA Systems Certification Director

Original Registration Date: 2014-10-13

Effective Date: 2020-09-01

Latest Revision Date: 2020-08-11

Expiry Date: 2023-08-31



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RESPONSIBLE SOURCING OF PRODUCTS

This is to certify that:



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United Kingdom

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and complies with the requirements of BES 6001: Issue 3.1 - Framework Standard for the Responsible Sourcing of Products for the following scope. This Responsible Sourcing certification has been carried out under licence using BRE's Responsible Sourcing scheme methodology and underpinning processes.

Product Group: Building Products

Overall Assessment Score - Excellent

For and on behalf of BSI:

Andrew Launn, EMEA Systems Certification Director

Original Registration Date: 2010-09-20

Latest Revision Date: 2020-12-14

Effective Date: 2021-03-01

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Has complied with the requirements identified in
BES 6001 – Framework Standard for the Responsible Sourcing of
Construction Products

And is authorised to use the BRE Global Mark on stationery and
publications related to the Product(s) listed in this certificate and
appendix

Very Good Performance rating
★ ★ ★

Bridget Randall

for and on behalf of BRE Global


Certificate No: RS 0003
Issue Number: 2
Valid From: 25th September 2009


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APPENDIX TO CERTIFICATE NUMBER: RS 0003

H+H UK Limited

**Borough Green
Factory
Ightham Sandpits
Borough Green Road
Ightham
Sevenoaks
Kent
TN15 9JB**

**Pollington Factory
Heck Lane
Pollington
Nr Goole
East Riding of Yorkshire
DN14 0BA**

Product	Rating
Standard Aircrete Blocks Made at Borough Green and Pollington sites	Very Good
Solar Aircrete Blocks Made at Borough Green and Pollington sites	Very Good
High Strength Aircrete Blocks Made at Borough Green and Pollington sites	Very Good
Aircrete Reinforced Elements Made at Pollington site	Very Good

Bridget Randall

for and on behalf of BRE Global

Valid From: 25th September 2009

breglobal

BRE Global Limited, Watford, WD25 9XX T: +44 (0)1923 664100 F: +44 (0)1923 664910 W: www.greenbooklive.com

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Certificate of Conformity



CPC
Construction
Products
Certification

Responsible Sourcing of Construction Products

Construction Products Certification certifies that

Clay Bricks, Special Shapes and Masonry Assemblies

produced and supplied by

Ibstock Brick Ltd

Leicester Road, Ibstock, Leicestershire LE67 6HS

*from its production plants listed on the attached schedule
conform to the following standard:*

BES 6001:Issue 3.1

Framework Standard for Responsible Sourcing

with a Performance Rating of

Excellent



Certificate No: CPRS 00025 Issue No 6

Colin Head
Chief Executive

Date Authorised: 29 November 2018
Date of issue of first certificate: 4 April 2011

THIS CERTIFICATE IS VALID FROM 1 JANUARY 2019 TO 31 DECEMBER 2021

subject to continued compliance with the above standard as confirmed by routine surveillance. Confirmation of the current validity status of Certification may be obtained by enquiry to the CPC Central Records Office or by reference to BRE's Green Book Live website: www.greenbooklive.com

This Responsible Sourcing certification has been carried out under licence using BRE's Responsible Sourcing scheme methodology, scheme documentation and underpinning processes

Page 1 of 3

1 Mount Mews
High Street, Hampton
Middlesex TW12 2SH
Telephone: 020 8481 9640
Facsimile: 020 8979 4558
www.qsrnc.co.uk

Certificate of Approval

Responsible Sourcing of Construction Products

Ibstock Brick Ltd

Dorket Head Factory, Lime Lane, Arnold, Nottingham, NG5 8PZ

Has complied with the requirements identified in

BES 6001 - Framework Standard for the Responsible Sourcing of Construction Products

And is authorised to use the BRE Global Mark on stationery and publications related to the Product(s) listed in this certificate and appendix

Very Good Performance rating



Signed for and on behalf of CICS


Authorised Signatory

Certificate No: 24627
Issue Number: 1: 08/10
Valid From: 11 August 2010



This Certificate of Registration is granted subject to conformance with the conditions of contract governing the registration.

This certificate remains the property of CICS and is issued subject to terms and conditions. It is maintained and held in force through annual review and verification. To check the validity of this certificate, please visit www.bre.co.uk/cics or contact us.

Complete Integrated Certification Services Ltd, Queens Road, Penkhull, Stoke-on-Trent, ST4 7LQ, England

Appendix to Certificate Number: 24627

Ibstock Brick Ltd

Dorket Head Factory, Lime Lane, Arnold, Nottingham, NG5 8PZ

Product	Rating
Clay Masonry Units - Clay Body Group 1 - Hardwick	Very Good

Signed for and on behalf of CICS


Authorised Signatory

Valid From: 11 August 2010





This Certificate of Registration is granted subject to conformance with the conditions of contract governing the registration.

This certificate remains the property of CICS and is issued subject to terms and conditions. It is maintained and held in force through annual review and verification. To check the validity of this certificate, please visit www.environmental-economics.com or contact us.

Complete Integrated Certification Services Ltd, Queens Road, Penkhull, Stoke-on-Trent, ST4 7LQ, England

Appendix D – Sustainable Procurement Policy

Sustainable Procurement Policy

Introduction

By its very nature our business has environmental and social impacts. Accordingly, we are committed to continuously safeguarding the environment and maintaining good labour relations by:

- Working with suppliers, contractors and supply chains to minimise the environmental and social impact of the materials, services and labour within our operations and supply chain that are integral to our business; and
- Developing commercial relationships with partners that embrace sustainable practices and spread best practice through the supply chain.

This Policy sets out a framework that we expect our supply chain partners to apply and relates to both the products/services they provide to us and the operating activities that they and their respective supply chains are engaged in.

The Policy

The key elements of our Policy relating to suppliers and subcontractors are:

- Suppliers must ensure compliance to all mandatory legislation that affects their activities and those of their own supply chain.

- Suppliers must conform to the specific requirements of our health, safety, environmental, quality and responsible sourcing requirements.
- Suppliers must maintain a Health and Safety Management System that is of a suitable standard for the operations they are engaged in. As a preference, organisations should gain certification to OHSAS:18001.

Suppliers and subcontractors must commit to follow our supplier code of conduct. [www.barrattcommercialsupport.co.uk]

Suppliers must maintain an ethical sourcing policy that aims to ensure as a minimum that:

- All statutory legislation (in their country of operation) is adhered to;
- Working conditions are safe and healthy;
- No child, forced or slave labour takes place and the requirements of the International Labour Organisation's conventions are complied with;



Sustainable Procurement Policy

- All employees are paid a real Living Wage which is the hourly rate set by the Living Wage Foundation, is based on cost of living and is higher than the legal minimum (see <https://www.livingwage.org.uk/>);
 - No individual is expected to work excessive hours; and
 - There is no discrimination on the grounds of ethnicity, skin colour, gender, sexual orientation, age or other criteria.
- c) Have low embodied carbon (against BRE Green Guide);
 - d) Utilise less material by design;
 - e) Can be recycled;
 - f) Minimise packaging waste;
 - g) Minimise use of water;
 - h) Use local resources; and
 - i) Conform to Responsible Sourcing Standard: BES6001.

Our suppliers and subcontractors must be prepared to demonstrate how they monitor compliance with these requirements on request.

We will use sustainability criteria including environmental & social impact, quality and price in the assessment and selection of future supply sources.

We will include appropriate sustainability criteria in our tender and contract documentation. Where materials can be ethically sourced (and are economically viable and have equivalent quality and technical performance to alternative offerings), a preference will be given to materials that:

- a) Have a recycled content (with reference to WRAP – Recycled Content Product Guide);
- b) Minimise ecological damage;

This policy underpins our Group Sustainability, Climate Change and Environment Policies, and is supported by our Timber Sourcing Policy.

This policy is reviewed annually and is approved by the Group Board. It is communicated to key stakeholders and is available on our website.

David Thomas, Chief Executive
13th October 2020



Appendix E – Waste Management Targets

Barratt Developments, October 2019

barrattddevelopments.co.uk/sustainability

5

INNOVATIVE EFFICIENT CONSTRUCTION

Our ambition is to minimise our use of materials and energy, reduce waste generation and maximise low carbon opportunities in all aspects of our business through innovation and development.



MODERN METHODS OF CONSTRUCTION (MMC)

OUR TARGET

To apply MMC based products and systems in 20% of our homes by 2020 and 25% by 2025.

ACTIONS

- Increase roll out of low embodied carbon timber frame, offsite ground floor systems and large format blocks.
- Investigate a viable MMC system for apartments.

CONSTRUCTION WASTE

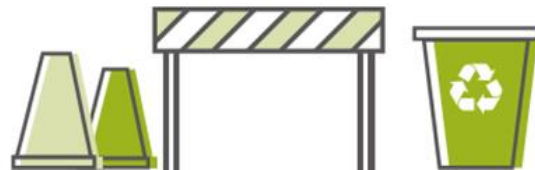
OUR TARGET

To reduce construction waste intensity by 20% from 2015 levels by 2025 (to 5.67t per 100m² legally completed build area).

To maintain diversion from landfill rate at 95% for construction waste.

ACTIONS

- Use the findings from our traditional/timber frame build comparison study to inform our waste reduction plans.
- Increase uptake of suitably sized plasterboards across divisions to avoid off-cuts.
- Work with suppliers and sub-contractors to find ways to reduce waste from chipboard packs and single-use plastics across our supply chain.
- Return 300,000 pallets for repairing, re-use and recycling.



Appendix F – Flood Risk Map (Zone 1)



Flood map for planning

Your reference
Felbridge

Location (easting/northing)
536363/139266

Created
13 Dec 2021 15:56

Your selected location is in flood zone 1, an area with a low probability of flooding.

This means:

- you don't need to do a flood risk assessment if your development is smaller than 1 hectare and not affected by other sources of flooding
- you may need to do a flood risk assessment if your development is larger than 1 hectare or affected by other sources of flooding or in an area with critical drainage problems

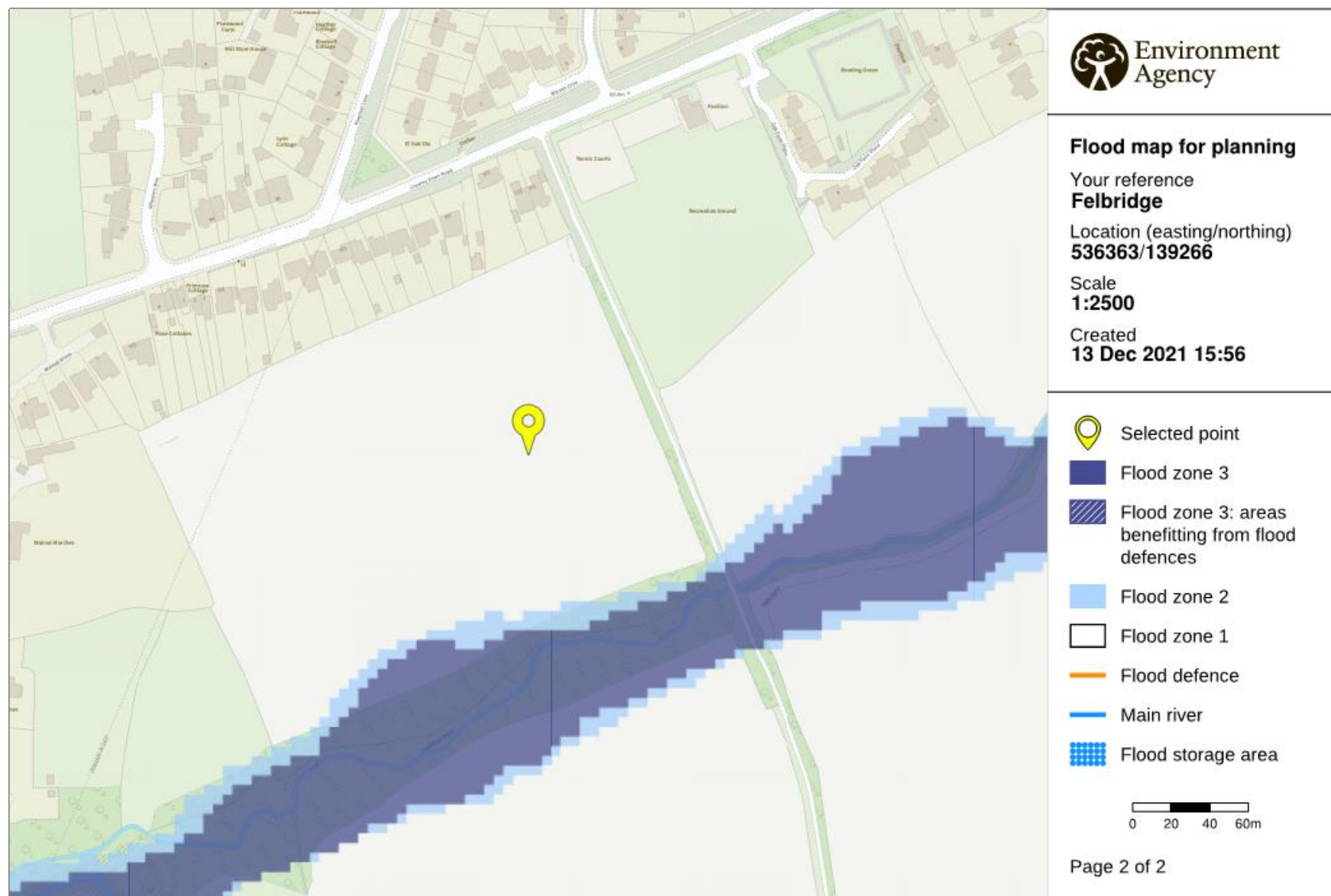
Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence **which** sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2021 OS 100024198. <https://flood-map-for-planning.service.gov.uk/os-terms>



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Appendix G – Water Efficiency Calculator

WATER EFFICIENCY CALCULATOR FOR NEW DWELLINGS - (BASIC CALCULATOR)									
House Type:		Type 1		Type 2		Type 3		Type 4	
Description:		Bath and Shower		Shower only					
Installation Type	Unit of measure	Capacity/ flow rate	Litres/ person/ day	Capacity/ flow rate	Litres/ person/ day	Capacity/ flow rate	Litres/ person/ day	Capacity/ flow rate	Litres/ person/ day
Is a dual or single flush WC specified?		Dual		Dual		Select option:		Select option:	
WC	Full flush volume	4	5.84	4	5.84		0.00		0.00
	Part flush volume	2.6	7.70	2.5	7.40		0.00		0.00
Taps (excluding kitchen and external taps)	Flow rate (litres / minute)	4	7.90	4	7.90		0.00		0.00
Are both a Bath & Shower Present?		Bath & Shower		Shower only					
Bath	Capacity to overflow	195	21.45		0.00		0.00		0.00
Shower	Flow rate (litres / minute)	8	34.96	8	44.80		0.00		0.00
Kitchen sink taps	Flow rate (litres / minute)	4	12.12	4	12.12		0.00		0.00
Has a washing machine been specified?		No		Yes					
Washing Machine	Litres / kg		17.16	8.1	17.01		0.00		0.00
Has a dishwasher been specified?		No		No					
Dishwasher	Litres / place setting		4.50		4.50		0.00		0.00
Has a waste disposal unit been specified?		No		No					
Water Softener	Litres / person / day		0.00		0.00		0.00		0.00
Calculated Use		111.6		99.6		0.0		0.0	
Normalisation factor		0.91		0.91		0.91		0.91	
Code for Sustainable Homes	Total Consumption	101.6		90.6		0.0		0.0	
	Mandatory level	Level 3/4		Level 3/4		-		-	
Building Regulations 17.K	External use	5.0		5.0		5.0		5.0	
	Total Consumption	106.6		95.6		0.0		0.0	
	17.K Compliance?	Yes		Yes		-		-	