



Sustainability Statement

Hurst Farm, Haywards Heath

Client: Barratt Homes Southern Counties
Author: Louie Roberts

www.environmental-economics.co.uk

Revision History

<i>Version</i>	<i>Date Issued</i>	<i>Issued by</i>	<i>QA Check</i>
1	16/01/2026	Louie Roberts BSc	Robert Holbrook BSc MSc
2	16/01/2026	Louie Roberts BSc	Robert Holbrook BSc MSc

About Environmental Economics

Our team of experienced consultants specialise in construction and building energy. We have qualifications in sustainability, energy, engineering, building physics and construction as well as environmental, quality management and auditing.

We develop flexible, practical, cost-effective specifications for our clients through identifying solutions and delivering design advice. This includes the following disciplines:

- *Energy Reports*
- *Sustainability Statements*
- *Compliance assessments and advice covering*
 - *Part L (SAP) & Future Homes Standard*
 - *Part F (ventilation)*
 - *Part G (water)*
 - *Part O (overheating)*
- *Overheating - TM59 dynamic modelling*
- *Overheating – simple method*
- *Life cycle carbon assessments*
- *Net zero carbon assessments*
- *BREEAM*
- *SBEM (existing and new build)*
- *Minimum Energy Efficiency Standards (MEES)*
- *Thermal Bridging (Psi value calculations)*

Environmental Economics Ltd
8 Cardiff Road

Luton
Bedfordshire
LU1 1PP

T: 01582 544250
E: louie.roberts@ee-ltd.co.uk
W: www.environmental-economics.co.uk

Contents

1.	Executive Summary	1
2.	Project Overview.....	2
2.1.	Description of Site	2
2.2.	Brief	2
2.3.	Building Regulations.....	6
3.	Sustainability Appraisal	7
3.1.	Green Guide Specification	7
3.2.	Responsible Sourcing	8
3.3.	Waste Management.....	8
3.4.	Flood Risk.....	9
3.5.	Ecology.....	9
3.6.	Sustainable Urban Drainage.....	9
3.7.	Air Quality	10
3.8.	Electric Vehicle Charging	10
3.9.	Water Use.....	11
3.10.	Overheating Risk	12
4.	Energy Performance	13
4.1.	Assessment Methodology	13
4.2.	Design Philosophy	14
4.3.	Fabric Improvements Part L1A 2021	15
4.4.	Future Homes Standard	17
4.5.	Building Services & Renewable Energy (LZCT).....	18
5.	Conclusion	20
	Appendix A – Proposed Site Layout	21
	Appendix B – Responsible Sourcing Certificates	22
	Appendix C – Sustainable Procurement Policy	26
	Appendix D – Waste Management Targets.....	28
	Appendix E – Flood Risk Map (Zone 1).....	29
	Appendix F – Low and Zero Carbon Technologies	31

1. Executive Summary

- 1.1.1. Environmental Economics Ltd has been commissioned by Barratt Homes Southern Counties to prepare a sustainability statement for the residential site Hurst Farm, Haywards Heath. 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 Council and Lewes District Council.
- 1.1.3. The proposed development is designed to achieve carbon emissions in line with both Part L 2021 and Future Homes Standard through the employment of low and zero carbon technologies.
- 1.1.4. Enhanced building fabric specification with a Fabric-First approach including high efficiency insulation.
- 1.1.5. The use of smart meters will provide occupiers with real time data which will allow occupiers to manage their energy consumption, save money and reduce Carbon. This is particularly important as the UK migrates towards half-hourly pricing levels and the proposed smart grid system.
- 1.1.6. Potential overheating risk will be assessed in accordance with Approved Document O.
- 1.1.7. The proposed development is situated in Flood Zone 1, in line with Policy DP41 of the Mid Sussex District Plan and Core Policy 12 of the Lewes District Local Plan.
- 1.1.8. Water efficiency has been reviewed as part of the design process and a Part G compliant specification will be adopted, resulting in the higher standard (lower water use) of 110 litres/person/day. This level of water use is in line with Policy DP42 of the Mid Sussex District Plan and Core Policy 14 of the Lewes District Local Plan.
- 1.1.9. 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 site proposal consists of the construction of 375 residential dwellings.

2.1.2. The proposed site plan is shown in Appendix A.

2.2. Brief

2.2.1. The planning authorities for this site are Mid Sussex District Council and Lewes District Council. The local plans containing the relevant planning policies are the Mid Sussex District Plan (2014-2031) and Lewes District Local Plan.

2.2.2. Within the Mid Sussex District Plan there are several relevant policies which are addressed herein.

2.2.3. Policy DP38 – Biodiversity

Strategic Objectives: 3) To protect valued landscapes for their visual, historical and biodiversity qualities; and 5) To create and maintain easily accessible green infrastructure, green corridors and spaces around and within the towns and villages to act as wildlife corridors, sustainable transport links and leisure and recreational routes.

Evidence Base: Biodiversity 2020; Biodiversity Action Plan; Biodiversity Opportunity Areas; Green Infrastructure mapping; Habitats and Species Records; Mid Sussex Ancient Woodland Survey; Mid Sussex Infrastructure Delivery Plan; The Natural Choice: Securing the Value of Nature; West Sussex SNCI Register.

Biodiversity will be protected and enhanced by ensuring development:

- *Contributes and takes opportunities to improve, enhance, manage and restore biodiversity and green infrastructure, so that there is a net gain in biodiversity, including through creating new designated sites and locally relevant habitats, and incorporating biodiversity features within developments; and*
- *Protects existing biodiversity, so that there is no net loss of biodiversity. Appropriate measures should be taken to avoid and reduce disturbance to sensitive habitats and species. Unavoidable damage to biodiversity must be offset through ecological enhancements and mitigation measures (or compensation measures in exceptional circumstances); and*
- *Minimises habitat and species fragmentation and maximises opportunities to enhance and restore ecological corridors to connect natural habitats and increase coherence and resilience; and*
- *Promotes the restoration, management and expansion of priority habitats in the District; and*
- *Avoids damage to, protects and enhances the special characteristics of internationally designated Special Protection Areas, Special Areas of Conservation; nationally designated Sites of Special Scientific Interest, Areas of Outstanding Natural Beauty; and locally designated Sites of Nature Conservation Importance, Local Nature Reserves and Ancient Woodland or to other areas identified as being of nature conservation or geological interest, including wildlife corridors, aged or veteran trees, Biodiversity Opportunity Areas, and Nature Improvement Areas.*

Designated sites will be given protection and appropriate weight according to their importance and the contribution they make to wider ecological networks.

Valued soils will be protected and enhanced, including the best and most versatile agricultural land, and development should not contribute to unacceptable levels of soil pollution. Geodiversity will be protected by ensuring development prevents harm to geological conservation interests, and where possible, enhances such interests. Geological conservation interests include Regionally Important Geological and Geomorphological Sites.

2.2.4. Policy DP41 – Flood Risk and Drainage

Strategic Objectives: 1) To promote development that makes the best use of resources and increases the sustainability of communities within Mid Sussex, and its ability to adapt to climate change; and 12) To support sustainable communities which are safe, healthy and inclusive.

Evidence Base: Gatwick Sub Region Water Cycle Study; Strategic Flood Risk Assessment; Water. People. Places SuDS guidance.

Proposals for development will need to follow a sequential risk-based approach, ensure development is safe across its lifetime and not increase the risk of flooding elsewhere. The District Council's Strategic Flood Risk Assessment (SFRA) should be used to identify areas at present and future flood risk from a range of sources including fluvial (rivers and streams), surface water (pluvial), groundwater, infrastructure and reservoirs.

Particular attention will be paid to those areas of the District that have experienced flooding in the past and proposals for development should seek to reduce the risk of flooding by achieving a reduction from existing run-off rates.

Sustainable Drainage Systems (SuDS) should be implemented in all new developments of 10 dwellings or more, or equivalent non-residential or mixed development unless demonstrated to be inappropriate, to avoid any increase in flood risk and protect surface and ground water quality. Arrangements for the long term maintenance and management of SuDS should also be identified.

For the redevelopment of brownfield sites, any surface water draining to the foul sewer must be disconnected and managed through SuDS following the remediation of any previously contaminated land.

SuDS should be sensitively designed and located to promote improved biodiversity, an enhanced landscape and good quality spaces that improve public amenities in the area, where possible.

The preferred hierarchy of managing surface water drainage from any development is:

- 1. Infiltration Measures*
- 2. Attenuation and discharge to watercourses; and if these cannot be met,*
- 3. Discharge to surface water only sewers.*

Land that is considered to be required for current and future flood management will be safeguarded from development and proposals will have regard to relevant flood risk plans and strategies.

2.2.5. Policy DP42 – Water Infrastructure and the Water Environment

Strategic Objectives: 1) To promote development that makes the best use of resources and increases the sustainability of communities within Mid Sussex, and its ability to adapt to climate change; 6) To ensure that development is accompanied by the necessary infrastructure in the right place at the right time that supports development and sustainable communities. This includes the provision of efficient and sustainable transport networks.

Evidence Base: Building Regulations (Approved Document G); Gatwick Sub Region Water Cycle Study; DCLG Housing Standards Review: Technical Consultation, September 2014; South East Water - Water Resources Management Plan 2014, Strategic Flood Risk Assessment.

New development proposals must be in accordance with the objectives of the Water Framework Directive, and accord with the findings of the Gatwick Sub Region Water Cycle Study with respect to water quality, water supply and wastewater treatment and consequently the optional requirement under Building Regulations – Part G applies to all new residential development in the district. Development must meet the following water consumption standards:

- Residential units should meet a water consumption standard of 110 litres per person per day (including external water use);
- Non-residential buildings should meet the equivalent of a 'Good' standard, as a minimum, with regard to the BREEAM water consumption targets for the development type.

Development proposals which increase the demand for off-site service infrastructure will be permitted where the applicant can demonstrate;

- that sufficient capacity already exists off-site for foul and surface water provision. Where capacity off-site is not available, plans must set out how appropriate infrastructure improvements approved by the statutory undertaker will be completed ahead of the development's occupation; and
- that there is adequate water supply to serve the development.

Planning conditions will be used to secure necessary infrastructure provision.

Development should connect to a public sewage treatment works. If this is not feasible, proposals should be supported by sufficient information to understand the potential implications for the water environment.

The development or expansion of water supply or sewerage/sewage treatment facilities will normally be permitted, either where needed to serve existing or proposed new development, or in the interests of long term water supply and waste water management, provided that the need for such facilities outweighs any adverse land use or environmental impacts and that any such adverse impact is minimised.

2.2.6. The following policies from the Lewes District Local Plan are also relevant:

2.2.7. Core Policy 12 – Flood Risk, Coastal Erosion, Sustainable Drainage and Slope Stability

The local planning authority will seek to reduce the impact and extent of flooding and damage from slope failure. This will be achieved by:

1. Steering development away from areas of flood risk (as identified in the latest Environment Agency and SFRA flood risk and climate change maps) where possible. Development in areas of flood risk will be required to meet the national Sequential and Exception tests, where relevant.
2. Where site specific flood risk assessments are required, directing applicants to demonstrate that the development and its means of access will be safe from flooding without increasing the risk of flooding elsewhere. Development should seek to reduce overall flood risk where possible.
3. Requiring flood protection, resilience, resistance and mitigation measures appropriate to the specific requirements of the site. Such measures will be expected to have regard to the character of the natural and built environment of the site and surroundings, to climate change implications and to biodiversity.
4. Liaising closely with the Environment Agency and East Sussex County Council on development and flood risk.
5. Seeking the appropriate management of surface water run-off and ensuring there is no increase in surface water run-off from new developments. This will include requiring new development to incorporate Sustainable Drainage Systems (SuDS), unless it is demonstrated that SuDS are not technically appropriate. The local planning authority will consult East Sussex County Council, the lead local flood authority, on the whole life management and maintenance of SuDS.
6. Ensuring development avoids areas of undeveloped coastline unless it specifically requires a rural coastal location, meets the sequential test and does not have other adverse impacts.
7. Preventing development on unstable areas of coastline and areas at risk of erosion and slope failure, such as those identified in the South Downs Shoreline Management Plan.

The local planning authority will work with partners and applicants to implement the current Shoreline Management Plan, Catchment Flood Management Plan and other relevant flood/coastal protection strategies and plans.

2.2.8. Core Policy 14 – Renewable and Low Carbon Energy and Sustainable Use of Resources

In order to reduce locally contributing causes of climate change, including through the implementation of sustainable construction techniques in new developments, the local planning authority will:

- 1. Encourage renewable and low carbon energy in all development, with proposals responding to the potential identified in the Energy Opportunities Map. Development location and design that takes advantage of opportunities for decentralised, renewable and low carbon energy will be encouraged.*
- 2. Support applications for low carbon and renewable energy installations, subject to the following matters being satisfactorily assessed and addressed:*
 - i. Appropriate contribution to meeting national and local renewable heat and energy targets;*
 - ii. Protecting the special qualities and setting of the South Downs National Park, in accordance with national park purposes and the duties of regard by relevant authorities;*
 - iii. Landscape and visual impact;*
 - iv. Local amenity impact;*
 - v. Ecology impact; and*
 - vi. Cultural heritage impact, including the need to preserve and enhance heritage assets.*
- 3. Require planning applications relating to Core Strategy strategic site allocations to be accompanied by an Energy Strategy. The Energy Strategy will seek to incorporate decentralised and renewable or low carbon technologies into the development proposal. Where a strategic site is developed in phases, the Energy Strategy will guide the development of infrastructure for renewable and/or low carbon technologies in a coordinated way.*
- 4. Require all new dwellings to achieve water consumption of no more than 110 litres per person per day, unless it can be demonstrated that it would not be technically feasible or financially viable. All new non-residential developments over 1,000 square metres (gross floorspace) will be expected to achieve the BREEAM 'Very Good' standard and developers will be expected to provide certification evidence of the levels achieved in the relevant requirements/standards at the planning application stage.*

2.2.9. This report seeks to address the planning policies relevant for the proposed site and present a sustainable strategy.

2.2.10. This report should be read in conjunction with other reports prepared for this development.

2.3. Building Regulations

- 2.3.1. All newbuild development must comply with Building Regulations. The Approved Document L 2021 (AD-L 2021) provides for a 31% reduction in Carbon emissions over the previous 2013 edition.
- 2.3.2. AD-L 2021 came into effect 15th June 2022, with a 12 months transitional arrangement. Sites which have been notified to local authorities prior to this date have 12 months transitional allowance on a plot by plot basis. That is to say if a plot has commenced construction prior to 15th June 2023 it will be built under AD-L 2013. It is understood that part of Hurst Farm, Haywards Heath will be developed in accordance with AD-L 2021.
- 2.3.3. Parts of this development may also fall under the upcoming Future Homes Standard, which was expected to be published in 2025, now expected early 2026, and represents an improvement on current (Part L 2021) building regulations by approximately 49%.
- 2.3.4. There are two transitional periods proposed, but it's likely that some, if not all, the units on site will fall under FHS regulations.
- 2.3.5. The former government minister Christopher Pincher is quoted as saying, "A new home built to Future Homes Standard in 2025 is to have 75-80% lower carbon emissions than Part L 2013.
- 2.3.6. Based on the above statement and the 31% betterment from Part L1A 2013 to Part L1A 2021 regulations, it can be reasoned that the likely betterment over current regulations (Part L 2021) will be 49%, as shown below:

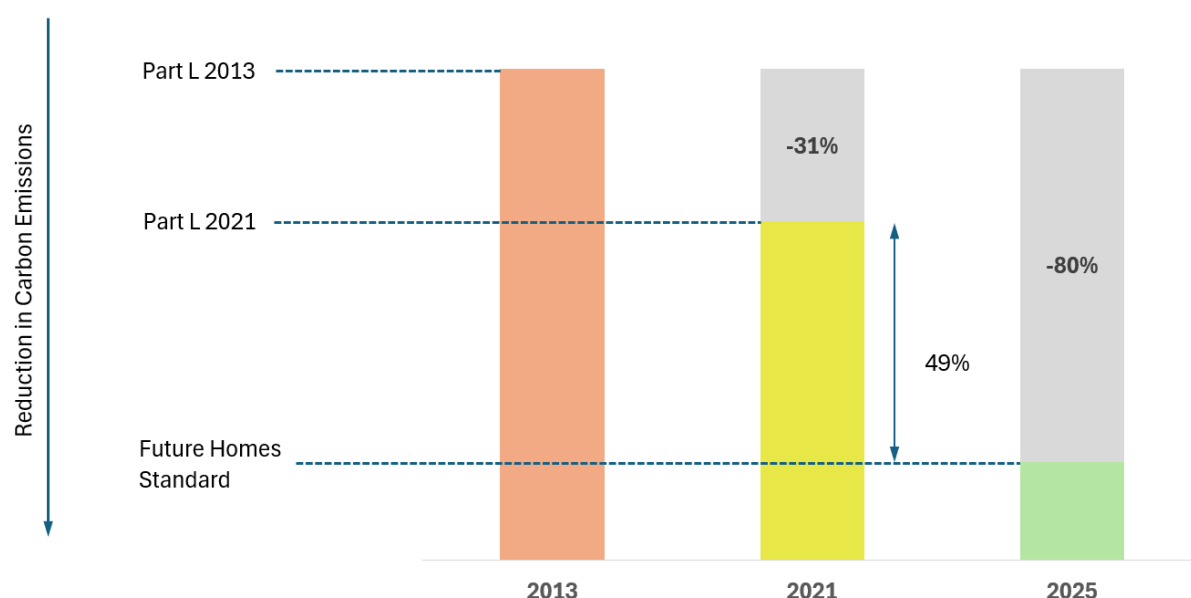


Figure 1: Regulatory targets for Carbon emissions. Percentage figures are reductions over Part L 2013 baseline.

3. Sustainability Appraisal

3.1. Green Guide Specification

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

3.1.2. 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 (Beam and EPS Block)	Structural topping on beam and expanded polystyrene flooring	820140015	A+
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 – External Timber Frame (single and 2 storey)	UK produced natural slate on timber battens, breather membrane, OSB/3 sheathing, timber frame with insulation, vapour control layer, plasterboard on battens, paint	806210566	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
Wall – Party (timber)	Robust Detail E-WT-2: Twin timber frames with 50mm min. between sheathing and 240mm min. between wall linings; to each side 9mm OSB sheathing, 60mm mineral wool (10-60kg/m ³) between studs, 2 or more layers gypsum based board (22kg/m ²) and emulsion paint	818570065	A+
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+

- 3.1.3. 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.

3.2. Responsible Sourcing

- 3.2.1. BDW 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 B 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;*
 - *Timber frame supplier Oregon Timber Frame.*
- 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 Redrow Sustainable Procurement Policy can be seen in Appendix C. The policy sets a high standard of sustainability when sourcing materials.

3.3. Waste Management

- 3.3.1. Appendix D shows an extract of BDW'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. BDW achieved 97% of construction waste diverted from landfill in 2018 and BDW's Sustainability Framework 2020+ sets targets to continue diversion from landfill and reduce construction waste intensity.

3.4. Flood Risk

- 3.4.1. Appendix E 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.
- 3.4.4. This therefore complies with Policy DP41 of the Mid Sussex District Plan and Core Policy 12 of the Lewes District Local Plan.

3.5. Ecology

- 3.5.1. A full Ecology and Nature Conservation Assessment has been carried out for the site.
- 3.5.2. The Ecology and Nature Conservation Assessment takes into account any habitats and species which could be impacted by the proposed development and puts forth recommendations on how to minimise any potential impacts and protect or improve any habitats.
- 3.5.3. Full details of the recommended approach can be found in the associated report.
- 3.5.4. This therefore complies with Policy DP38 of the Mid Sussex District Plan.

3.6. Sustainable Urban Drainage

- 3.6.1. A Drainage and Flood Risk Assessment has been carried out for the site.
- 3.6.2. This study included a SuDS Assessment. The assessments carried out consider any potential drainage and flood risk issues which could arise from the development and put forward recommendations to mitigate these impacts.
- 3.6.3. Full details of the recommendations put forward can be found in the associated report.
- 3.6.4. This therefore complies with Policy DP41 of the Mid Sussex District Plan and Core Policy 12 of the Lewes District Local Plan.

3.7. Air Quality

- 3.7.1. A full Air Quality Assessment has been carried out for the site.
- 3.7.2. The Air Quality Assessment report includes information on potential mitigation measures which could be implemented for the site to reduce impacts on the quality of air in the vicinity of the development.
- 3.7.3. Full details of the Air Quality Assessment can be found in the associated report.

3.8. Electric Vehicle Charging

- 3.8.1. Providing EV charging points or the ability to retrofit EV charging points is an exemplary measure for sustainability and promotes sustainable lifestyles for residents.
- 3.8.2. 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 2035 (GOV.UK, April 2025).
- 3.8.3. 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 2 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 2 – Common infrastructure options for Mode 2 and 3 EV charging points (BEAMA, 2015)

- 3.8.4. It is currently proposed that there will be provision of one EV charging point for all plots with dedicated parking.
- 3.8.5. The full specification of these charging points will be determined during detailed design stage.
- 3.8.6. The development therefore complies with Approved Document S of the 2021 Building Regulations.

3.9. Water Use

3.9.1. The design team will implement a specification which complies with the optional requirement of 110 litres/person/day as set out in Approved Document G 2015 with 2016 amendments (AD-G).

3.9.2. While the build specifications are not yet set, the table below provides an example of a compliant strategy, delivering reduced water consumption of 110litres/person/day.

		(1)	(2)	(3)	(4)
Installation type	Unit of measure	Capacity / flow rate	Use factor	Fixed use (litres/ person/ day)	Litres/ person/day = [(1) × (2)] + (3)
WC (dual flush)	Full flush volume (litres)	4	1.46	0.00	5.84
WC (dual flush)	Part flush volume (litres)	2.6	2.96	0.00	7.696
Taps (excluding kitchen/utility room taps)	Flow rate (litres/minute)	5	1.58	1.58	9.48
Bath (where shower also present)	Capacity to overflow (litres)	170	0.11	0.00	18.7
Shower (where bath also present)	Flow rate (litres/minute)	9	4.37	0.00	39.33
Kitchen/utility room sink taps	Flow rate (litres/minute)	5	0.44	10.36	12.56
Washing machine	Litres/kg dry load	8.17	2.1	0.00	17.157
Dishwasher	Litres/place setting	1.25	3.6	0.00	4.5
	(5)	Total calculated use = (Sum column 4)			115.3
	(6)	Contribution from greywater (litres/person/day) from Table 4.6			0
	(7)	Contribution from rainwater (litres/person/day) from Table 5.5			0
	(8)	Normalisation factor			0.91
	(9)	Total water consumption = [(5) – (6) – (7)] x (8)			104.9
	(10)	External water use			5.0
Approved Document G	(11)	Total water consumption = (9) + (10) (litres/person/day)			109.9

3.9.3. Alternative component consumption rates are available which can achieve the required water consumption. The rates provided are representative only.

3.9.4. 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.

3.9.5. This therefore complies with Policy DP42 of the Mid Sussex District Plan and Core Policy 14 of the Lewes District Local Plan.

3.10. Overheating Risk

- 3.10.1. Extreme temperatures have an adverse effect on health and wellbeing. 'Overheating' occurs when the building temperature exceeds the limits of thermal comfort. Since UK weather data records began in 1884, the ten warmest years have all occurred since 2003, including 2020, 2022 and 2023. Future temperatures should be considered across a building's lifetime to ensure further thermal comfort. Furthermore, advances in air tightness and thermal insulation levels have exacerbated overheating risk.
- 3.10.2. The Building Regulations (Amendment) (England), 2021, requires all residential buildings limit overheating risk by limiting unwanted solar gains in summer and by providing an adequate means of removing excess heat from the indoor environment. This can be assessed either by using the simplified method, which is set out in Section 1 of Approved Document O (ADO), or by using the dynamic thermal modelling method, as set out in Section 2 of ADO, which is based on CIBSE TM59.
- 3.10.3. There are many factors to consider when assessing overheating risk, such as the building orientation, cross ventilation, glazing area, window openable area, total solar transmittance of glazing, building fabric efficiency, solar shading and ventilation provision.
- 3.10.4. Solutions to mitigate overheating risk include improving shading, which limits solar gains, and increasing ventilation, which can help purge habitable rooms of hot air. Shading solutions include low g-factor glazing, brise soleil, shutters and overhangs. Ventilation solutions include low-noise extract fans, mechanical ventilation (if heat recovery is specified, it must include a summer bypass), and ceiling fans. All ventilation systems must meet the noise requirements set out in Approved Document F.
- 3.10.5. The safety and reasonable enjoyment of the residence of all occupants must be considered when designing overheating solutions. If all strategies to passively cool the building are insufficient, then mechanical cooling may be used.

4. Energy Performance

4.1. Assessment Methodology

4.1.1. Environmental Economics will model the proposed dwellings using the software Design SAP 10 by Elmhurst and approved by BRE. The software provides a number of outputs, and based on the provided specification for this proposed development, we are able to assess the following areas for our calculations:

- *Building regulations compliance, including:*
 - *Carbon emissions (kg CO₂/m²/year);*
 - *Primary Energy Demand (kWh/m²/annum);*
 - *Fabric Energy Efficiency (kWh/m²/annum).*
- *Energy usage per year (kWh/annum);*
- *Energy costs per year (£/annum);*
- *More detailed breakdowns by end use (space heating, water heating, cooking, lighting, appliances).*

4.1.2. Each of these outputs can be used in different ways to analyse the performance of the dwelling. The total regulated carbon emissions for each property is based upon:

- *Space heating;*
- *Water heating;*
- *Electricity for pumps and fans;*
- *Electricity for lighting.*

4.1.3. SAP software is issued by independent software suppliers, and checked and approved on behalf of government by the Building Research Establishment (BRE).

4.1.4. The dwellings on the proposed development will be assessed using this methodology during the detailed design stage.

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.
- 4.2.2. The proposed development adopts nationally recognised design and construction principles as the industry moves towards zero carbon. The principles are illustrated in Figure 3 below.

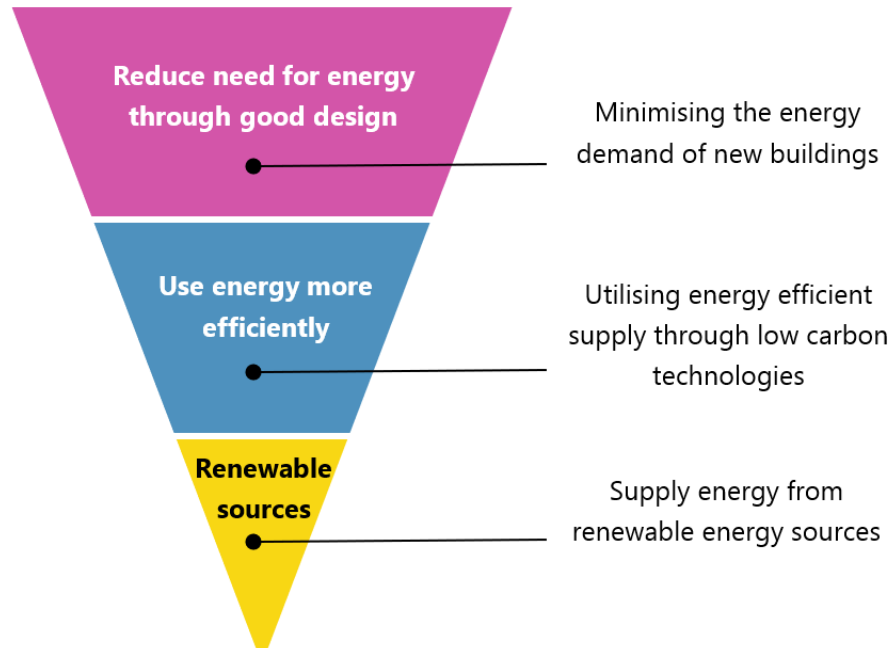


Figure 3 – The Energy Hierarchy

- 4.2.3. In order to reduce the residual carbon emissions a number of improvements were made to the standard material and product specification. These improvements include:
- *Upgraded heating and hot water controls*
 - *Delayed start thermostat*
 - *Design air permeability of 4.00m³/hr/m²*
 - *Bespoke thermal bridging details*

4.3. Fabric Improvements Part L1A 2021

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 for dwellings built to Part L 2021 are shown in Tables 2 and 3 below.

Table 2 –Part L 2021 Build Specification - Masonry

<i>Element</i>	<i>Minimum Standard</i>	<i>Improved Specification</i>	
-	<i>W/m²k</i>	<i>Description</i>	<i>W/m²k</i>
Walls	0.26	Full fill cavity	0.23
Roof	0.16	500mm Mineral Wool Horizontal Ceiling, Loft Space	0.09
		Sloping Ceiling to have 100mm PUR between joists, and 55mm PUR Board underlaid	0.15
Floors	0.18	225mm TE Platinum Insulation	0.10 - 0.12
Doors	1.60	Double glazed Low-E, u-PVC frame	1.00 - 1.60
Glazing	1.60	Double glazed Low-E, u-PVC frame	1.30

Table 3 – Part L 2021 Build Specification – Timber frame

<i>Element</i>	<i>Minimum Standard</i>	<i>Improved Specification</i>	
-	<i>W/m²k</i>	<i>Description</i>	<i>W/m²k</i>
Walls	0.26	Timber Frames, insulation between studs	0.20
Roof	0.16	Loft Space – 500mm Mineral Wool	0.09
		Sloping Ceiling to have 100mm PUR between joists, and 55mm PUR Board underlaid	0.16
Floors	0.18	Beam & Block floor system	0.11
Doors	1.60	Double glazed Low-E, u-PVC frame	1.30
Glazing	1.60	Double glazed Low-E, u-PVC frame	1.30

- 4.3.2. Please note that this specification is not finalised and is subject to change up until detailed design stage.
- 4.3.3. 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.
- 4.3.4. As a result of following these junction details and focusing on build quality air permeability will also decrease. A target air pressure rating of 4.00m³/hr.m² has been set for all houses on site which is an improvement on the maximum allowable rating in the 2021 Building Regulations.

4.4. Future Homes Standard

- 4.4.1. Owing to the timeline of this development it is expected that a proportion of the site will be constructed in accordance with the Future Homes Standard.
- 4.4.2. As of the time of writing, requirements for FHS have not been finalised. There are currently two options which are under UK Government consultation, as shown in Tables 4 and 5 below in comparison to the current requirements under Part L 2021:

Table 4 – FHS Services Comparison with Part L 2021

	<i>Part L 2021</i>	<i>FHS Option 1</i>	<i>FHS Option 2</i>
Space +Water Heating	Mains Gas boiler	Heat Pump – ErP A++	Heat Pump – ErP A++
Water Storage	Loss = $0.85 \times (0.2 + 0.051 V^{2/3})$ kWh/Day	120mm Insulation	120mm Insulation
Lighting	80 l/w	120 l/w	120 l/w
WWHRS	Y	Y*	N
Ventilation	Natural with intermittent fans	Continuous dMEV, 0.15 w/l.s	Natural with intermittent fans
Airtightness	5m ³ /m ² /hr @ 50Pa	4m ³ /m ² /hr @ 50Pa	5m ³ /m ² /hr @ 50Pa
PV	Y	Y**	N

*WWHRS removed from notional dwelling for single story dwellings.

**PV to be removed from notional dwelling for blocks of flats >15 stories or in the case where buildings have limited roof space.

Table 5 – FHS Notional U-Values Comparison with Part L 2021

	<i>Part L 2021</i>	<i>FHS (2023 Consultation)</i>
Floor (W/m²K)	0.13	0.13
Wall (W/m²K)	0.18	0.18
Roof (W/m²K)	0.11	0.11
Window (W/m²K)	1.2	1.2
Door (W/m²K)	1.00	1.00

- 4.4.3. At the time of writing, one cannot check with compliance due to the lack of approved software. The performance figures above are published by DLUHC in order to provide the industry with guidance. Until working software is available, it is suggested compliance specifications are matched to the tables above.
- 4.4.4. There are currently also two options for transitional periods as stated below:
- *Option 1 – 6 month period between publication and regulations coming into force followed by a 12 month transitional period.*
 - *Option 2 – 12 month period between publication and regulations coming into force followed by a 12 month transitional period.*

4.5. Building Services & Renewable Energy (LZCT)

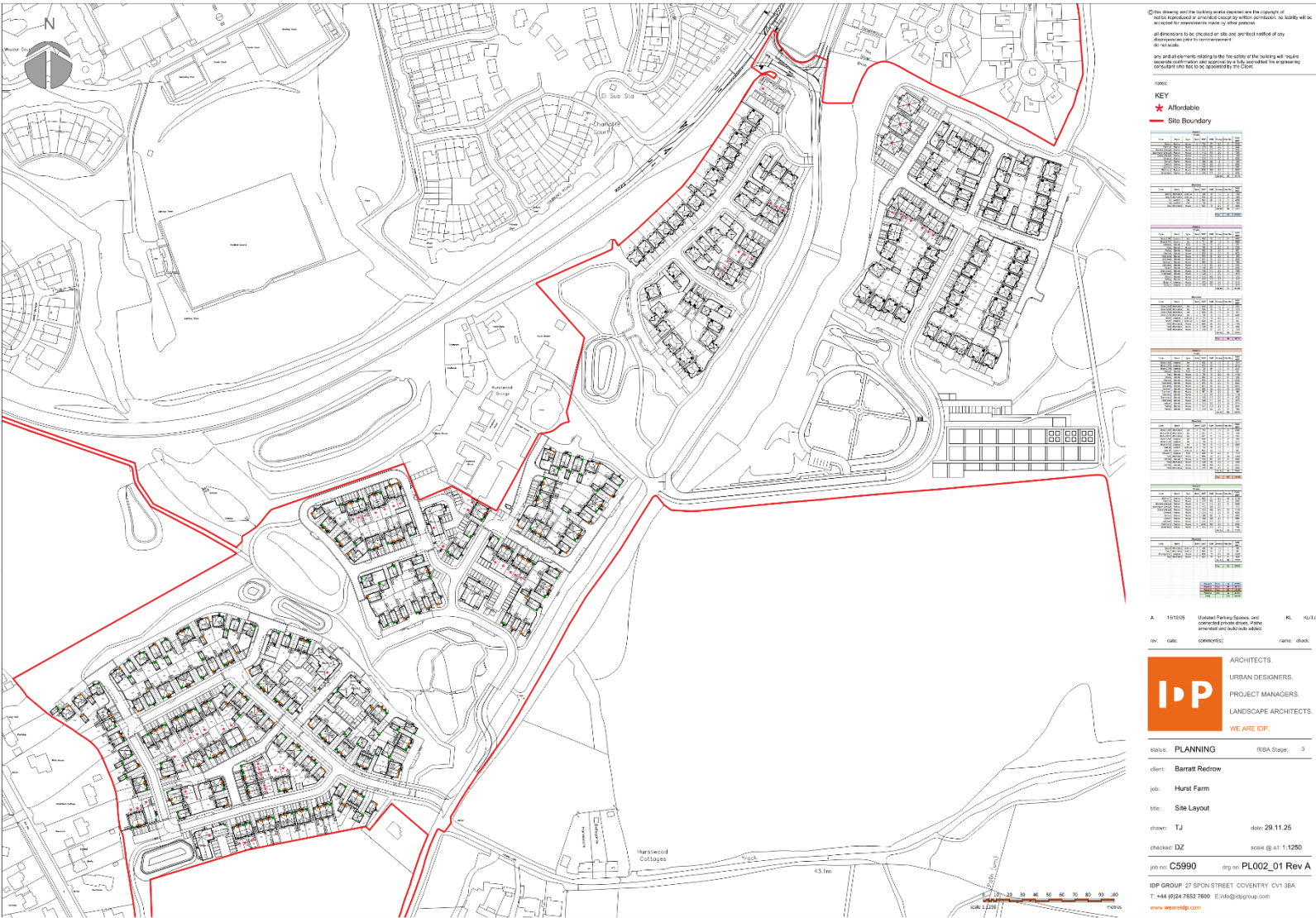
- 4.5.1. The systems used in a property to supply hot water and heating, as well as control it, are important to the overall energy demand of a property. AD-L 2021 includes requirements for efficiency and controls of such equipment, including space heating, water heating, ventilation and lighting.
- 4.5.2. The design of building services which provide space heating and domestic hot water, ventilation, and lighting, must be considered in a holistic way in order to avoid unintended consequences and to maximise the benefits from such systems
- 4.5.3. After due consideration of the potential Low and Zero Carbon Technologies (LZCT) available (shown in Appendix F) the design team propose to adopt the following technologies which provide benefits / compliance with national and local policies as listed:
- ***Air source heat pump (ASHP):***
 - No connection to the gas grid;
 - Uses grid electricity as the fuel;
 - Provides 100% space heating and domestic hot water;
 - Minimum co-efficient of performance over 2.5 (250% efficient);
 - ASHP are defined as LZCT. For every 1 kWh of grid electricity consumed they deliver approx. 3kWh into the dwelling (300% efficient). 2kWh is taken from ambient air;
 - Delivers very good performance within Building Regulations assessments;
 - Significant reduction in primary energy demand due to the Coefficient of Performance (COP)
- 4.5.4. It is currently proposed that ASHPs will be used to improve dwelling performance to the level required for Part L 2021.
- 4.5.5. For FHS it is currently proposed that ASHPs will be utilised to improve dwelling performance to the required levels. It is currently not possible to fully detail whether PV will be required to meet FHS levels. Calculations for these elements will be carried out at detailed design stage.
- 4.5.6. Where installed, hot water cylinders can lose a significant amount of energy. 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.
- 4.5.7. The viability of a heat network was considered for this development, however DHNs (District Heating Networks) are generally suited to development with high thermal demand, typically provided by sufficient density or a large anchor load, i.e., high-density flats or leisure centres.

- 4.5.8. The development of highly-insulated, high-efficiency homes such as those proposed limits the heating demand of the site, and therefore, the feasibility and viability of the installation of district heating. For these reasons, DHN is considered unsuitable for this development.
- 4.5.9. Lighting provision will be from LED low energy fittings achieving a minimum efficacy of 100 lamp lumens per circuit watt, an improvement of over 50% from AD-L 2013 performance levels.
- 4.5.10. Smart meters will be installed on all properties, providing:
- Real time information on energy use both in terms of consumption and cost
 - Occupier can manage their energy, save money and reduce carbon emissions
 - Smart meters will also allow for easier switching between suppliers
 - Facilitate a more reactive, price driven, demand-response
 - End estimated billing and eliminate the need for meter readers to visit premises

5. Conclusion

- 5.1.1. This sustainability statement has been produced for the residential site Hurst Farm, Haywards Heath.
- 5.1.2. 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;
 - Effective waste management procedures to minimise waste;
 - The implementation of drainage, ecology and air quality assessments;
 - The provision of EV charging points to all plots;
 - Efficient internal and external water use in line with building regulations;
 - Enhanced building fabric specification with a Fabric-First approach including high efficiency insulation and provision of efficient appliances;
 - Use of ASHP to achieve the efficiency levels required under Part L 2021 and Future Homes Standard.
- 5.1.3. It should be noted that future policies and building regulations may require an update to the sustainability measures within this report.
- 5.1.4. The proposed site is found to present a positive sustainable development based on the assessed sustainability criteria.

Appendix A – Proposed Site Layout



Appendix B – Responsible Sourcing Certificates



Certificate of Registration

RESPONSIBLE SOURCING OF 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 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.

Gyproc plasterboard, Glasroc specialist board, Thistle plaster, Gyproc cove, Gyproc ready-mix joint cement - Performance rating Excellent.

For and on behalf of BSI:

Matt Page, Managing Director Assurance - UK & Ireland

Original Registration Date: 2014-10-13

Latest Revision Date: 2023-09-01

Effective Date: 2023-09-01

Expiry Date: 2026-08-31

Page: 1 of 4



...making excellence a habit.™

This certificate was issued electronically and remains the property of BSI and is bound by the conditions of contract. An electronic certificate can be authenticated [online](https://www.bsigroup.com/ClientDirectory). Printed copies can be validated at www.bsigroup.com/ClientDirectory

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PR, Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.



Certificate of Registration

Responsible Sourcing of Products

This is to certify that:



Tarmac Cement & Lime Limited
Part of Tarmac Holdings Limited
T3, Ground Floor
Trinity Park, Bickenhill Lane
Solithull
Birmingham
B37 7ES
United Kingdom

Holds Certificate Number: **BES 568430**

and complies with the requirements of BES 6001: Issue 4.0 – 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.

Asphalt - performance rating Excellent.

For and on behalf of BSI:



Matt Page, Managing Director Assurance - UK & Ireland

Original Registration Date: 2011-03-10

Latest Revision Date: 2024-02-07

Effective Date: 2024-02-07

Expiry Date: 2027-02-07



Page: 1 of 13

...making excellence a habit.™

This certificate was issued electronically and remains the property of BSI and is bound by the conditions of contract.

An electronic certificate can be authenticated [online](https://www.bsigroup.com/ClientDirectory)

Printed copies can be validated at www.bsigroup.com/ClientDirectory

Information and Contact: BSI, Milepark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK
A Member of the BSI Group of Companies.



Certificate of Registration

Responsible Sourcing of Products

This is to certify that:

H+H UK Limited
Ightham Sandpits
Borough Green Road
Ightham
Sevenoaks
TN15 9JB
United Kingdom

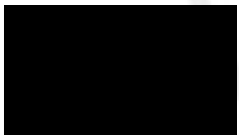
Holds Certificate Number:

BES 636778

and complies with the requirements of BES 6001: Issue 4.0 – 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: Solar Aircrete Blocks, Standard Aircrete Blocks, High Strength Aircrete Blocks, Super Strength Aircrete Blocks, Coursing Units.
Overall Assessment Score: Very Good.

For and on behalf of BSI:


Matt Page, Managing Director Assurance - UK & Ireland

Original Registration Date: 2015-07-23

Effective Date: 2024-07-23

Latest Revision Date: 2024-07-11

Expiry Date: 2027-07-22



Page: 1 of 3

...making excellence a habit.™

This certificate was issued electronically and remains the property of BSI and is bound by the conditions of contract. An electronic certificate can be authenticated [online](https://www.bsigroup.com/ClientDirectory). Printed copies can be validated at www.bsigroup.com/ClientDirectory

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP, Tel: +44 345 080 9000
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.
A Member of the BSI Group of Companies.



PEFC International database extract

This extract has been generated on 11.03.2025

Verification link: <https://pefc.org/find-certified/details?cbResetParam=1&EID=E-IFI5J8&CID=C-UFGA0N&LID=L-BU770J>

Oregon Timber Frame - Derby

Oak House, Pioneer Way
Derby
United Kingdom
VAT n°:

Certificate

N°: CATG-PEFC-COC-320
Subcertificate N°:
Type: COC - Multisite
Status: Valid
Validity end: 09.07.2029

Issued by

Certification & Timber Grading (CATG)
29A Princes Crescent
LA4 6BY Morecambe
United Kingdom
sales@catg.co.uk
+441524400632
<http://www.catg.co.uk>

PEFC Trademarks licence

N°: PEFC/16-37-1457
Sublicence N°:
Type: C - Forest related industries
Status: Valid

Issued by

PEFC United Kingdom
Sheffield Technology Parks Cooper Buildings
Arundel Street
S1 2NS Sheffield
United Kingdom
info@pefc.co.uk
+441143072334
<http://www.pefc.co.uk/>

Due to the ongoing military invasion and humanitarian crisis in Ukraine, the Board of PEFC International clarified on March 4 2022 that all timber originating from Russia and Belarus is 'conflict timber' and therefore cannot currently be used in PEFC-certified products. For more information, see: <https://pefc.org/conflict-timber-faq>

PEFC International

International Cointrin Center, Route de Pré-Bois 20, CH-1215, Geneva, Switzerland
+41 22 799 45 40 | data@pefc.org | www.pefc.org

Page 1 of 2

Appendix C – Sustainable Procurement Policy



Sustainable Procurement policy

Introduction

Our purpose is: *'Making sustainable living a reality, building strong communities'*. The Group is determined to be the leading sustainable national housebuilder. We believe that fundamental to building quality homes is building a positive environmental, social and economic legacy for future generations. Sustainability presents opportunities for business prosperity and growth, encourages innovation and resilience, and improves our products and customer experience.

We purchase significant volumes of materials, and work with many sub-contractors across the UK. Sustainable sourcing of materials and labour is critical to the delivery of our strategy.

Objectives

We are committed to continuously safeguarding the environment and maintaining good labour relations by:

- Working with suppliers, contractors and supply chains to minimise the negative 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.

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 as set out in our Trade Specifications; and
- Suppliers must maintain Health and Safety and Environmental Management Systems that are of a suitable standard for the operations they are engaged in. As a preference, organisations should gain certification to ISO45001 and ISO14001.

Suppliers must maintain an ethical sourcing policy, or other 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 Organization's conventions are complied with;
- 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;



- 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 protected characteristic.

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;
- b) Minimise ecological damage and declines in biodiversity;
- c) Have low embodied carbon as demonstrated by an appropriate method such as an Environmental Product Declaration (EPD);
- d) Utilise less resources and less virgin material by design;
- e) Can be re-used, recycled or recovered;
- f) Minimise packaging waste;
- g) Minimise the use of water;
- h) Use local resources; and

We will provide training for our internal procurement teams on a risk basis. 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
22 October 2024

Appendix D – 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

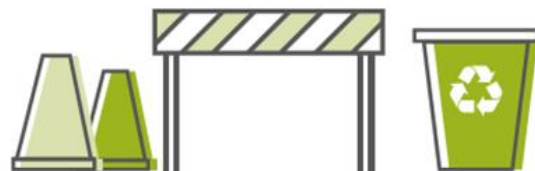
OUR TARGET

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 E – Flood Risk Map (Zone 1)



Flood map for planning

Your reference
Hurst Farm

Location (easting/northing)
534051/122441

Created
15 January 2026 11:23

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

You will need to do a flood risk assessment if your site is **any of the following**:

- bigger than 1 hectare (ha)
- in an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

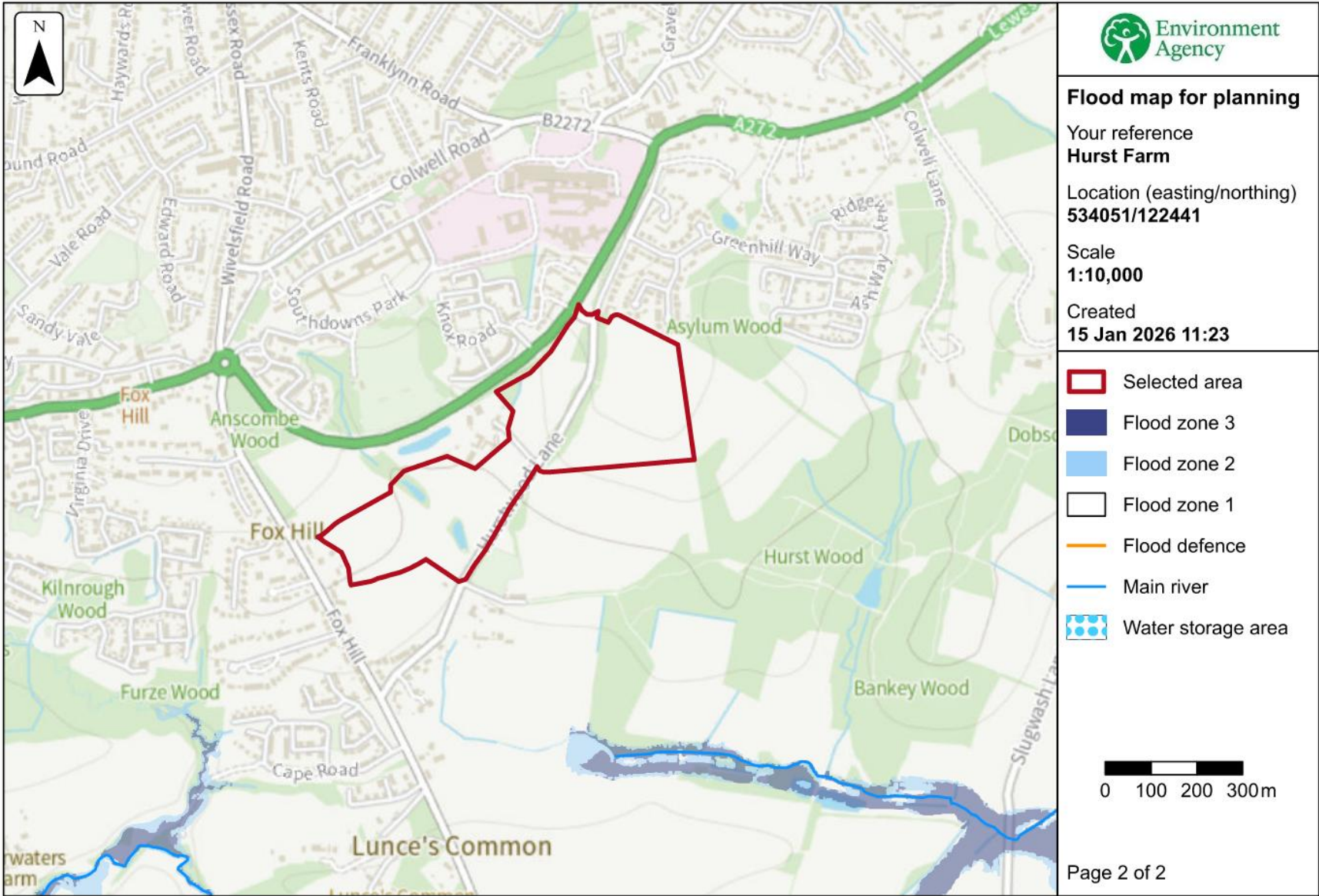
Notes

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 2026 AC0000807064. <https://flood-map-for-planning.service.gov.uk/os-terms>



© Environment Agency copyright and/or database rights 2026. All rights reserved. © Crown copyright and database rights 2026 Ordnance Survey licence number AC0000807064.

Appendix F – Low and Zero Carbon Technologies

	Description	Advantages	Disadvantages	Adopted?
Solar Hot Water (SHW)	SHW systems generate energy which is used to heat stored water (in a special solar hot water cylinder) which offsets the energy required for the boiler, thereby reducing fuel use and reducing carbon emissions.	Meets approximately 50% hot water demand for a dwelling	PV cells provide more efficient use of roof area compared to SHW	
Air Source Heat Pumps (ASHP)	ASHP provide heating and hot water to a home through thermal energy gathered from air outside the dwelling.	- Net zero ready complying with UK Government policy to reach net zero carbon by 2050. - This is achieved by utilizing low carbon grid electricity. - Typical CoP of 3.5 leading to large energy and carbon savings.	Requires professional commissioning to ensure optimal performance. This ensures cost parity with gas systems.	✓
Ground Source Heat Pumps (GSHP)	GSHP provide heating and hot water to a dwelling through geothermal effects.	CoP can be greater than that of ASHPs	- Rely on having appropriate ground conditions - Expensive to install	
Biomass Heating Systems	Biomass heating systems burn fuels, considered carbon neutral, to heat the water required for a dwelling.	- Large variety of systems available - Good carbon savings when replacing electrical hot water system	High maintenance	
Wind Turbines	Wind turbines provide electricity directly to a dwelling. They can be added to a property in two ways: pole mounted or building mounted.	Large-scale pole mounted turbines provide great financial return	- Pole mounted requires a lot of space - Building mounted have lower power output	

Subject to final SAP calculations, the following technologies could be considered for the scheme:

Description		Advantages	Disadvantages	Adopted?
Photovoltaic (PV) Cells	Generates electricity from solar energy from the sun.	• Provides carbon savings • Excess electricity can be exported to the grid • Low maintenance	• Additional capital cost	✓
Waste Water Heat Recovery (WWHR)	Recovers the energy that is lost from the waste water that is generated from showers.	• Reduces load on the main DHW system, leading to greater energy/carbon savings • Passive design requiring very low maintenance	• Additional capital cost	