

Imberhorne Farm, East Grinstead

Vistry Homes South East

Energy and Sustainability Statement

AES Sustainability Consultants Ltd

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Initial issue	Alysha Bowdley	02/12/2025	-
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This statement has been commissioned by Vistry Homes South East to detail the proposed approach to sustainable construction to be employed at the site at Imberhorne Farm, East Grinstead. It should be noted that the details presented, including the proposed specifications, are subject to change as the detailed design of the dwellings progresses, whilst ensuring that the overall commitments will be achieved.

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1. Introduction

Preface

- 1.1. This Sustainability Statement has been prepared on behalf of in support of the development of the site known as Imberhorne Farm, East Grinstead.

Development Description

- 1.2. The proposed development site is located on the land adjacent to Imberhorne lane and approximately three miles East of East Grinstead. The site lies within the administrative boundary of Mid Sussex District Council.
- 1.3. Outline planning permission was sought under application reference DM/23/2699 for the following:

'Hybrid planning application seeking 1) outline planning permission for a mixed use development comprising up to 550 dwellings (Use Class C3), a care village of up to 150 dwellings (Use Class 2), land for a 2 form entry primary school (including early years provision and special needs education provision), mixed use neighbourhood centre, allotments, landscaping and sustainable urban drainage; and 2) full planning permission for playing fields, new sports pavilion, and running track associated with Imberhorne Secondary School, a Suitable Alternative Natural Greenspace (SANG) with associated car park, access from Imberhorne Lane, internal road to the SANG, pedestrian/cycle link from Imberhorne Lane and associated landscaping and infrastructure. (Additional/amended information and plans received 22nd May 2024).'

- 1.4. This statement has been prepared to support the Reserved Matters application for 550 homes including siting, design, appearance and landscaping. The proposals would deliver 550 dwellings across a range of apartment blocks and two to four bedroom houses. The proposed site layout is shown in Figure 1.

Purpose and Scope of the Statement

- 1.5. This statement has been prepared to address relevant national and local policies relating to the sustainable design and construction of dwellings, whilst addressing a range of additional sustainable design considerations and policies contained within the Mid Sussex design guide (adopted November 2020) and the Mid Sussex District Plan 2014 to 2031 (adopted March 2018)

- 1.6. This statement demonstrates that through a combination of fabric measures and with the implementation of low carbon renewable energy systems, the development will deliver a level of energy performance significantly beyond a Part L 2021 baseline.
- 1.7. A range of additional sustainable design considerations will be addressed including resource efficiency, waste reduction and water efficiency, both during and after construction.



Figure 1. Proposed Site Layout – Imberhorne Farm, East Grinstead

2. Planning Policy

Local Planning Policy

- 2.1. This statement will address requirements as set out within the Mid Sussex design guide (adopted November 2020) and the Mid Sussex District Plan 2014 to 2031 (adopted March 2018)
- 2.2. Policy DP39 and Principle DG37- 'Sustainable Construction' and 'Design and Deliver high quality buildings that minimize their environmental impact' demonstrate how energy conservation and improved resource efficiency will be achieved through sustainable design and construction.

Policy DP39 – Sustainable Design and Construction

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. Evidence Base: Gatwick Sub Region Water Cycle Study; West Sussex Sustainable Energy Study, Mid Sussex Sustainable Energy Study.

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
- networks where viable and feasible
- Use renewable sources of energy
- Explore opportunities for efficient energy supply through the use of communal heating. 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

Principle DG37: Deliver high quality buildings that minimise their environmental impact.

The construction industry makes a significant contribution to CO₂ emissions utilising substantial volumes of non-renewable resources and generating pollution and waste. The need for sustainable approaches to building design is therefore fundamental if the challenges associated with climate change, resource depletion and pollution are to be addressed, and will be necessary to achieve the Government's Future Homes Standard.

The Council welcomes innovative and inventive designs that respond to the sustainability agenda by minimising the use of resources and energy both through building construction and after completion.

Applicants must demonstrate how this has informed their design and should consider in particular:

- Orientation and design of buildings and roofs to maximise daylight / sunlight penetration and solar gain, whilst also avoiding overheating
- The use of green roofs or walls to reduce storm water run-off, increase sound-proofing and biodiversity
- The use of materials with low embodied energy (for example, renewably sourced timber and recycled materials)
- The use of sustainable materials that are locally sourced wherever possible
- Incorporating high levels of insulation (in combination with air tightness and temperature control systems) including the use of materials with a high thermal mass, such as stone or brick, which store heat and release it slowly
- Incorporating renewable energy including photovoltaics, solar thermal water heating, ground and air source heat pumps
- The use of low flow technology in water fittings, rainwater harvesting systems and grey water recycling systems to reduce water consumption to 110 litres/person/day (maximum)
- Laying out development to support identified opportunities for decentralised renewable or low carbon energy systems

National Planning Policy Framework

- 2.3. In December 2024, the Government published the updated National Planning Policy Framework (NPPF), which sets out the Government's planning policies for England and how these are expected to be applied.
- 2.4. The planning process has been identified as a system to support the transition to a low carbon future in response to climate change by assisting in the reduction of greenhouse gas emissions and supporting renewable and low carbon energy.
- 2.5. Paragraph 164 sets out what is expected from new developments when considering strategies to mitigate and adapt to climate change:

164. New development should be planned for in ways that:

- a. avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaption measures, including through the planning of green infrastructure; and
- b. can help to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards.

Current National Policy Standards

- 2.6. The government introduced the next revision in Building Regulations, known as Part L 2021 in December 2021, which came into effect for buildings where construction commenced after 15th June 2023. The new standards require a 31% reduction in CO₂ emissions compared with the previous Building Regulations standard.

Proposed Strategy

- 2.7. This statement is intended to establish the proposed approach to sustainable construction and reduction in CO₂ emissions to be delivered at the development.
- 2.8. It is proposed that the development is designed to incorporate all applicable guidance contained within the Mid Sussex design guide and Mid Sussex district plan. Specifically, in relation to renewable energy provision and the construction of highly efficient buildings which seek to minimise water demand, CO₂ emissions, as well as energy use.
- 2.9. This statement will demonstrate that through a combination of fabric efficiency measures and renewable energy, the development will achieve site wide CO₂ emission reductions in line with policy requirements and in accordance with Part L 2021 of Building Regulations.
- 2.10. The development also considers the changing future climate and seeks to build in resilience through appropriate construction techniques and materials to avoid future risks of overheating.
- 2.11. There are many other aspects of sustainability which relate to new housing development and will be considered further within this statement including water use and the environmental impacts of materials, construction, and household waste.

3. Climate Change Resilience

- 3.1. Dwellings constructed today may be operating in a substantially different climate over the coming decades, and therefore should be designed to ensure that they are resilient to future climate change impacts such as increases in temperature, rainfall, wind and sea level. Climate resilience is important to home owners against a backdrop of increasingly extraordinary weather events.

Cooling hierarchy

- 3.2. In common with sustainable heating strategies, it is possible to apply a sustainable 'cooling hierarchy' which sets out the priorities to ensure overheating risk is minimised:
- Minimise internal heat gain
 - Manage heat through internal thermal mass and design of spaces
 - Passive ventilation strategies
 - Mechanical ventilation systems
 - Active cooling systems
- 3.3. In line with the above hierarchy Passive design measures will be prioritised to enhance resilience to climate change impacts throughout the lifetime of the development.

Addressing overheating risk

- 3.4. Within the development layout, orientation and massing has been considered to maximise useful passive solar gain. Glazing will be specified with a solar transmittance value (g-value) to strike the balance between useful solar gain in the winter and unwanted solar gain in the summer.
- 3.5. Dwellings will be able to benefit from cross-ventilation **wherever possible** to effectively purge warm air from the properties during periods of hot weather. Window opening areas will be considered and guided by the Part O assessment, with increased opening areas being designed in as required.
- 3.6. Heat build up in the surroundings will be reduced by a layout which incorporates significant green space and sustainable urban drainage features such as attenuation areas and allotments around the site and in rear gardens, increasing evaporative cooling and reducing the potential for heat build-up in enclosed and low albedo external areas.

Approved Document O

- 3.7. In order to more robustly address overheating risk, the Government introduced a new Approved Document, 'Part O', into the Building Regulations.
- 3.8. This document requires a more in-depth assessment of the risk of overheating, taking into account site location, dwelling orientation, glazing proportions and openable window areas for natural ventilation.
- 3.9. This assessment will be undertaken at the start of detailed design and any mitigation measures that may be required will be built in.

4. Energy Consumption and CO₂ Emissions

- 4.1. As one of the key areas of ongoing impact of any development, the energy demand of the dwellings to be constructed is a key consideration in the overall sustainability strategy.
- 4.2. As set out within the policy review section of this statement, it is considered that Building Regulations form the minimum requirement for new dwellings in terms of energy performance.
- 4.3. As shown in Table 1, the CO₂ standards contained within Part L were increased in 2010 and 2013, reducing the TER by approximately 25% and a further 6% (9% for non-residential) respectively. Part L 2021 became mandatory from June 2023, constituting a much larger step change of a 31% reduction in emissions.

Table 1. CO₂ Emissions improvements from successive Part L editions

Building Regulations	CO ₂ emissions improvements preceding regulations
L1A 2006	-
L1A 2010	25%
L1A 2013	6%
L1 2021	31%

Energy Reduction Strategy – Fabric First

- 4.4. It is proposed that the energy demand reduction strategy for the development incorporates further improvements beyond a Part L compliant specification and initially concentrates finance and efforts on reducing energy demand as the first stage of the Energy Hierarchy.

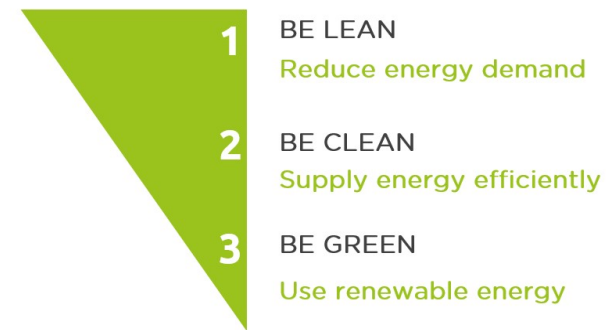


Figure 2. The Energy Hierarchy

Be Lean – reduce energy demand

- 4.5. The design of a development - from the masterplan to individual building design - will assist in reducing energy demand in a variety of ways, with a focus on minimising heating, cooling and lighting loads. Key considerations include:
- Building orientation – maximise passive solar gain and daylight
 - Building placement – control overshading and wind sheltering
 - Landscaping – control daylight, glare and mitigate heat island effects
 - Building design – minimise energy demand through fabric specification

Be Clean – supply energy efficiently

4.6. The design and specification of building services to utilise energy efficiently is the next stage of the hierarchy, taking into account:

- High efficiency heating and cooling systems
- Ventilation systems (with heat recovery where applicable)
- Low energy lighting
- High efficiency appliances and ancillary equipment

Be Green – use low carbon / renewable energy

4.7. Low carbon and renewable energy systems form the final stage of the energy hierarchy and can be used to directly supply energy to buildings, or offset carbon emissions arising from unavoidable demand. This may be in the form of:

- Low carbon fuel sources – e.g. biomass
- Heat pump technologies
- Building scale renewable energy systems
- Small-scale heat networks
- Development-scale heat networks

4.8. As this hierarchy demonstrates, designing out energy use is weighted more highly than the generation of low-carbon or renewable energy to offset unnecessary demand. Applied to the development, this approach is referred to as 'fabric first' and concentrates finance and efforts on improving U-values, reducing thermal bridging, improving airtightness, and installing energy efficient ventilation and heating services.

4.9. This approach has been widely supported by industry and government for some time, particularly in the residential sector, with the Zero Carbon Hub¹ and the Energy Savings Trust² having both stressed the importance of prioritising energy demand as a key factor in delivering resilient, low energy buildings.

4.10. The benefits to prospective homeowners of following the Fabric First approach are summarised in Table 2.

Table 2. Benefits of the Fabric First approach

	Fabric energy efficiency measures	Bolt-on renewable energy technologies
Energy/CO ₂ /fuel bill savings applied to all dwellings	✓	✗
Savings built-in for life of dwelling	✓	✗
Highly cost-effective	✓	✗
Increases thermal comfort	✓	✗
Potential to promote energy conservation	✓	✓
Minimal ongoing maintenance / replacement costs	✓	✗
Significant disruption to retrofit post occupation	✓	✗

Building Regulations Standards – Fabric Energy Efficiency

4.11. In addition to the CO₂ reduction targets, the importance of energy demand reduction was further supported by the introduction of a minimum fabric standard into Part L1A 2013, based on energy use for heating and cooling a dwelling. This is referred to as the 'Target Fabric Energy Efficiency' (TFEE) and expressed in kWh/m²/year.

4.12. This standard enables the decoupling of energy use from CO₂ emissions and serves as an acknowledgement of the importance of reducing demand, rather than simply offsetting CO₂ emissions through low carbon or renewable energy technologies.

4.13. The TFEE is calculated based on the specific dwelling being assessed with reference values for the fabric elements contained within Approved Document L1. These reference values are described as 'statutory guidance' as opposed to mandatory requirements, allowing full flexibility in design approach and balances between different aspects of dwelling energy performance to be struck so that the ultimate goal of achieving the TFEE is met.

¹ Zero Carbon Hub, Zero Carbon Strategies for tomorrow's new homes, Feb 2013

² Energy Savings Trust, Fabric first: Focus on fabric and services improvements to increase energy performance in new homes, 2010

Proposed Fabric Specification

- 4.14. To ensure that the energy demand of the development is reduced, the dwellings should be designed to minimise heat loss through the fabric wherever possible. Table 3 details the proposed fabric specification of the major building elements, with the first column in this table setting out the Part L1 limiting fabric parameters in order to demonstrate the improvements delivered.

Table 3. Proposed construction specification – main elements

	Part L1 Limiting Fabric Parameters	Proposed Specification
External wall – u-value	0.26 W/m ² K	0.18 - 0.24 W/m ² K
Party wall – u-value	0.20 W/m ² K	0.00 W/m ² K
Plane roof – u-value	0.16 W/m ² K	0.09 W/m ² K
Ground floor – u-value	0.18 W/m ² K	≤ 0.12 W/m ² K
Windows – u-value	1.6 W/m ² K	1.3 W/m ² K
Doors – u-value	1.6 W/m ² K	≤ 1.6 W/m ² K
Air Permeability	8.00 m ³ /h.m ² at 50 Pa	<4.50 m ³ /h.m ² at 50 Pa

Thermal bridging

- 4.15. The significance of thermal bridging as a potentially major source of fabric heat losses is increasingly understood. Improving the U-values for the main building fabric without accurately addressing the thermal bridging will not achieve the desired energy and CO₂ reduction targets.
- 4.16. The specification will seek to minimise unnecessary bridging of the insulation layers, with avoidable heat loss therefore being reduced wherever possible. Accurate calculation of these heat losses forms an integral part of the SAP calculations undertaken to establish energy demand of the dwellings, and as such thermal modelling will be undertaken to assess the performance of all main building junctions.

Air leakage

- 4.17. After conductive heat losses through building elements are reduced, convective losses through draughts are the next major source of energy wastage. The proposal adopts an airtightness standard of <4.50 m³/h.m² at 50Pa, with pressure testing of all dwellings to be undertaken on completion to confirm that the design figure has been met.

Energy efficient heating and lighting

- 4.18. Heat generation and distribution systems will be designed to give the occupants a high level of control over their use, encouraging and allowing energy-efficient behaviour. Primary pipework should be fully insulated, and time and temperature zoning controls installed in all dwellings.
- 4.19. Internal lighting should be low energy wherever possible, and areas of infrequent use may be fitted with occupancy sensors. External security and space lighting should be low energy and fitted with PIR and daylight sensors where appropriate.

5. Low Carbon and Renewable Energy Systems

- 5.1. A range of technologies have been assessed for potential incorporation into the scheme in accordance with Regulation 25A of the Building Regulations (2013) and with the intent of delivering compliance with the carbon reduction targets contained within Part L 2021.

Combined Heat and Power (CHP) and District Energy Networks

- 5.2. A CHP unit is capable of generating heat and electricity from a single fuel source. The electricity generated by the CHP unit is used to displace electricity that would otherwise be supplied from the national grid, with the heat generated as effectively a by-product utilised for space and water heating.
- 5.3. The economic and technical viability of a CHP system is largely reliant on a consistent demand for heat throughout the day to ensure that it operates for over 5000 hours per year. Heat demand from mainly residential schemes is not conducive to efficient system operation, with a defined heating season and intermittent daily profile, with peaks in the morning and the evening. For this reason, the use of a CHP system is considered unfeasible for this development.
- 5.4. There are currently no heat networks which extend near the proposed development. High network heat losses associated with distribution to individual houses, as opposed to large high-rise apartment blocks and commercial developments mean that a new heat network to serve the area is not considered viable or an environmentally preferred option. Due to these reasons, the provision for future connection to a district heating system is also not proposed.

Wind Power

- 5.5. Locating wind turbines adjacent to areas with buildings presents several potential obstacles to deployment. These include the area of land onsite required for effective operation, installation and maintenance access, environmental impact from noise and vibration, visual impact on landscape amenity and potential turbulence caused by adjacent obstacles, including the significant amount of woodland on and around the development.
- 5.6. A preliminary examination of the BERR wind speed database indicates that average wind speeds at 10m above ground level are around 5.3 m/s³. Wind turbines at this site are therefore unlikely to generate sufficient quantities of electrical energy to be cost effective⁴. For these reasons wind power is not considered feasible.

Building Scale Systems

- 5.7. The remaining renewable or low carbon energy systems considered potentially feasible are at a building scale. These are as follows;
- Individual biomass heating
 - Solar thermal
 - Solar photo-voltaic (PV)
 - Air Source Heat Pumps (ASHPs)
 - Ground Source Heat Pump (GSHPs)
 - Hot water heat pumps
- 5.8. The advantages and disadvantages of these technologies are evaluated in Tables 4-9.

³ NOABL Wind Map (<http://www.rensmart.com/Weather/BERR>)

⁴ CIBSE TM38:2006. Renewable energy sources for buildings.

Table 4. Individual Biomass Heating feasibility appraisal

Potential Advantages	Risks & Disadvantages
• Potential to significantly reduce CO₂ emissions as the majority of space and water heating will be supplied by a renewable fuel • Decreased dependence on fossil fuel supply	• A local fuel supply is required to avoid increased transport emissions • Fuel delivery, management and security of supply are critical • Space is required to store fuel, a thermal store and plant • A maintenance regime would be required even though modern systems are relatively low maintenance • Building users or a management company must be able to ensure fuel is supplied to the boiler as required. • Local environmental impacts potentially include increased NO_x and particulate emissions
Conclusions	
Biomass heating is considered technically feasible in large dwellings provided sufficient space can be accommodated for fuel supply, delivery and management.	

Table 5. Solar Thermal systems feasibility appraisal

Potential Advantages	Risks & Disadvantages
• Mature and reliable technology offsetting the fuel required for heating water (typically gas) • Solar thermal systems require relatively low maintenance • Typically, -50% of hot water demand in dwellings can be met annually	• Installation is restricted to favourable orientations on an individual building basis • The benefit of installation is limited to the water heating demand of the building • Safe access must be considered for maintenance and service checks • Buildings need to be able to accommodate a large solar hot water cylinder • Distribution losses can be high if long runs of hot water pipes are required • Visual impact may be a concern in special landscape designations (e.g. AONB)
Conclusions	
Solar thermal systems are considered technically feasible on all buildings with suitable roof orientations.	

Table 6. Solar Photovoltaic systems feasibility appraisal

Potential Advantages	Risks & Disadvantages
• The technology offsets grid supplied electricity used for lighting, pumps and fans, appliances and equipment • Mature and well proven technology that is relatively easily integrated into building fabric • Adaptable to future system expansion • Solar resource is not limited by energy loads of the dwelling as any excess generation can be transferred to the national grid • PV systems generally require very little maintenance • Service and maintenance requirement minimal, and 2-3 storey buildings should not require significant additional safety measures (mansafe systems etc) for roof access • Future residents may be able to benefit from Smart Export Guarantee payments	• Poor design and installation can lead to lower than expected yields (e.g. from shaded locations) • Installation is restricted to favourable orientations • Safe access must be considered for maintenance and service checks • Visual impact may be a concern in special landscape designations (e.g. AONB) or conservation areas • Reflected light may be a concern in some locations
Conclusions	
PV panels are considered technically feasible for all buildings with suitable roof orientations. The relatively low cost and limited additional impacts mean that PV is considered a feasible option for this development.	

Table 7. Air Source Heat Pump systems feasibility appraisal

Potential Advantages	Risks & Disadvantages
• Heat pumps are relatively mature technology providing heat using the reverse vapor compression refrigeration cycle • Heat pumps are a highly efficient way of providing heat using electricity, with manufacturers reporting efficiencies from 250% • Can be of increased benefit where cooling is also required, therefore particularly relevant to commercial buildings • Very low carbon heating source based on Part L 2021 carbon factor of 0.136kgCO₂/kWh	• Air source heat pumps are powered by electricity, potentially increasing fuel bills for residents compared with gas heating systems • It is critical that heat pump systems are designed and installed correctly to ensure efficient operation can be achieved. Users must be educated in how heat pump systems should be operated for optimal efficiency • Air source heat pump plant should be integrated into the building design to mitigate concerns regarding the visual impact of bolt-on technology • Noise in operation may be an issue particularly when operating at high output
Conclusions	
Air source heat pumps are technically feasible for the buildings in this scheme, delivering very low carbon heating, and are therefore considered a preferred technology.	

Table 8. Ground Source Heat Pump systems feasibility appraisal

Potential Advantages	Risks & Disadvantages
- Heat pumps are relatively mature technology providing heat using the reverse vapor compression refrigeration cycle - Heat pumps are a highly efficient way of providing heat using electricity, with manufacturers reporting efficiencies from 320% - Can be of increased benefit where cooling is also required, therefore particularly relevant to commercial buildings - Very low carbon heating source based on Part L 2021 carbon factor of 0.136kgCO₂/kWh	- Low temperature heating circuits (underfloor heating) would be required to maximise the efficiency of heat pumps - A hot water cylinder would also be required for both space and water heating - Ground source heat pumps are powered by electricity, potentially increasing fuel bills for residents compared with gas heating systems - It is critical that heat pump systems are designed and installed correctly to ensure efficient operation can be achieved - Ground source heat pumps either require significant land to incorporate a horizontal looped system or significant expense to drill a bore hole for a vertical looped system
Conclusions	
Ground source heat pumps are considered technically feasible for buildings in this scheme. However, the cost and difficulty associated with vertical boreholes at this site means that they are not considered a preferred low carbon technology at this stage.	

Table 9. Hot Water Heat Pump Feasibility Appraisal

Potential Advantages	Risks & Disadvantages
- Hot water demand met through grid electricity with low effective emissions factor - Heat pump element increases efficiency over immersion heater, circa 200%+ - No external heat exchanger requirement, only intake and exhaust duct runs - Low noise levels - Compact solution in same footprint as hot water cylinder	- Maximum length of duct runs means that cylinder positioning needs to be considered within the dwelling - Less appropriate for larger dwellings with higher hot water demands due to potentially slower recharge rate - Some noise, however likely to be easily suppressed with appropriate cylinder location - Space heating must be met through separate system
Conclusions	
Hot water heat pumps are considered feasible for dwellings with relatively low number of wet rooms and appropriate cylinder location to allow for duct runs to building façade.	

Summary

5.9. Following this feasibility assessment, it is considered that there are a range of technically feasible low carbon or renewable energy systems, however a number of these may be discounted on the grounds of increased running costs for residents or other adverse effects:

- Biomass heating systems would require significant storage space for fuel as well as regular deliveries at different times to all dwellings. Local NO_x and particulate pollution is also an increasing concern, and therefore they are not appropriate for this development.
- Ground source heat pump systems may be technically feasible; however the ground conditions are unknown, and the capital cost is likely to be prohibitive.

5.10. There are two main technologies with significant potential for the development:

- Solar photovoltaics
- Air source heat pumps

5.11. It is currently proposed that all dwellings will incorporate air source heat pumps (ASHP) to deliver low carbon heat across the development. This will ensure that all units are additionally ready for the introduction of the future homes standard.

7. Resource Efficiency and Materials

- 7.1. This section sets out details of additional resource efficiency and sustainable design principles to be applied at the development.

Materials

- 7.2. The impacts of construction materials range from the depletion of natural resources to the greenhouse gas emissions and water use associated with their manufacture and installation.
- 7.3. Within the development choices will be made to reduce the consumption of primary resources and using materials with fewer negative impacts on the environment, including but not limited to the following;
- Use fewer resources and less energy through designing buildings more efficiently.
 - Specify and select materials and products that strike a responsible balance between social, economic and environmental factors.
 - Incorporate recycled content, use resource-efficient products and give due consideration to end-of-life uses.
 - Influence, specify and source increasing amounts of materials which can be reused and consider future deconstruction and recovery.
 - All insulating materials will have a Global Warming Potential (GWP) of < 5 in manufacture and installation.
 - All materials used in construction will be responsibly sourced, with certification obtained wherever possible. Materials with a low environmental impact as per the BRE Green Guide will be preferred.

Waste

- 7.4. Sending waste to landfill has various environmental impacts, such as the release of local pollution, ecological degradation and methane emissions, in addition to exacerbating resource depletion. Waste in housing comes from two main streams; construction waste and domestic waste during occupation.

Household Waste

- 7.5. In this respect, regard has been given to the policy advice contained in the NPPF together with the Council's current strategy in terms of waste and recycling to ensure that the new dwellings are provided with adequate storage facilities for both waste and recyclable materials.

- 7.6. Dedicated bin storage space will be provided on plot to accommodate the relevant collection boxes.

- 7.7. Future occupiers of the dwellings will be provided with an information pack detailing the Council's current collection arrangements for waste and recycling and advising of the nearest recycling centres to the Application site.

Construction Waste

- 7.8. The development will additionally be designed to effectively and appropriately monitor and manage construction site waste. Target benchmarks for resource efficiency will be set in accordance with best practice – e.g. m³ of waste per 100m² / tonnes waste per m².
- 7.9. Wherever possible materials will be diverted from landfill through re-use on site, reclamation for re-use, returned to the supplier where a 'take-back' scheme is in place or recovered and recycled using an approved waste management contractor. A target to divert 85% by weight/volume of non-hazardous construction waste will be applied.

8. Water Efficiency

- 8.1. The UK Climate Change Risk Assessment 2017 identified risks of shortages in water supply as a future climate change impact. Therefore, the efficient use of water is an important factor when considering future resilience to climate change.
- 8.2. As well as aiming to minimise water usage through the materials used, water consumption of the end user will be considered in line with current national policy. Building Regulations 2013 Part G require water efficiency measures for all new dwellings:

Water Efficiency

G2. Reasonable provision must be made by the installation of fittings and fixed appliances that use water efficiently for the prevention of undue consumption of water.

Water Efficiency of New Dwellings

36. (1) The potential consumption of wholesome water by persons occupying a new dwelling must not exceed the requirement in paragraph (2)

(2) The requirement referred to in paragraph (1) is either –

(a) 125 litres per person per day; or

(b) in a case to which paragraph (3) applies, the optional requirement of 110 litres per person per day,

1.1. As measured in either case in accordance with a methodology approved by the Secretary of State.

- 8.3. Water efficiency measures are met under Part G if: The estimated consumption of wholesome water resulting from the design of cold and hot water systems (calculated in accordance with the methodology set out in Appendix A) is not greater than the standard set by the Secretary of State of 125/litres/person/day, or the optional standard of 110 litres/person/day.
- 8.4. In accordance with policies DP39 and DP42, water use will be limited to 110 litres/person/day.

- 8.5. Water efficiency measures including the use of efficient dual flush WCs, low flow showers and taps and appropriately sized baths will be installed with the aim to limit the use of water during the operation of the development to limit water use.

9. Conclusions

- 9.1. This Sustainability Statement has been prepared by AES Sustainability Consultants on behalf of Vistry Homes South East to detail the proposed approach to sustainable construction to be employed at the site at Imberhorne Farm, East Grinstead
- 9.2. The primary purpose of this statement is to address Policies DP39 and Principle DG37 of the Mid Sussex district plan and Mid Sussex design guide through the demonstration that the combination of a fabric first approach and low carbon renewable technology will achieve an overall reduction in site-wide CO₂ emissions in excess of a Part L 2021 compliant baseline.
- 9.3. The statement sets out a fabric first approach to sustainable construction, demonstrating that improvements in insulation specification, a reduction in thermal bridging, unwanted air leakage paths and further passive design measures will ensure that energy demand and consequent CO₂ emissions are minimised.
- 9.4. A range of potentially appropriate technologies have been assessed for feasibility in delivering a further reduction in CO₂ emissions, concluding that air source heat pumps are considered the appropriate technology for this site.
- 9.5. All homes will be delivered to meet the minimum requirements of Part L 2021.
- 9.6. The development will additionally consider the longer-term impacts of a changing climate, building in resilience through the construction specification and managing overheating risk through consideration of thermal mass and solar gain.
- 9.7. A range of additional sustainability measures have been given consideration including reduction of both construction and household waste.
- 9.8. Water usage will be reduced in accordance with the requirements of Building Regulations Part G, with flow restrictors and low use appliances being selected where applicable to ensure that the calculated daily water demand is below 110 litres/person/day in accordance with Policy DG39 of the Mid Sussex District Plan
- 9.9. Appropriate provision for internal waste and recycling storage will be provided to ensure that recycling can be split into the appropriate streams for collection.