Land East of Ansty,

Haywards Heath

Energy & Sustainability Statement

October 2023

CONTENTS

DOCUMENT CONTROL SHEET	
Report Reference	PP2153/LEA/ESS/202310-RT
Rev.	B
Issue Purpose	Final Draft
Client	Temple Group
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Date of Issue	20.10.2023

DISCLAIMER

1. EXECUTIVE SUMMARY

1.1 This Energy Statement has been prepared by NRG Consulting in support of an application for outline planning permission to be made to Mid Sussex District Council (MSDC).

This report should be read in conjunction with other supporting documents submitted with the application, including the Planning Statement and the Design and Access Statement which explains the Proposed Development in more detail and relates it to the surrounding context and planning policy framework for the Site.

The proposed description of development is the:

Creation of a new Garden Community and separate Country Park, comprising of the erection of up to 1,450 homes (including 30% affordable), up to 70 residential care (C2 units), up to a two form entry primary school, a new Special Educational Needs and Disabilities (SEND) school, sports facilities, allotments, retail, community and employment uses, together with ancillary and associated development including new and enhanced pedestrian/cycle routes, open spaces, and landscaping.

1.2 The intention of this document is to give an overview to the energy & sustainability considerations for the proposed development, both in the context of existing national and local planning policy as well as current and emerging Building Regulations requirements and Government policy and current aspirations for achieving "Net-Zero".

1.3 The scope of the outline application is:

Element	Amount	Unit
Site access, spine & secondary street	6.9	ha
Existing woodland	19.7	ha
Primary School	2.1	ha
SEND School	2.0	ha
Local centre	1.1	ha
Total residential area	34.7	ha
Retirement living/care home	**90**	**ha**
Dwellings in local centre	**55**	**no.**
Dwellings in residential only areas	**1,305**	**no.**
Average net density	**40.5**	**ha**
Total no. dwellings	**1,450**	**dph**
Population	3,625	no.
Open space requirement	9.4	ha
Open space provision within the development site	26.6	ha
Buffers within development site	6.5	ha
SuDS within development site	0.8	ha
Country Park	87	ha
Total open space provision	**120.9**	**ha**
Gross Density (excludes Country Park)	**21.12**	**dph**

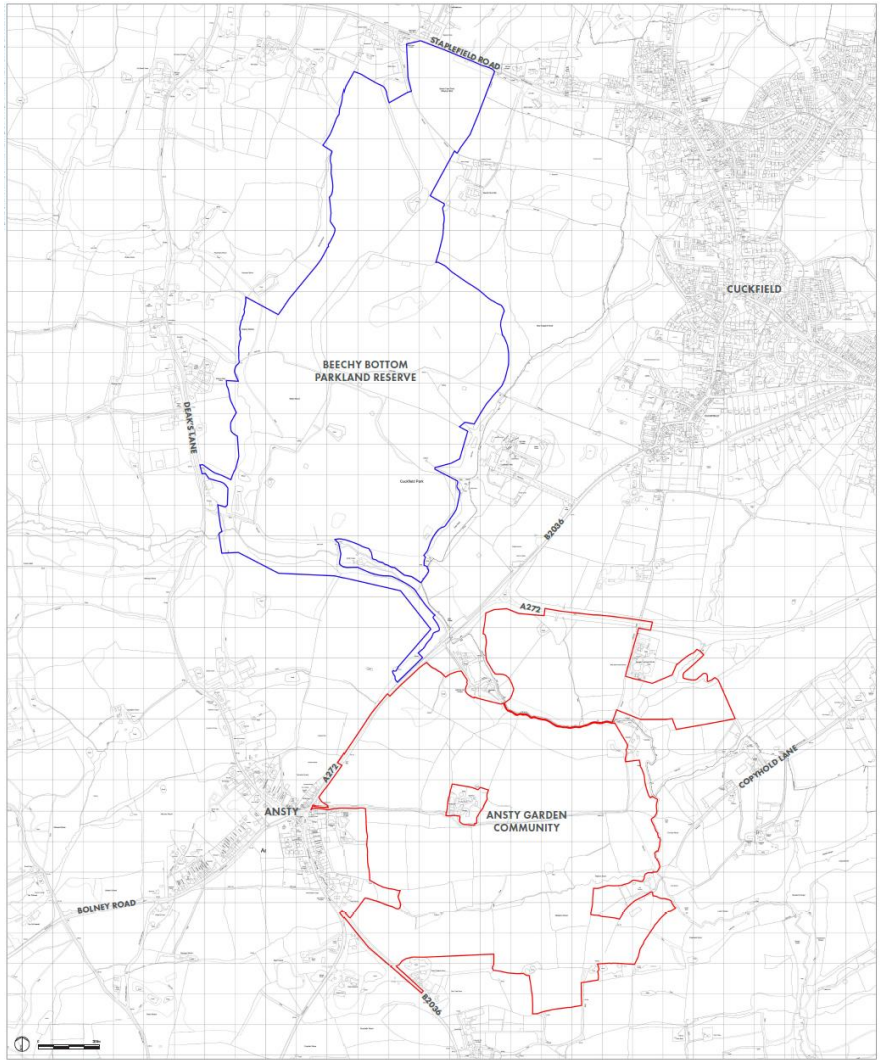
1.4 Due to this being an outline application, it has not been possible to complete energy modelling for the proposed dwellings and buildings. However, figures used within this document are based on both current best-practice guidance and an aggregate of other similar schemes NRG Consulting have assessed within the last 12 months. As a practice, we undertake assessments on thousands of dwellings and hundreds of buildings yearly and as such can be considered a robust baseline for the potential carbon emissions of the proposed development.

1.5 This document illustrates a commitment to a reduction in CO_2 emissions of >50% over the baseline of Part L 2021 of the Building Regulations via:

- Incorporating passive design strategies to reduce energy demand for the proposed dwellings and buildings. This includes focusing on:
  - Thermal Mass
  - Façade design
  - Thermal Bridging
  - Air Permeability
- Ensuring energy efficient measures are maximised via striving for compliance with the Future Homes Standard in terms of:
  - High levels of insulation to meet Future Homes U-Value targets.
  - Review of technologies such as Waste-Water Heat Recovery and any new products being added to the SAP database.
  - LED lighting with a high lm/W efficacy.
  - Appropriate ventilation for environmental considerations and Part F compliance.
- The provision of renewable energy throughout the scheme through a proposed mix of:
  - Air Source Heat Pumps
  - Solar Hot Water
  - PV Panels
  - Ground Source Heat Pumps

1.6 The development is proposing to incorporate sustainable measures within all aspects of the design and consultants have incorporated these wherever possible in their respective disciplines. While this document contains substantial details of sustainability in both energy and in general, this report should be also be read in conjunction with the following reports as well as the Design & Access Statement and Planning Statement for the full suite of measures:

- Flood Risk Assessment,
- Drainage Strategy,
- ES Volume 2, Chapter 7: Traffic and Transport,
- ES Volume 2, Chapter 8: Air Quality,
- ES Volume 2, Chapter 11: Ecology and Biodiversity.



Proposed Site Boundary including the development site and a proposed country park.

2. POLICY FRAMEWORK

2.1 The proposed development falls within the Government's **"major"** category of planning applications.

NATIONAL POLICY – NPPF (SEPTEMBER 2023)

The delivery of sustainable development is at the foundation of the NPPF, which defines it as "meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Relevant sections for energy and sustainability are:

Achieving Sustainable Development *(Paragraphs 7 to 14):*

The purpose of the planning system is to contribute to the achievement of sustainable development. This includes three overarching objectives:

An economic objective: To help build a strong, responsive, and competitive economy.

A social objective: To support strong, vibrant, and healthy communities.

An environmental objective: To protect and enhance our natural, built, and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

Presumption in Favour of Sustainable Development *(Paragraph 11):*

Plans and decisions should apply a presumption in favour of sustainable development. This includes promoting a sustainable pattern of development that seeks to meet the development needs of their area; align growth and infrastructure; improve the environment; mitigate climate change (including by making effective use of land in urban areas) and adapt to its effects.

LOCAL POLICIES

2.2 The Development Plan comprises:

- The Mid Sussex District Plan 2014-2031 (2018);
- The Mid Sussex Site Allocations DPD 'the Sites DPD' (2022);
- Mid Sussex Small Scale Housing Allocations DPD (2008)
- 'Saved' policies of the Mid Sussex Local Plan (2004); and
- The Haywards Heath Neighbourhood Plan 2014-2031 (2016).
- Local Plan Policies Map.

Material considerations include:

- National Planning Policy Framework (NPPF) (2023);
- Planning Practice Guidance (PPG);
- Adopted Mid Sussex Supplementary Planning Guidance / Documents;
- Any relevant industry guidance.

The Regulation 18 Draft Local Plan is currently under consultation, however as it is at such early stages, this does not carry any weight when assessing the proposals.

The following Planning Policies from the local authority are relevant to this report:

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;**
- **Explore opportunities for efficient energy supply through the use of communal heating networks where viable and feasible;**
- **Use renewable sources of energy;**
- **Maximise efficient use of resources, including minimising waste and maximising recycling/ re-use of materials through both construction and occupation;**
- **Limit water use to 110 litres/person/day in accordance with Policy DP42: Water Infrastructure and the Water Environment;**
- **Demonstrate how the risks associated with future climate change have been planned for as part of the layout of the scheme and design of its buildings to ensure its longer term resilience**

DP40: Renewable Energy Schemes

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; Capacity of Mid Sussex District to Accommodate Development Study; Mid Sussex Landscape Capacity Study; Mid Sussex Sustainable Energy Study; West Sussex Sustainable Energy Study.

Proposals for new renewable and low carbon energy projects (other than wind energy development – see below), including community-led schemes, will be permitted provided that any adverse local impacts can be made acceptable, with particular regard to:

- **Landscape and visual impacts, including cumulative impacts, such as on the setting of the South Downs National Park and High Weald Area of Outstanding Natural Beauty, and the appearance of existing buildings;**
- **Ecology and biodiversity, including protected species, and designated and non-designated wildlife sites;**
- **Residential amenity including visual intrusion, air, dust, noise, odour, traffic generation, recreation and access.**

Assessment of impacts will need to be based on the best available evidence, including landscape capacity studies.

Proposals for wind energy development involving one or more wind turbines will only be granted if:

- **the development site is in an area identified as suitable for wind energy development in a Neighbourhood Plan; and**

BUILDING REGULATIONS (PART L 2021) AND CURRENT POLICY DRIVERS

2.3 On 24th July 2018 the Department for Business Energy & Industrial Strategy (BEIS) published their update to SAP 9.92 (Part L 2013), called SAP 10.

On the June 15th 2022, Part L 2021 of the Building Regulations came into force. As per the requirements, all new homes must produce 31% less CO_2 emissions than that of Part L 2013 in-order to achieve Building Regulation compliance.

2.4 The major change in the regulations is the change in carbon factor of electricity to represent the decarbonisation of the National Grid and the push towards net-zero carbon developments.

2.5 At the time of writing, the current best-practice guidelines and policy drivers are the promotion of electricity as a heating fuel and the reduction in use of Gas as a heating fuel for the following reasons:

- It is the intention through the promotion of renewable energy and *clean* technologies over that of fossil fuel to further decarbonise the National Grid thus in the medium term, the on-site carbon emissions associated with the proposed development would decrease
- Gas produces NOx emissions that can have an impact on Air Quality at a local level.
- Adopted Mid Sussex Supplementary Planning Guidance / Documents;
- Any relevant industry guidance.

Fuel	SAP 2012 CO_2 ($kgCO_2/kWh$)	SAP 10 CO_2 ($kgCO_2/kWh$)	Part L 2021 CO_2 ($kgCO_2/kWh$)	Percentage Reduction
Main Gas	0.216	0.210	0.210	2.75%
Electricity	0.519	0.233	0.136	73.8%

Table: *Change in Carbon Factors from Part L 2013 to Part L 2021*

THE FUTURE HOMES STANDARD

2.6 In October 2019, the Ministry of Housing, Communities and Local Government (MHCLG) then issued consultation on changes to Part L of the Building Regulations. Dubbed *The Future Homes Standard*, it is an aspiration to ensure all new homes will have low carbon heating and "world-leading levels of energy efficiency" by 2025 and is intended to be the primary driver in achieving the Governments desire to reduce carbon emissions in the creation of new-build housing stock.

2.7 The results of this consultation were:

a) From 2025, the Future Buildings Standard will deliver new non-domestic buildings that are zero-carbon ready. No further energy efficiency retrofit work will be necessary to enable these buildings to become zero-carbon as the electricity grid continues to decarbonise.

b) New-build dwellings from 2025 will be 75-80% lower in CO_2 than dwellings built to Part L 2013.

2.8 In 2023 there is supposed to be a Technical Standard Consultation for the Future Homes Standard but as of July 2023, this has not yet commenced.

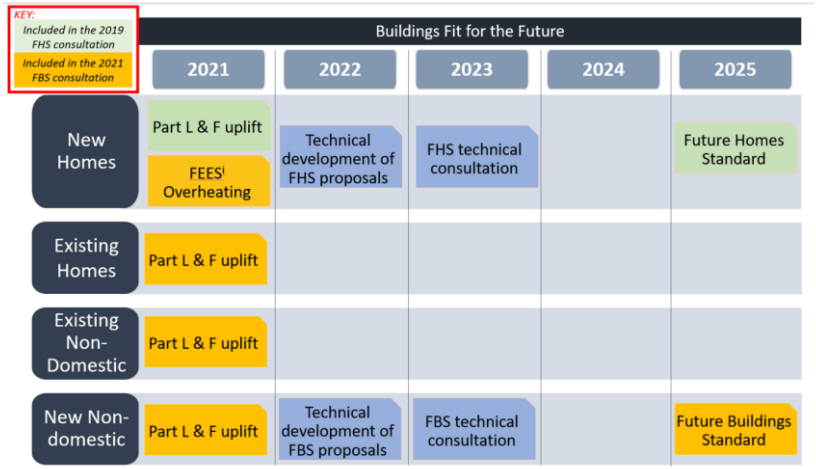


Figure 1: Contents of the Future Homes Standard and Future Buildings Standard consultations.
i. The Fabric Energy Efficiency Standard (FEES) was reconsulted on in the 2021 FBS consultation, alongside some building services standards and guidance on the calibration of devices that carry out airtightness testing.

3. CARBON EMISSIONS - RESIDENTIAL

3.1 The estimations for the predicted energy demand and regulated CO_2 emissions for the site proposed in this section and Section 4 (Carbon Emissions – Non-Residential) have been undertaken by a licensed NDEA and OCDEA accredited assessor.

3.2 There are **up to 1,450** dwellings proposed in the outline application. This excludes the Care Home as this is classified as non-residential in the eyes of Building Regulations for energy purposes. These dwellings will be split between houses and apartments and will be a mix of tenures – some for private sale and some that will be affordable dwellings. At this stage, while specifications will differ between houses and apartments, there will no distinguishing in this report for tenure.

3.3 Baseline CO_2 emissions are covered by Part L 2021 of the Building Regulations and is calculated via what is known as a SAP Assessment. The baseline target is expressed as the Target Emissions Rate (TER). The proposed actual emissions of the proposed are expressed as the Dwelling Emission Rate (DER).

These use the unit of measurement of kilograms of CO_2 per square-metre per annum ($kg/CO_2/m^2$) and this is the figure expressed within this report. To calculate the overall proposed emissions, these figures can be multiplied by the size of the dwellings and/or site and this figure is presented in tonnes/annum.

Part L of the Building Regulations covers regulated carbon emissions from:

- Heating
- Cooling
- Hot Water
- Lighting
- Auxiliary (Pumps and Fans)

All other energy uses within the home are classified as “Unregulated” emissions and are covered later on in this section.

3.4 As per Section 2, Part L 2021 came into force on the 15th June 2022 and requires new-dwellings to achieve a circa 31% decrease in CO_2 emissions compared to Part L 2013 in order to get Building Regulations compliance.

3.5 The specification for the Notional Dwelling (specification that creates the TER) is:

Element or system	Reference value for target setting
Opening areas (windows, roof windows, rooflights and doors)	Same as for actual dwelling not exceeding a total area of openings of 25% of total floor area[2]
External walls including semi-exposed walls	U = 0.18 W/(m²·K)
Party walls	U = 0
Floors	U = 0.13 W/(m²·K)
Roofs	U = 0.11 W/(m²·K)
Opaque door (less than 30% glazed area)	U = 1.0 W/(m²·K)
Semi-glazed door (30–60% glazed area)	U = 1.0 W/(m²·K)
Windows and glazed doors with greater than 60% glazed area	U = 1.2 W/(m²·K) Frame factor = 0.7
Roof windows	U = 1.2 W/(m²·K), when in vertical position (for correction due to angle, see specification in SAP 10 Appendix R)
Rooflights	U = 1.7 W/(m²·K), when in horizontal position (for correction due to angle, see specification in SAP 10 Appendix R)
Ventilation system	Natural ventilation with intermittent extract fans
Air permeability	5 m³/(h·m²) at 50 Pa
Main heating fuel (space and water)	Mains gas
Heating system	Boiler and radiators Central heating pump 2013 or later, in heated space Design flow temperature = 55 °C
Boiler	Efficiency, SEDBUK 2009 = 89.5%
Heating system controls	Boiler interlock, ErP Class V Either: – single storey dwelling in which the living area is greater than 70% of the total floor area: programmer and room thermostat – any other dwelling: time and temperature zone control, thermostatic radiator valves
Hot water system	Heated by boiler (regular or combi as above) Separate time control for space and water heating
Wastewater heat recovery (WWHR)	All showers connected to WWHR, including showers over baths Instantaneous WWHR with 36% recovery efficiency utilisation of 0.98
Hot water cylinder	If cylinder, declared loss factor = 0.85 × (0.2 + 0.051 $V^{2/3}$) kWh/day where V is the volume of the cylinder in litres
Lighting	Fixed lighting capacity (lm) = 185 × total floor area Efficacy of all fixed lighting = 80 lm/W
Air conditioning	None
Photovoltaic (PV) system	For houses: kWp = 40% of ground floor area, including unheated spaces / 6.5 For flats: kWp = 40% of dwelling floor area / (6.5 × number of storeys in block) System facing south-east or south-west

3.6 Passive Design

Before emissions are quantified, the design of the scheme should be developed to minimise heating demand from the outset. As a minimum, the passive design analysis should cover:

- Site location
- Site weather
- Microclimate
- Building layout
- Building orientation
- Building form
- Building fabric
- Thermal mass or other fabric thermal storage
- Building occupancy type
- Daylighting strategy
- Ventilation strategy
- Adaptation to climate change

Passive design measures will be utilised by the architect in the concept and development of the schemes design to lower the natural energy demand for the scheme include:

- Through good design and careful construction, air infiltration will be minimised and thus a low Air Permeability target has been sort.
- Optimising orientation and site layout to reduce energy demand.
- Provision of cross-ventilation.
- Maximising thermal mass where possible to reduce internal temperature variation.
- Thermal Bridging will be reviewed and designed to minimise heat transmission through the junctions and details. A full analysis will be done with any reserved matters application based upon the final proposed construction methodology for the scheme.

3.7 The push for Net Zero – Design Targets and ESG

The definition of a Net Zero building in operation has been developed through recent industry initiatives and research. The currently industry recognised definition of a Net Zero development has been developed by private and non-profit groups such as CIBSE and LETI and can differ slightly to that of Part L of the Building Regulations which defines Zero Carbon as a DER of 0 i.e., no regulated carbon emissions.

The targets for this, are generally agreed as:

- Space heating demand must be less than 15 kWh/m^2/yr.
- Total energy use (EUI) must be less than 35 kWh/m^2/yr.
- No use of fossil fuels on site.
- Renewable energy generation on-site should be maximised.
- A minimum EPC Rating of “B” with a target of “A”

The proposed development will seek to achieve these targets wherever possible.

Further to this, and at the stage of the appropriate Reserved Matters application, the scheme will also be compliant with any new legislation such as SAP 11 or any updated Government Policy at the time in relation to the target of Net Zero.

Future Homes Standard (SAP 11) Review - Fabric			
ELEMENT	CURRENT PROPOSED U-VALUES (W/m²K)	Part L 2021 Notional Dwelling (1)	Future Homes 2025 DRAFT SPEC (2)
Walls			
External Wall	**0.15 W/m²K**	0.18 W/m²K	0.15 W/m²K
Sheltered Wall	**0.15 W/m²K**	0.18 W/m²K	0.15 W/m²K
Party Walls	**0.0 W/m²K**	0.0 W/m²K	0.0 W/m²K
Floors			
Ground Floor	**0.1 W/m²K**	0.13 W/m²K	0.11 W/m²K
Roof			
Main Roof	**0.1 W/m²K**	0.11 W/m²K	0.11 W/m²K
Openings			
Windows	**1.3 W/m²K**	1.2 W/m²K	0.8 W/m²K
Air Permeability	**3 m³/(hm²) @50Pa**	5 m³/(hm²) @50Pa	5 m³/(hm²) @50Pa

Sources:

1. **Approved Document – Part L 1 2021 - LINK**
2. **Future Homes Consultation Document (2019) - Title (publishing.service.gov.uk)**

3.8 Active Design

The development will incorporate efficient building services to limit carbon emissions, including:

- A zero-NOx and high efficiency heating system
- High efficiency LED Lighting
- Two-zone heating control, allowing residents to effectively minimise heating use when in the same part of the dwelling.

The scheme will also investigate and implement demand-side response measures to energy management. This particularly focuses on the installation of smart meters in each residential unit. These devices provide real-time information on energy usage and enable residents to understand and control their consumption patterns. By offering detailed insights into when and where energy is used, households can adjust their behaviour, minimising peak energy demand. This helps to alleviate strain on the energy grid during peak times. Certain incentives are also currently being offered by energy providers to not use power in peak hours reducing energy bills.

ELEMENT	PROPOSED DETAILS
Ventilation	**Natural Ventilation**
Heating	**Air Source Heat Pumps (kW based non unit size)**
Heating Controls	**Time and Temperature Zone Control**
Heat Emitters	**Radiators**
Hot Water	**170ltr Hot Water Cylinder (1.4kWh/day loss)**
Lighting	**LED (100 lm/W)**
PV	**All Houses**

***Table**: Proposed sample Mechanical and Electrical Specification for Houses*

3.9 Lighting

In-line with bettering the minimum allowable figure within Part L 201, all residential light fittings should be Light Emitting Diodes (LEDs) with a luminous efficiency per circuit watt of at least 90 lumens/Watt.

Occupancy sensors and daylight dimming should be specified in communal areas where appropriate.

3.10 Overheating

This development will be Part O of the Building Regulations compliant and has been designed to avoid Overheating with the early stages of the cooling hierarchy prioritised and with the lack of communal heat distribution and the provision of openable windows being major factors in mitigating any potential risks.

A full assessment for Part O of the Building Regulations will be undertaken prior to commencement on-site and a Planning Report submitted with any Reserved Matters application but on the next page the GLA Hierarchy is examined with high-level targets for the outline scheme.

As part of any Reserved Matters application, a review into potential compliance with future DSY will be undertaken and this will cover elements such as:

- The provision of External and Internal Shading devices.
- The potential for infrastructure to be installed for items such as Ceiling Fans so they could be retrofitted in the future if needs be by the occupier / tenant.
- The provision of MVHR to the Flats that could be fitted with a Cooling Coil to allow comfort cooling in future hot summers.

Cooling Hierarchy	Measures Undertaken
Reduce the amount of heat entering the building through orientation, shading, high albedo materials, fenestration, insulation and the provision of green infrastructure.	High albedo materials will be prioritised where possible. Insulation levels in-line with Future Homes Standard notional U-Values have been proposed.
Minimise internal heat generation through energy efficient design:	As the dwellings will be heated by Individual Air Source Heat Pumps, there will be no communal heat infrastructure in the building requiring mitigation. LED lighting will reduce internal heat gains.
Manage the heat within the building through exposed internal thermal mass and high ceilings:	Level of exposed thermal mass has been maximised where possible, but it is likely that studwork will be used for internal partitions. The Floor to Ceiling Height complies with National Space Standards.
Provide Passive Ventilation	Openable Windows are proposed to all dwellings which will allow for night time purge ventilation if required. Cross-Ventilation to be provided wherever possible.
Provide Mechanical Ventilation	Mechanical Ventilation with Heat Recovery is not proposed to houses but will be installed to flats.

Unregulated Emissions

3.11 Unregulated energy use and their associated carbon emissions are often generated from systems or processes that are harder to quantify than regulated emissions which are from fixed systems.

3.12 Unregulated energy use is not counted within SAP for the purpose of Part L compliance. This is because the emissions from these items are variable and dependant on occupant behaviour and specification i.e. different levels of White Good provision and use and amount of small power equipment used.

For the proposed residential units, unregulated emissions consist of:

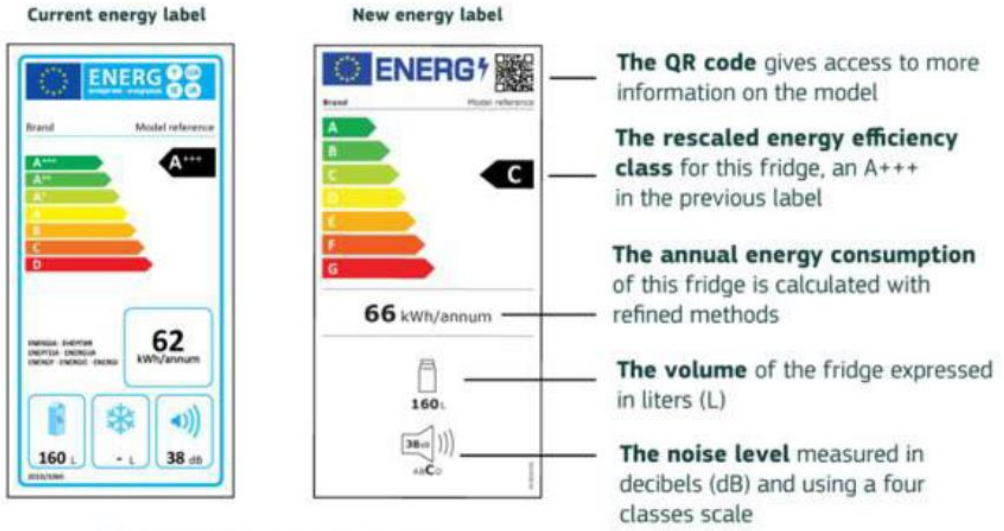
- Equipment (Small Power devices)
- Cooking
- External Lighting
- Appliances

3.13 Appliances and white goods can use significant amounts of energy in a building. This energy use becomes relatively more important in low energy buildings where passive design and low-flow fittings have reduced demand from space heating and hot water. High efficiency appliances are recommended to limit total energy consumption and minimise overheating risk from waste energy given off as heat.

In March 2021 the energy labelling ratings for appliances were recalibrated, and are now rated simply A-G. What may have been an A+++ before might now be a B or even a C rating.

Very few appliances will yet achieve an A rating currently, as the new system leaves room for industry to improve. Therefore, appliances should be sourced with the highest rating available (typically B or C currently).

Generally, free-standing appliances can achieve better performance than integrated devices and their use is encouraged wherever this is possible although their compliance with the overall design needs also to be considered.



The energy labels for a fridge without freezer

Overall Carbon Emissions

3.14 Based on current Part L 2021 calculations for dwellings between 50-150m² with a reduction factor for the Future Homes Scheme compliance applied, residential emissions are anticipated to be:

Use	Regulated Carbon Emissions (Kg CO_2/m^2/year)	Unregulated Carbon Emissions (Kg CO_2/m^2/year)
Residential (Houses)	3-5	6-7
Residential (Flats)	5-7	7-8

4. CARBON EMISSIONS – NON-DOMESTIC

4.1 For the non-domestic buildings, the proposed use is varied across the development. Non-domestic uses include a:

- Care Home
- Primary School
- SEN School
- Commercial (Class E)

Each of these different types of buildings will have different usage patterns and associated carbon emissions and this has been factored into this section. IES-VE software, which is used to produce our commercial energy calculations, has pre-loaded templates which, based on class usage, use National Calculation Method (NCM) data to set occupancy profiles and heat gains and occupants.

4.2 The baseline CO_2 emission target as set by Part L 2021 of the Building Regulations is expressed as the Target Emissions Rate (TER). The actual performance of the building is expressed as the Building Emission Rate (BER) An SBEM calculation assesses regulated energy demand. This comprises of:

- Heating and Cooling
- Hot Water
- Lighting
- Auxiliary Energy

All other energy uses within the buildings are classified as “Unregulated” emissions and are covered later on in this section.

ELEMENT	PART L1a LIMITING FABRIC PARAMETERS	PROPOSED U-VALUES (W/m²K)
Walls		
External Wall	*0.26 W/m²K*	**0.16 W/m²K**
Floors		
Ground Floor	*0.18 W/m²K*	**0.1 W/m²K**
Roof		
Sloping Roof	*0.16 W/m²K*	**0.13 W/m²K**
Flat Roof	*0.16 W/m²K*	**0.13 W/m²K**
Openings		
Front Doors	*1.6 W/m²K*	**1.0 W/m²K**
Windows	*1.6 W/m²K*	**1.3 W/m²K**
Rooflights	*1.6 W/m²K*	**1.3 W/m²K**
Air Permeability		
3 m³/(hm²) @50Pa		

***Table**: Proposed Fabric Specification*

Active Design

4.3 The current proposed mechanical and electrical strategy for the non-domestic buildings would be:

- Mechanical Ventilation with Heat Recovery (MVHR) throughout.
- LED Lighting throughout (>100lm/W)
- Modern Controls and Smart Metering
- Zero NOx Heating

ELEMENT	PROPOSED DETAILS
Ventilation	**MVHR**
Heating – System	**Air Source Heat Pumps – *SCOP of 3.3***
Heat Emitters	**Radiators**
Hot Water	**Via Hot Water Cylinder or Electric Instantaneous depending on demand**
Lighting	**> LED (100 lm/W)**
Lighting Controls	**Automatic On/Off and PIR controlled where feasible.**
Cooling	**None (where possible)**

***Table**: Proposed Mechanical and Electrical Specification*

Overheating

4.4 Overheating for non-domestic buildings does not currently come under the remit of Building Regulations in the UK. However, there are statutory requirements for schools under Building Bulletin 101. This will be met through the Building Regulations application and provision at the time of construction.

Unregulated Emissions

4.5 Unregulated energy use and their associated carbon emissions are often generated from systems or processes that are harder to quantify than regulated emissions which are from fixed systems.

4.6 Unregulated energy use is not counted within Part L for the purpose of compliance. This is because the emissions from these items are variable and dependant on occupant behaviour and specification.

This development this would be:

- Small Power Equipment
- External Lighting
- White Goods
- Lifts

4.7 Best practice guidance that helps calculate unregulated carbon emissions within non-domestic buildings are:

- The Carbon Trust's "Energy and carbon in schools"
- CIBSE TM54
- CIBSE Guide F: Energy Efficiency in Buildings
- National Calculation Methodology (NCM) Modelling Guide (for England)

Predicted Carbon Emissions

Use	Regulated Carbon Emissions (Kg CO_2/m^2/year)	Unregulated Carbon Emissions (Kg CO_2/m^2/year)
School	**7-9**	**13-15**
SEN School	**10-12**	**15-17**
Commercial (Class E)	**6-10**	**3-4**
Care Homes	**12-15**	**2-3**

4. COMMUNAL AND SITE WIDE HEAT NETWORKS

4.1 Policy DP39 of the Mid-Sussex Plan encourages the use of communal heat networks where feasible.

4.2 When reviewing the site and the proposed mix, density and phasing, the scheme, despite the size, does not suit itself to a single centralised Energy Centre or large scale on-site energy generation for the following reasons:

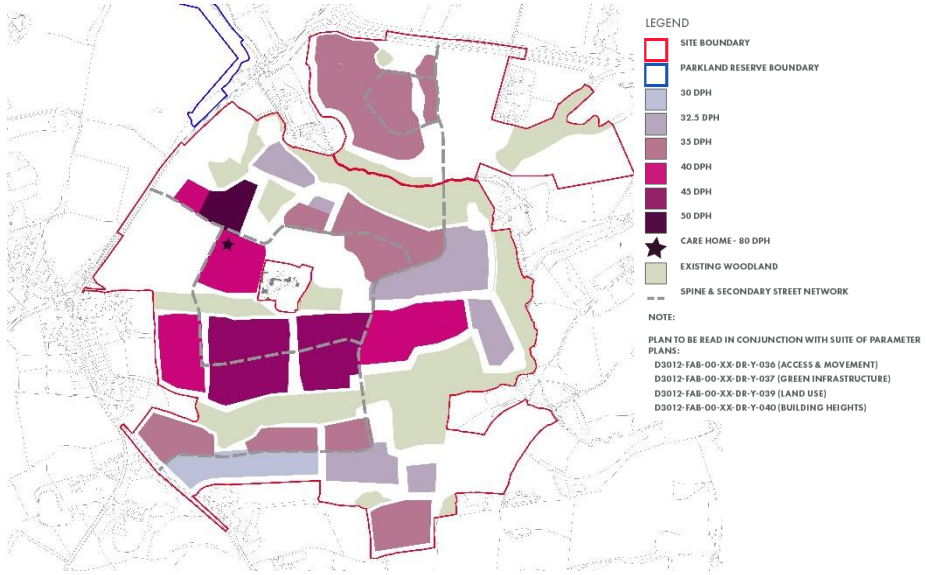
- The overall site is of very low energy density, with a large proportion of the site being houses. Due to this, there would be very few areas of the development that would benefit from such a system, both in running costs and carbon emission reduction compared to grid-connected measures.

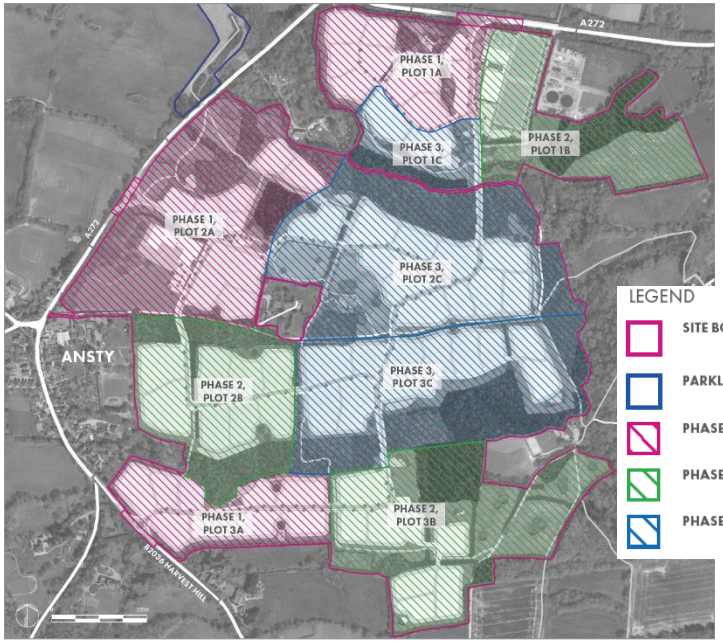
- Due to the size of the site, capital costs would be astronomical and due to the distribution losses and higher maintenance costs associated with a centralised system, running costs for the future residents would be higher.

- As the scheme is intended to be built-out as a phased development, the incorporation of an on-site network would have logistical and construction issues in terms of timings and “heat-on” ability, potentially impacting the delivery schedule.

4.3 Upon further review of the proposed heat density and phasing plan (both shown on the right) there could be limited potential for some form of network around the proposed “Local Centre” area, incorporating the Care Home, however the legal and logistical issues in connecting multiple different freeholders and leaseholders to the same system are quite high compared to the benefit of an electric based Energy Centre as on-site electric provision would be of the same, if not higher efficiency and not have associated pipework distribution losses.

4.4 Therefore, at this stage, it is proposed that each phase be reviewed at reserved matters stage but for the most carbon efficient scheme with the lowest fuel costs to the residents, that individual heating powered by renewable energy is proposed.





5. RENEWABLE TECHNOLOGIES

5.1 Renewable Energy is typically defined as:

"Energy derived from a source that is continually replenished, such as wind, wave, solar, hydroelectric and energy from plant material, but not fossil fuels or nuclear energy. Although not strictly renewable, geothermal energy is generally included."

5.2 Based on recent legislation such as the Clean Air Act as well as the location of the proposed development, the following technologies have been discounted:

- Wind Turbines
- Biomass
- Hydropower / Wave Technology
- Biogas / Biofuel

5.3 The feasibility of remaining renewable and low carbon technologies is highlighted in the table opposite.

5.4 Following a review of the available technologies, the following have been chosen to be integrated into the scheme:

- Air Source Heat Pumps (Residential)
- Air Source Heat Pumps (Commercial)
- Ground Source Heat Pumps
- Solar Thermal
- PV Panels (Commercial, Non-Domestic and Residential (Houses)

FEASIBILITY

Technology	Considerations					Overall Feasibility
	Cost	Noise	Land Use	Tariffs	CO_2 Offset	
Photovoltaic Panels (PV)	There is currently an increased cost of PV installation due to supply-chain issues and shipping costs over that of low prices seen pre-COVID. This is partially offsetting the decreased payback time that the rise in electricity costs per kWh has created but the payback time is still only a few years, enabling a ROI. PV furthermore is pure renewable energy and has a part to play in reducing carbon emissions and running costs in the proposed development. The CO_2 offset of PV in Part L 2021 is 73.8% less than Part L 2013 therefore carbon savings for the technology are greatly diminished.					**Yes**
Air Source Heat Pumps (ASHP)	ASHPs provide a low-temperature heating system at high efficiency and work will with either radiators or underfloor heating as the chosen emitters. They are also zero-NOx emission systems and therefore comply with any local policies on Air Quality. Due to the continued decarbonisation of the National Grid, associated CO_2 offset with the system will increase with time.					**Yes**
Ground Source Heat Pumps (GSHP)	GSHPs are like ASHPs but operate at slightly higher efficiencies due to drawing heat from the ground, a source that is warmer than the outside air, especially in Winter. The technology is more expensive than Air Source and requires significant horizontal space for a *slinky* style system which is available here. Due to the higher efficiencies, it is considered more suitable for uses such as the school which has the vast majority of demand in the winter months.					**Yes**
Solar Thermal	Solar Thermal provides the most benefit where there is a consistent year-round demand for Hot Water. Therefore, it is most suited to uses such as a Care Home. The system is low-maintenance and roof mounted and provides Hot Water all-year round with most of the provision coming in the Summer months. The CO_2 offset of electricity in Part L 2021 is 73.8% less than Part L 2013 therefore carbon savings for the technology are diminished but the system will provide free renewable energy and lower running costs.					**Yes**

Table: Renewable Energy Feasibility

Air Source Pump - Residential

5.5 An Air Source Heat Pump has been proposed to provide the heating and hot water for the scheme. The technology has been chosen because:

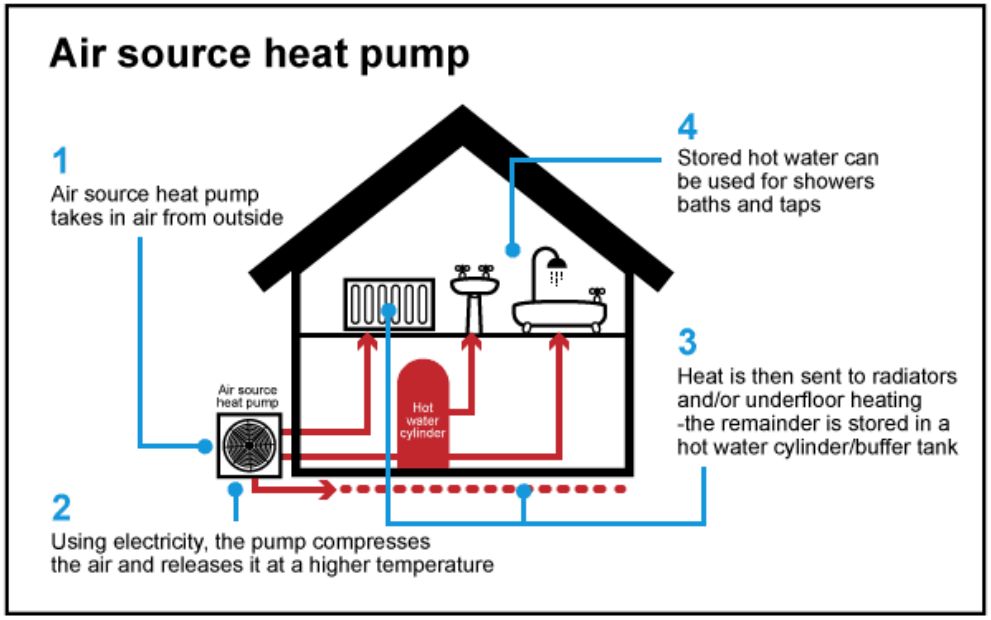
- It is a highly efficient system (400%+) and will provide both the space heating and hot water of the proposed dwelling.
- Requires less capital cost and is simpler to install than Ground Source Heat Pumps
- It is simple to install when compared to other renewable technologies.

5.6 At this early stage, a specific Air Source Heat Pump model has not been modelled but it is anticipated to be between 5-8kW per dwelling and would typically come from an established manufacturer in the UK market such as Mitsubishi, Vaillant or Samsung.

Some models perform better than others in SAP and the impact of this on the overall CO_2 emissions will be reviewed during M&E design at RIBA Stage 3 / 4 and a unit that provides optimum efficiency chosen.

ASHP System Details	
Area Used	All
Number of Heat Pumps	1 per dwelling (Houses)
Size of Heat Pumps	External Unit circa: 1,100 * 965 * 450 * 128mm
Make and Model	TBC. Circa 5-8kW Heat Pumps will be required
SCOP	3.5 – 4.5
Fraction of Heat	100%

Table: *Proposed ASHP Specification*

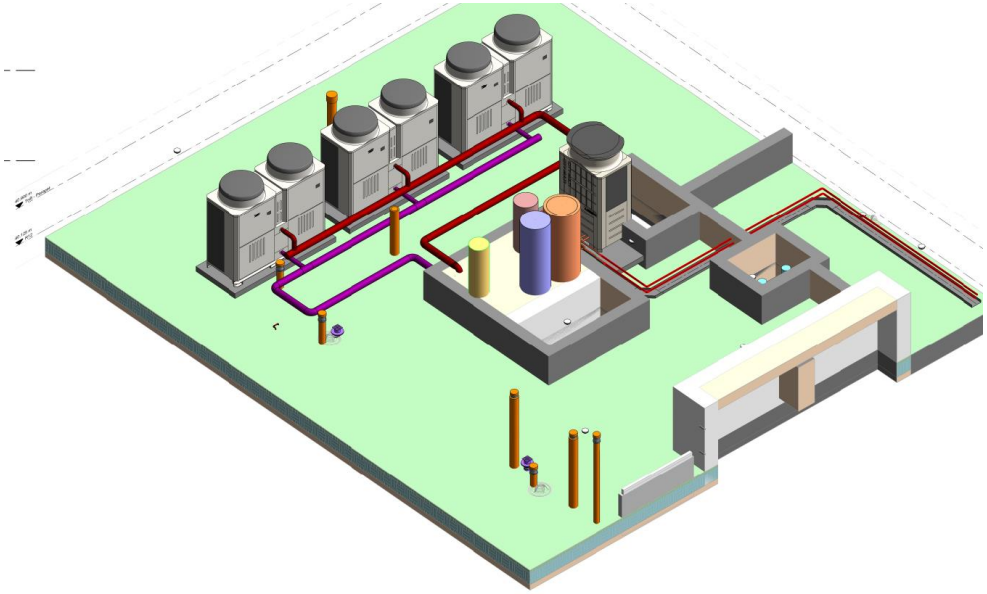


Air Source Heat Pump - Commercial

5.7 As part of the proposal for the non-domestic buildings, Air Source Heat Pumps are proposed as the lead heat source alongside potentially Electric Boilers which will be used to assist with peak demand in the Winter. They have been chosen because:

- It is a high efficiency system that can cater for the space heating and hot water demand.
- Requires less capital cost and is easier to install than GSHP.
- Works well with planned Solar Technologies.

5.8 The system will be designed to be as efficient as possible in terms of flow and return temperatures and the communal pipework will be insulated beyond the minimum requirements as stipulated in the Non-Domestic Building Services Guide.



3D VIEW PLANTROOM

ASHP Details	
Number of Heat Pumps	2-3
Size of Heat Pumps	Circa 40-45kW
Dimensions and Weight	1978x759x1710mm and 526kg
Thermal Store	Yes
Make and Model	TBC – Mitsubishi currently used for input figures
SCOP	3.3
Anticipated Fraction of Heat	70%

Ground Source Heat Pumps - Commercial

5.9 The decision to opt for ground source heat pumps (GSHPs) over air source heat pumps (ASHPs) for non-domestic facilities such as schools and care homes on a greenfield site can be influenced by a variety of factors. These include efficiency and performance considerations, site-specific conditions, as well as operational cost and durability factors.

1. **Efficiency and Performance**: GSHPs are widely recognized for their superior efficiency compared to ASHPs. This efficiency is quantified by the Coefficient of Performance (CoP), which measures the ratio of useful heat or cooling output to the energy input, typically electricity, under specific operating conditions. GSHPs often exhibit higher CoP values, especially in colder climates.

   The reason behind this lies in their operating principle: GSHPs extract heat from the ground, where temperatures remain relatively constant throughout the year. In contrast, ASHPs extract heat from the air, which experiences significant temperature fluctuations between seasons.

   During colder months, the efficiency of ASHPs tends to decline due to the larger temperature difference between the heat source (air) and the heat sink (building). However, GSHPs maintain a stable efficiency as the ground temperature remains consistent. This higher efficiency leads to lower electrical energy consumption for a given heat output, resulting in significant energy savings over the year, especially in facilities with high heating demands like schools and care homes.

2. **Site-Specific Factors**: A crucial aspect in choosing between GSHPs and ASHPs is the physical characteristics of the site. GSHPs require the installation of ground loops, either vertically (boreholes) or horizontally (trenches). The choice between these options depends on available land area, soil or rock conditions, and local regulations.

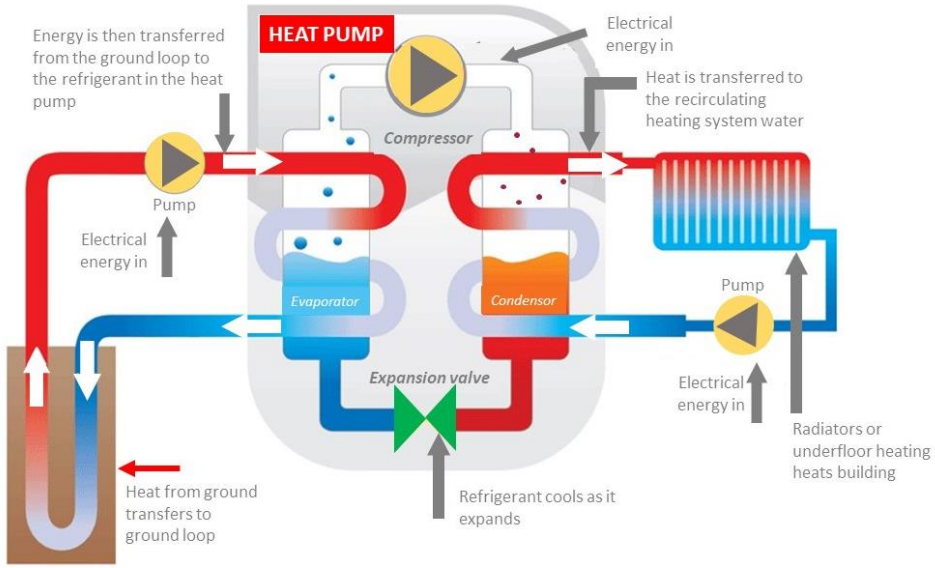
   For instance, vertically installed GSHPs require less land area but involve deeper drilling, leading to higher installation costs. They may also face more stringent regulatory requirements due to potential impacts on groundwater. Conversely, horizontal installation requires more land area but is generally more cost-effective and has a lower regulatory burden.

   The ground's nature (rock, clay, sand, etc.) also significantly influences the heat transfer capacity, affecting the GSHP system's efficiency. Some soils have good thermal conductivity and diffusivity, making them well-suited for GSHPs.

3. **Operational Noise**: GSHPs generally operate at lower noise levels compared to ASHPs. ASHPs require external fans for heat exchange with the ambient air, generating considerable noise. For facilities like schools and care homes, noise considerations can be crucial. The quieter operation of GSHPs can provide a more comfortable and less disruptive environment for both residents and staff.

4. **Maintenance and Durability**: GSHPs typically require less maintenance and have a longer lifespan than ASHPs. The heat pump unit of a GSHP system is usually housed indoors, protecting it from weather-induced wear and tear, reducing maintenance needs, and extending its operational life. Moreover, ground loops used in GSHP systems are buried underground and are often made from highly durable materials like high-density polyethylene (HDPE), which can last for many decades with minimal maintenance. The lower maintenance requirements and longer lifespan of GSHPs contribute to lower overall lifetime costs, despite their higher upfront installation costs.

Simplified ground source heat pump system flow diagram



Solar PV – Non-Domestic

5.10 PV details and benefits:

1. **Substantial energy savings**: A 45kWp PV panel system can generate a significant amount of electricity, estimated at around 44,000 kWh annually (based on average UK solar irradiance). This can offset a portion of the running costs for the building and based on current UK energy prices (October 2023 price cap of 27.35p per kWh) would be circa £12,000 per year.
2. **Clean and renewable energy**: By installing a PV system, the building actively contributes to the UK's renewable energy targets and reduces its carbon footprint, helping to combat climate change and aligning with the UK's commitment to reach net-zero emissions by 2050.
3. **Financial incentives and revenue generation:** By installing a PV system, the building can take advantage of government incentives such as the Smart Export Guarantee (SEG). Under the SEG, a monetary payment can be earned per kWh by exporting surplus solar energy generated back to the grid.

PV System Details	
PV Proposed	To SEN School, Primary School and Care Home
Module Output	500 watts (based on September 2023)
Number of Panels	100-200
Total kWp	Circa 50-100kWp per use depending on roof space
Tilt of Collectors (Optimal)	15 degrees @ South
Overshading (Optimal)	Less than 20%

Table: Proposed PV Specification – Non-Domestic

Solar PV – Domestic

5.11 It is proposed that PV will be supplied to each individual residential house. This is to maximise on-site renewable energy generation and to reduce reliance on the National Grid as well as :

1. **Substantial energy savings**: A 5kWp PV panel system can generate a significant amount of electricity, estimated at around 4,000 kWh annually (based on average UK solar irradiance). This can offset a large portion of the running costs for the houses and based on current UK energy prices (July 2023 price cap of 27.35p per kWh) would be circa £1,100 per year.
2. **Clean and renewable energy**: By installing a PV system, the houses actively contributes to the UK's renewable energy targets and reduces its carbon footprint, helping to combat climate change and aligning with the UK's commitment to reach net-zero emissions by 2050.
3. **Financial incentives and revenue generation:** By installing a PV system, the dwellings can take advantage of government incentives such as the Smart Export Guarantee (SEG). Under the SEG, a monetary payment can be earned per kWh by exporting surplus solar energy generated back to the grid, especially during the summer months where-by there will be high generation and low demand.

PV System Details	
PV Proposed	To the Houses
Module Output	500 watts (based on September 2023)
Number of Panels	10
Total kWp	5kWp
Tilt of Collectors (Optimal)	15 degrees @ South
Overshading (Optimal)	Less than 20%

Table: Proposed PV Specification – Domestic

5.12 Commercial

At this stage, Battery Storage has not been proposed as the full heat demand profiles from the proposed non-domestic buildings have not yet been developed but this will be reviewed at RIBA Stage 3. Payback on this technology is still higher than just a standard non-storage PV system and as a Care Home has a consistent 24 hour demand, battery storage would not be necessary.

For education use, schools have long periods in the summer without pupils and it recommended that the power is not left in the batteries for too long a time as the energy does naturally dissipate over time. However, depending on the array size of PV proposed to the schools, it could play a part in reducing the fuel bills and reliance on the National Grid, especially with the high energy-use when in full operation.

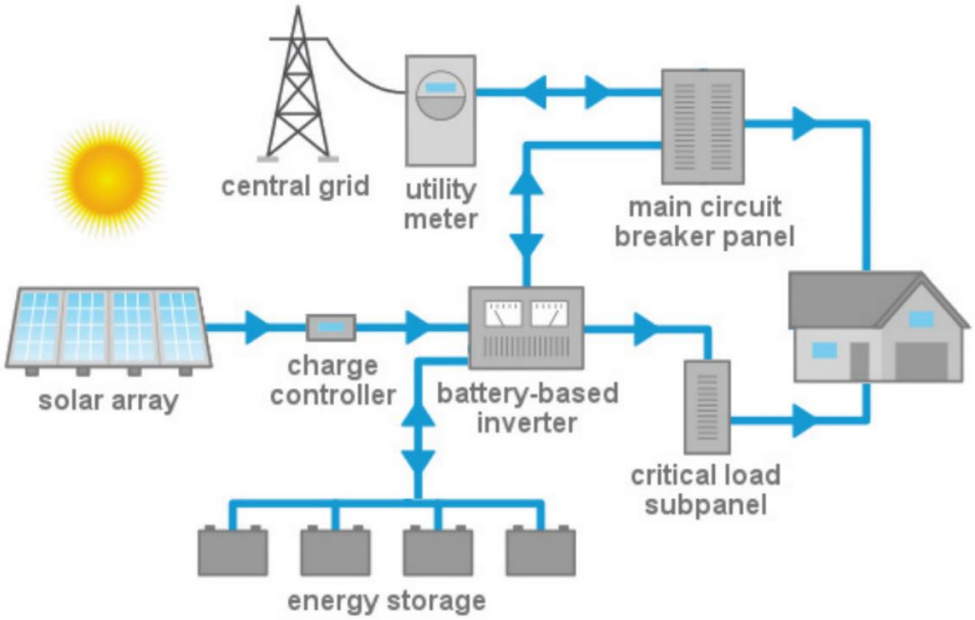


***Figure**: PV Schematic including battery storage.*

Solar Thermal – Care Home

5.13 Solar Thermal details and benefits:

a. Substantial energy savings: energy savings from solar thermal panels depend on various factors, including the amount of sunlight received in the location. Colchester, Essex, being in the UK, receives a moderate amount of sunlight and can expect solar radiation around 1,000kWh per annum based on MCS figures. A solar thermal system can provide around 50-70% of a care home's hot water needs, leading to significant energy savings depending on the hot water demand in-use.

b. **Cost Reduction**: Solar hot water systems can significantly reduce a care home's energy bills by providing free hot water from the sun. This can help lower operational costs.

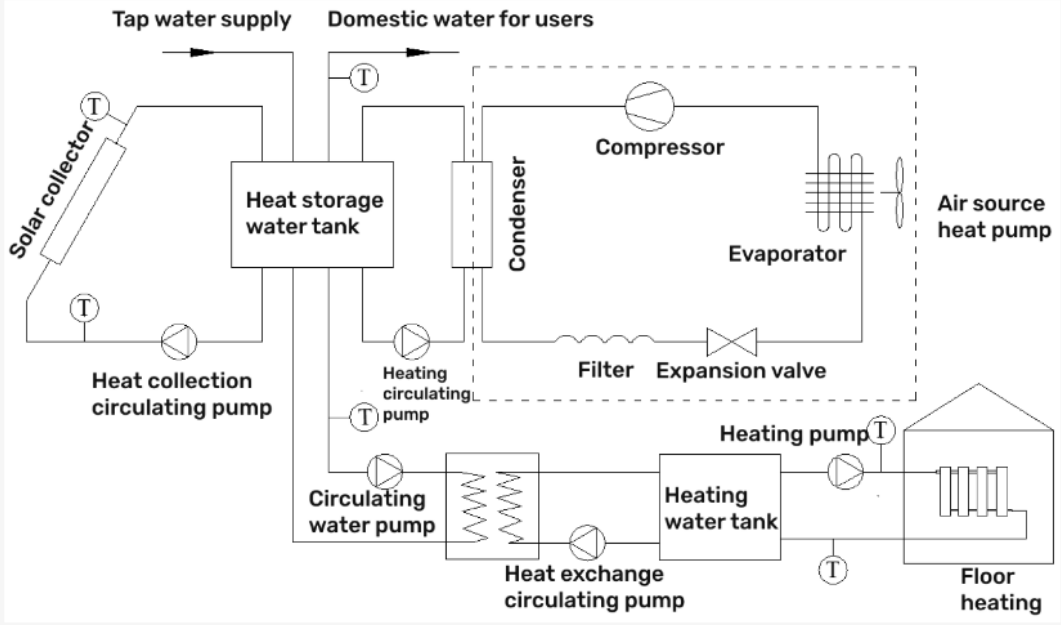
c. **Energy Security:** Investing in solar hot water systems can enhance the care home's energy security by diversifying its energy sources. By reducing dependence on the grid for hot water, the care home becomes more resilient to potential energy disruptions.

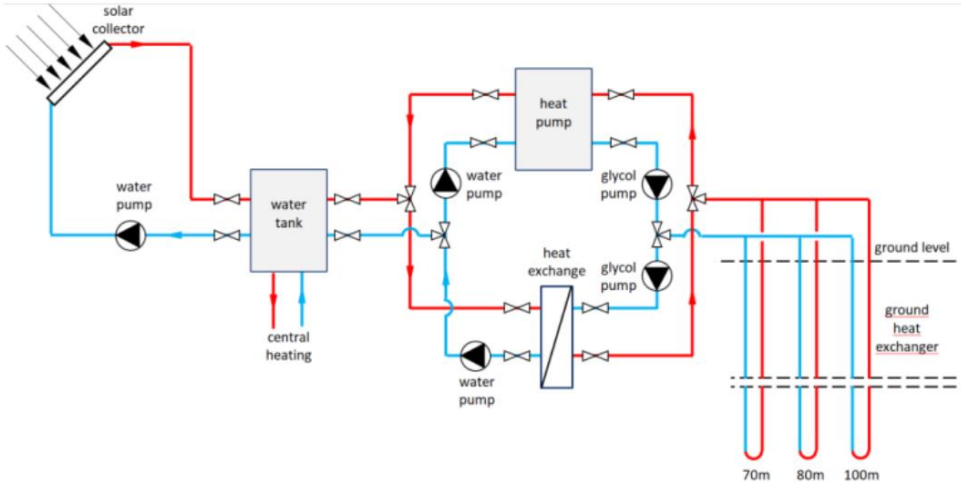
b. **Long-term Investment**: Solar thermal systems warrantied for up to 20 years. Thus the system can provide long-term benefits and help future-proof the facility against potential future rising energy costs.

5.14 Solar Hot Water is still a fairly niche system in comparison to Solar PV with some of the larger manufacturers ceasing production in the UK. However, it is still commercially available, and an Evacuated Tube system has been proposed for the scheme. These have higher efficiencies than a Flat Plate system and can be more than 90% efficient. The system here has been sized alongside the anticipated cylinder size however this may need to be tweaked at RIBA Stage 4 and 5 to ensure the optimum size of system is proposed to match up with the cylinder size and hot water demand.

Solar Thermal details and benefits:

Figure 2. Schematic diagram of solar–air-source heat pump dual-supply heating system.





Schematic diagram of solar-assisted ground-source heat pump system.

6. SUSTAINABILITY MEASURES

6.1 The proposed development has incorporated sustainable measures wherever possible through the design and proposals. Some of these are:

Materials

6.2 When considering minimising the environmental impact of materials this requires the specification of materials with a low environmental impact across their lifetime. The BRE's Green Guide rating system focuses on the major building element build ups of the roof, external walls, internal walls, upper and ground floor and windows and rates each element from A+ to E across a range of environmental factors.

6.3 All timber products used on the project, including site as well as construction timber, will be legally harvested and traded timber. No products used in the development should be included on the CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) list.

Additionally, all timber and timber-based products should be procured from suppliers and manufacturers who can provide full Chain of Custody certification for their corresponding products. Certifications that demonstrate full Chain of Custody certification include Forest Stewardship Council (FSC) or Programme for Endorsement of Forest Certification (PEFC).

Insulation

6.4 The insulation for the scheme has been generally specified as Mineral Wool or such based variants.

- ✓ Offers ever decreasing Thermal Conductivity.
- ✓ Achieves an A+ rating when compared to the BRE Green Guide.
- ✓ Has zero ozone depletion potential (zero ODP) and zero global warming potential (GWP).
- ✓ Having BBA certification and Part B compliance.

Whole Life-Cycle Carbon

6.5 As well as carbon emissions assessed within Part L of the Building Regulations, both embodied carbon and operational carbon emissions must also be considered to achieve a truly *net-zero* future.

Source: LETI embodied carbon primer

6.6 In terms of embodied carbon, the following hierarchy will be followed to reduce these emissions:

- Build Less
- Build Light
- Build Wise
- Build Low Carbon
- Build for the Future
- Build Collaborative

Circular Economy & Construction Waste

6.7 When reviewing Circular Economy measures for the scheme, the review is usually split into two segments:

a) What is already existing.

b) What is proposed.

As this scheme is proposed on Greenfield land, this section focuses on part b).

Key targets

• The specification and procurement of building components designed for longevity as well as ease of deconstruction at the end of life.

• Promoting a new sharing economy and community in the new development.

• Production of a Household Reycling Policy to help residents manage and recycle their everyday waste.

6.8 A Site Waste Management Plan (SWMP) will be implemented for the Construction Phase which will aim to reduce waste generation and target a diversion rate from landfill of up to 95% for non-hazardous construction waste.

Opportunities will be investigated to minimise and reduce waste generation in line with the Waste and Resources Action Programme (WRAP) “Halving Waste to Landfill” initiative by:

- Agreeing with material suppliers to reduce the amount of packaging or to participate in a packaging take-back scheme;
- Implementing a ‘just in time’ material delivery system to avoid materials being stockpiled, which increases the risk of their damage and disposal as waste;
- Prioritising preassembled and prefabricated construction materials, wherever practicable, to minimise onsite generation of waste and packaging and reduce the number of delivery and collection vehicles to and from the Site;
- Paying attention to material quantity requirements to avoid over ordering and generation of waste materials;
- Segregating waste at source where practical;
- Colour coding and signposting skips to reduce risk of cross contamination. Skips will also be covered to prevent dust and debris blowing around the Site, these will be cleared on a regular basis; and

Transport

6.9 Electric car charging points will be provided to each house and provided in all other car parks for Flats and Non-Domestic / Community Use.

This provision will be to the minimum specification of Part S of the Building Regulations (7kW) and create an infrastructure to enable electric car ownership for the residents of the development and the staff that will work there.

Ecology and Biodiversity

6.11 The landscape proposals for the project have been meticulously developed with several objectives in mind, including maintaining and enhancing biodiversity on site, providing areas of rural habitat, and aiming for a net gain in biodiversity of 20%. This approach not only increases the biodiversity and amenity on site, but also contributes to the creation of high-value habitats.

6.12 Generally planting that is varied, responsive to the seasons and beneficial to wildlife has been proposed; robustness and ease of maintenance have also been key considerations in selecting planting species.

Planting will be complemented with physical structures such as bird boxes, bat boxes and bee boxes to encourage biodiversity and to provide safe habitat to wildlife.

Health and Wellbeing

6.13 The development at Narcissus Road is aiming to create a high quality built environment that supports the health, social and cultural well-being of its residents. Below are detailed some of the design principles that contribute to that aim;-

- Where possible, apartments designed as dual aspect to maximise the views of the outside and increase natural light;
- Good levels of sound insulation within the apartments;
- Dedicated bicycle store at ground floor;
- Landscaped external amenity space;
- Access to recreational amenity within the surrounding area; and
- Selection of schools within the local area

6.14 The scheme will propose high-levels of internal daylight and the design will be optimised with the intention to exceed compliance with current best-practice documents such as the *BRE's Site Layout Planning for Daylight and Sunlight, A guide to good practice (BR 209), by P J Littlefair, 3rd Ed* and *BS EN 17037:2018 Daylight in Buildings*. These targets are:

Target illuminances from daylight over at least half of the daylight hours		
Level of recommendation	**Target illuminance E_T (lx) for half of assessment grid**	**Target illuminance E_{TM} (lx) for 95% of assessment grid**
Minimum	300	100
Medium	500	300
High	750	500

Air Quality

6.15 The proposed development is not located within any Air Quality Management Area. An Air Quality Assessment has been carried out, informed by on-site air quality monitoring. This assessment has identified and evaluated potential impacts on sensitive receptors from the proposed development. Where necessary, mitigation measures have been suggested to minimize any potential air quality effects.

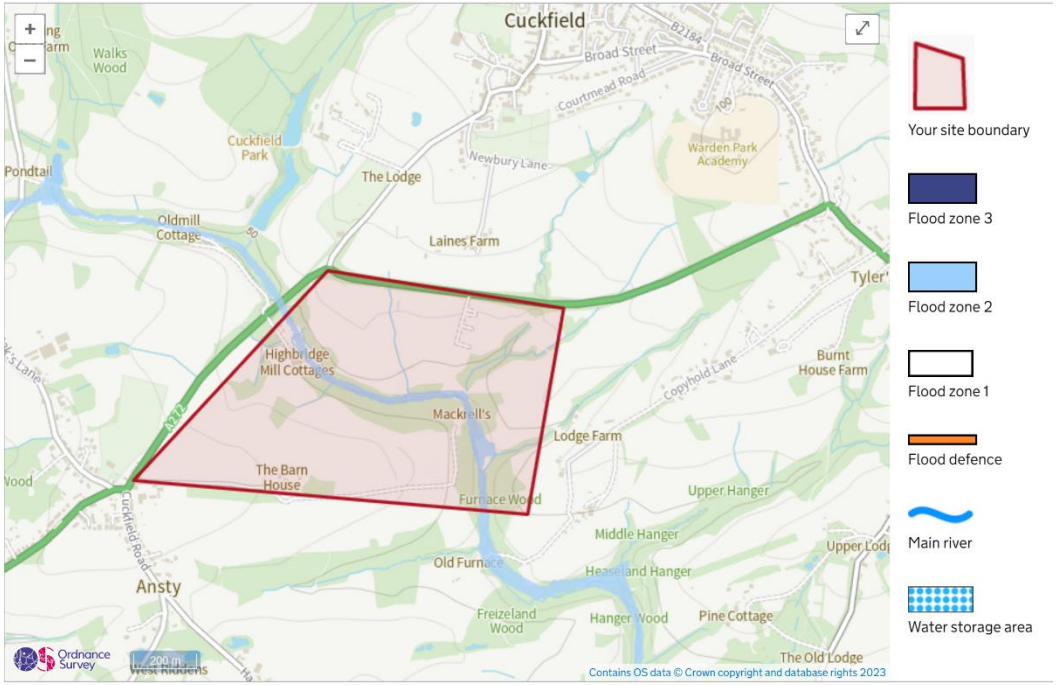
6.16 An Air Quality Assessment has been conducted for the proposed development. The findings suggest that no significant adverse effects on air quality are anticipated for both human and ecological receptors. This underscores the project's commitment to fostering a healthy and sustainable environment.

Flood Risk & SuDs

6.17 The site is a Greenfield site.

6.18 The site does not have any Archaeological interest.

6.19 The Government Flood Risk maps confirm that the site is located in Flood Zone 1, with non-development areas being in Flood Zone 2. As a result, Sustainable Urban Drainage systems will be implemented, and the scheme will be designed to mitigate the risk of flooding. A map of the proposed measures, taken from the Drainage Statement by Yellow Sub Geo – ref: P21637_R5, can be found on the subsequent page.



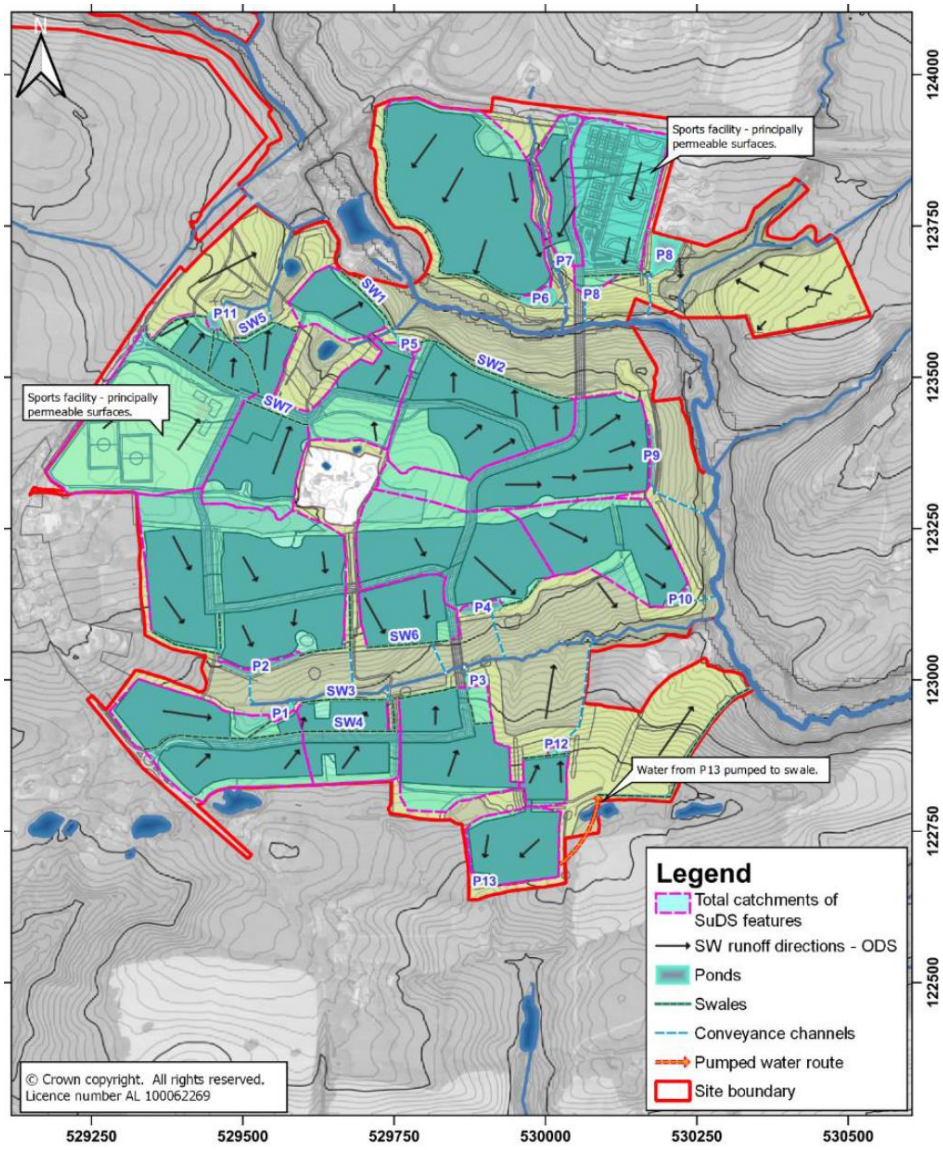


Figure 13 Catchment areas and proposed SuDS features

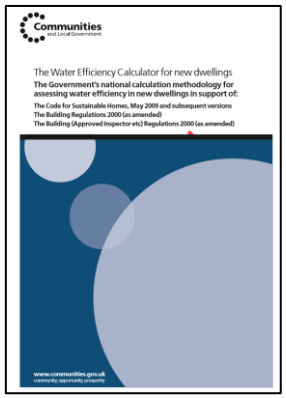
Water Efficiency

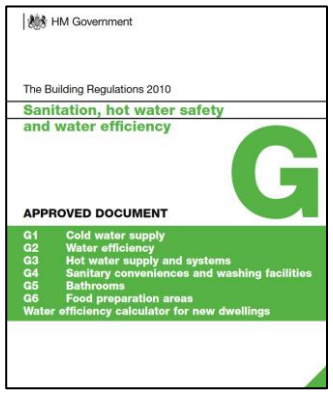
6.21 All developments must incorporate water conservation measures to limit the consumption to 110 litres per person per day in line with the Local Plan (DM39).

6.22 This target is the same as the optional target included within Part G of the Building Regulations which encourages the efficient use of potable water. The specification proposed has been produced using the calculation methodology used to assess compliance against the water performance targets in Building Regulations 17.K and is based on the Government's "The Water Efficiency Calculator for new dwellings – September 2009" (withdrawn in June 2016).

6.23 The current guidance and calculation methodology can now be found within Approved Document G - Sanitation, hot water safety and water efficiency (2015 edition with 2016 amendments): https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/504207/BR_PDF_AD_G_2015_with_2016_amendments.pdf

6.24 The proposed specification for the scheme can be found on the right-hand side of the page showing compliance. For the Dishwashers and Washing Machines, default consumption figures have been used.





PROPOSED SANITARYWARE SPECIFICATION		
ELEMENT	SPECIFICATION	UNIT OF MEASUREMENT
WC	**6/3 dual flush**	*Litres per Flush*
Basin Taps	**5**	*Litres per Minute*
Kitchen Sink Taps	**9**	*Litres per Minute*
Shower	**8**	*Litres per Minute*
Bath	**155**	*Capacity to Overflow*
Washing Machine	**8.17**	*Litres per Kilo (Dry)*
Dishwasher	**1.25**	*Litres per Place Setting*
Total Consumption (Litres / Person / Day)		**104.7**

***Table** : Proposed Water Consumption (litres/person/day*

7. CONCLUSION

7.1 An outline energy strategy has been undertaken and this document illustrates a targeted reduction in CO_2 emissions over the baseline of Part L 2021 by a minimum of 60% via:

Energy Efficient Measures

- High levels of thermal insulation to achieve U-Values in-line with the Future Homes Standard (consultation document)
- LED Lighting with high luminous efficacy (105lm/W)
- Mechanical Ventilation with Heat Recovery (MVHR)
- Air Permeability target of 3 m3/(hm2) @50Pa

Renewable Technologies

- Air Source Heat Pumps as the primary source of heat and hot water.
- Solar PV Panels
- Solar Hot Water Panels
- Ground Source Heat Pumps

Sustainability Measures

- Materials
- Water
- Daylight
- Transport
- Daylight
- Transport

7.2 This report illustrates how energy and sustainability measures have been incorporated and that the proposed development has been designed as low-carbon and in compliance with the planning policies of the local authority.

Appendix 1

fabrik

PROJECT TITLE
LAND AT ANSTY, HAYWARDS HEATH

DRAWING TITLE
COMBINED SITE BOUNDARIES

DWG. NO. D3012-FAB-00-XX-DR-Y-054

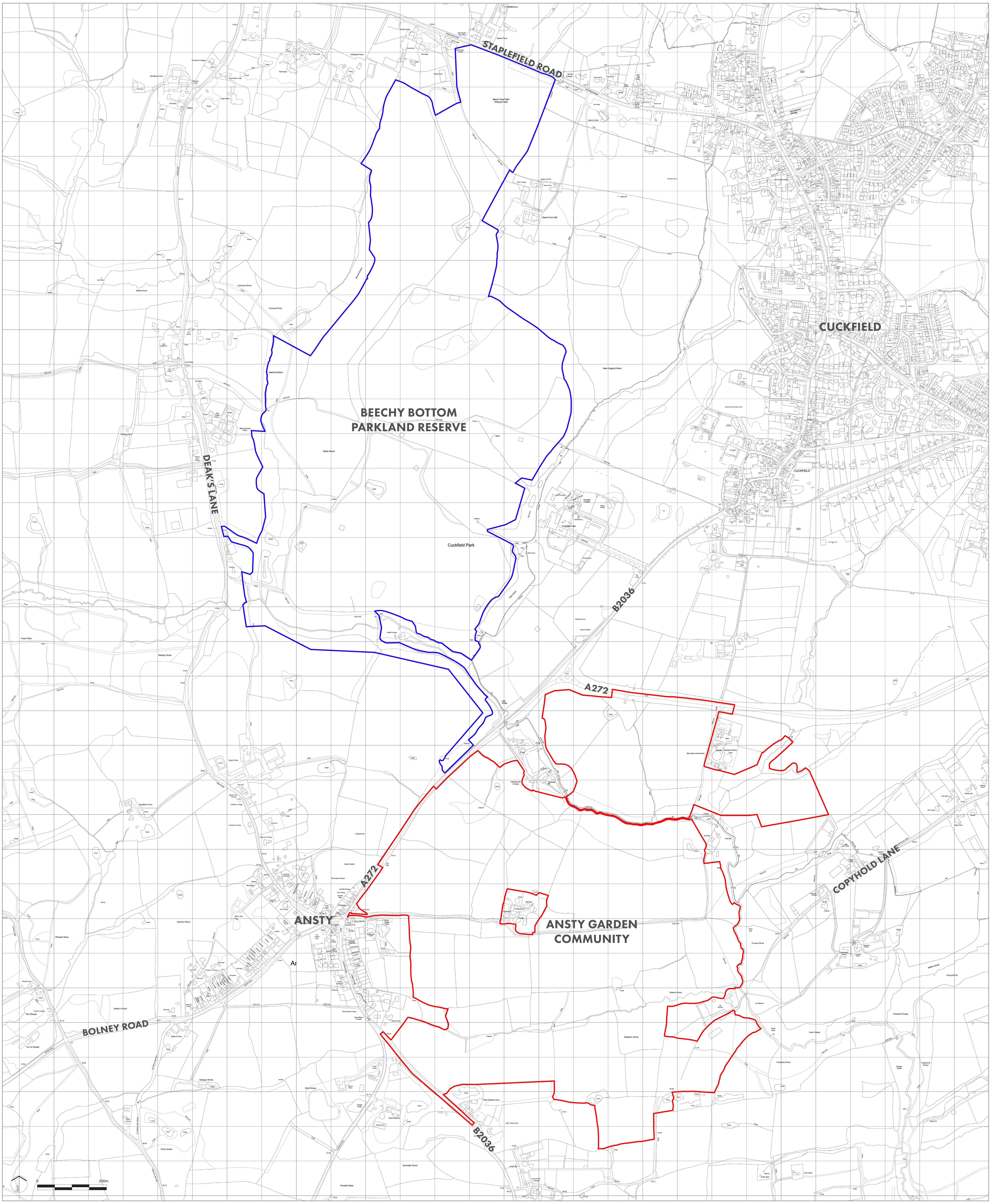
REV.	DESCRIPTION	APP.	DATE
02	Updated parkland reserve site boundary to blue	BS	04.10.23
01	Altered boundary adjacent to sewage works	BS	26.05.23

ISSUED BY London T: 020 7620 1453

DATE APR 2023 DRAWN ID
SCALE@A1 1:5,000 CHECKED ID
STATUS DRAFT APPROVED BS

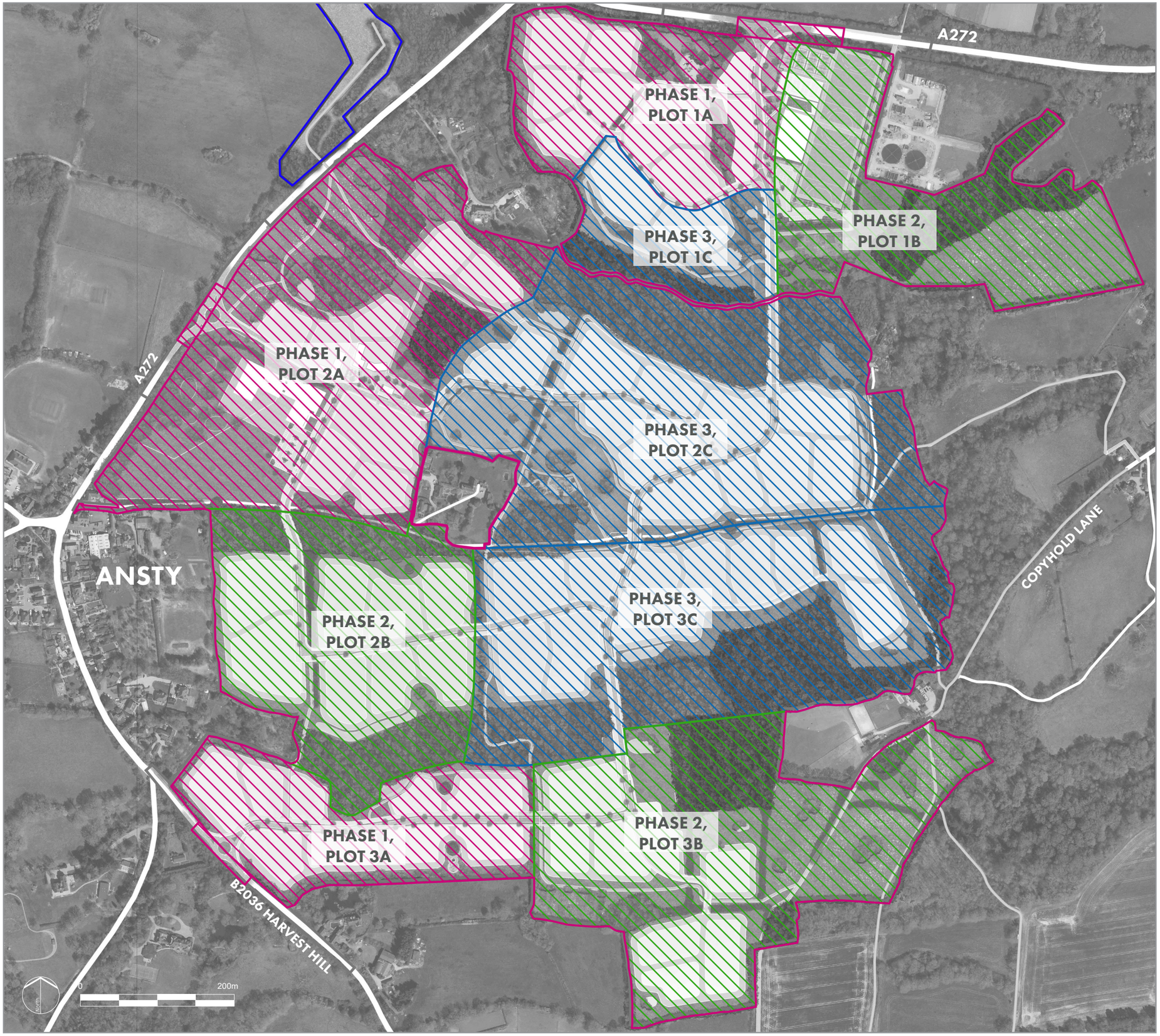
Notes:
1. This drawing is the property of fabrik ltd. It must not be copied or reproduced without written consent.
2. Only figured dimensions are to be taken from this drawing. All contractors must visit site and be responsible for taking and checking all dimensions related to the works shown on this drawing.

J:\D3012 LAND AT ANSTY, HAYWARDS HEATH\DRAWINGS\07 FABRIK\04 ILLUSTRATOR\B EXPORTED IMAGES



LEGEND
SITE BOUNDARY
PARKLAND RESERVE BOUNDARY

J:\D3012 LAND AT ANSTY, HAYWARDS HEATH\DRAWINGS\07 FABRIK\04 ILLUSTRATOR\B EXPORTED IMAGES



LEGEND

- SITE BOUNDARY
- PARKLAND RESERVE BOUNDARY
- PHASE 1
- PHASE 2
- PHASE 3

REV.	DESCRIPTION	APP.	DATE
04	Parkland reserve blue boundary	BS	12.10.23
03	Removal of plot boundary	BS	21.04.23
02	Addition of phase 2 and 3, and plot boundaries	BS	20.04.23
01	Altered Phase 1A area	BS	18.04.23

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PROJECT TITLE

LAND AT ANSTY, HAYWARDS HEATH

DRAWING TITLE

PHASING PLAN

ISSUED BY	London	T: 020 7620 1453	
DATE	APR 2023	**DRAWN**	ID
SCALE@A3	1:5,000	**CHECKED**	ID
STATUS	DRAFT	**APPROVED**	BS
DWG. NO.	D3012-FAB-00-XX-DR-Y-050		

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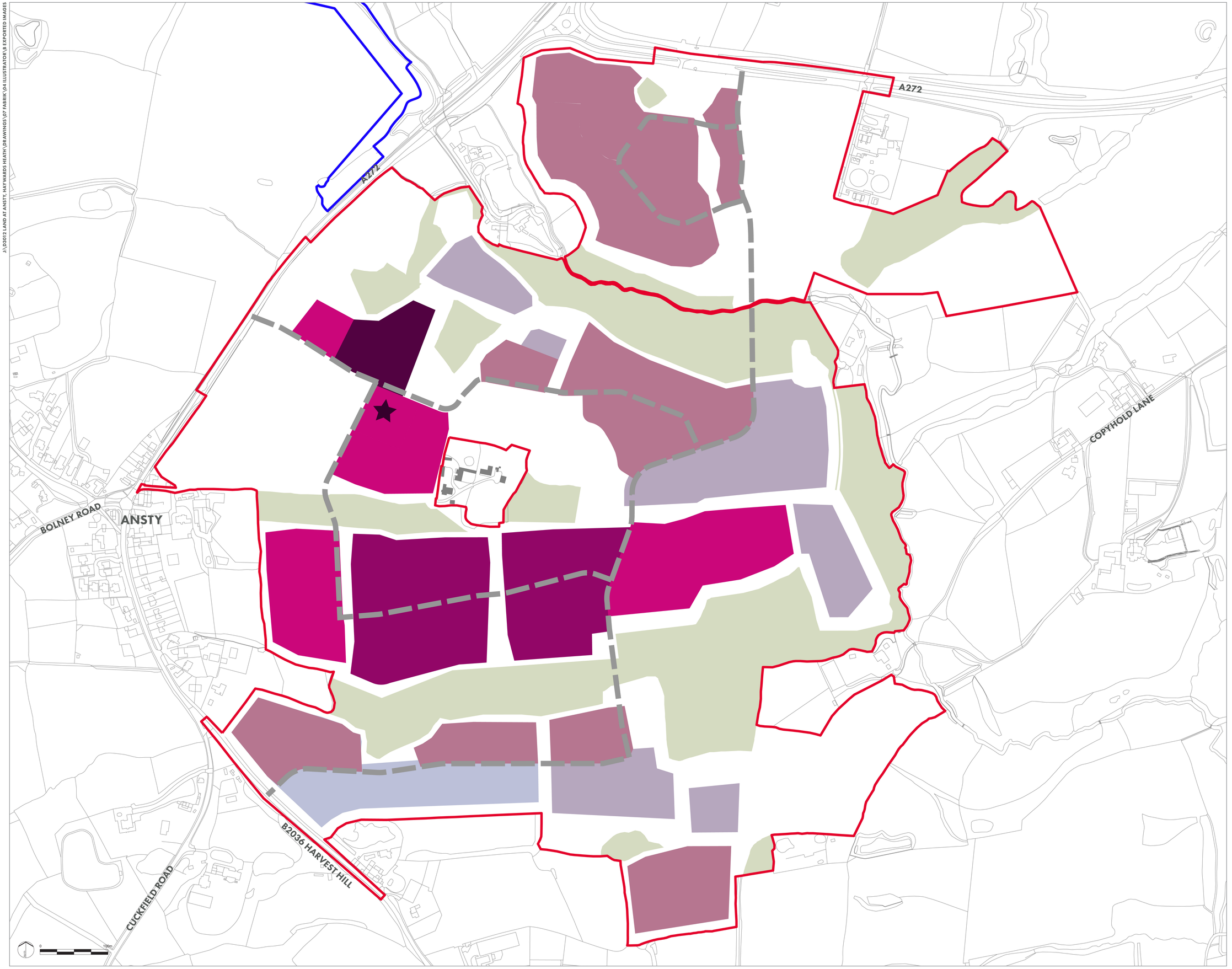
J:\D3012 LAND AT ANSTY, HAYWARDS HEATH\DRAWINGS\07 FABRIK\04 ILLUSTRATOR\8 EXPORTED IMAGES



LEGEND

- SITE BOUNDARY
- PARKLAND RESERVE BOUNDARY
- 30 DPH
- 32.5 DPH
- 35 DPH
- 40 DPH
- 45 DPH
- 50 DPH
- CARE HOME - 80 DPH
- EXISTING WOODLAND
- SPINE & SECONDARY STREET NETWORK

NOTE:

PLAN TO BE READ IN CONJUNCTION WITH SUITE OF PARAMETER PLANS:

D3012-FAB-00-XX-DR-Y-036 (ACCESS & MOVEMENT)
D3012-FAB-00-XX-DR-Y-037 (GREEN INFRASTRUCTURE)
D3012-FAB-00-XX-DR-Y-039 (LAND USE)
D3012-FAB-00-XX-DR-Y-040 (BUILDING HEIGHTS)

REV.	DESCRIPTION	APP.	DATE
08	Alteration of care home icon	BS	12.10.23
07	Parkland reserve boundary change to blue	BS	04.10.23
06	Added note	BS	15.06.23
05	Removed landscape buffers, updated density in southern area	BS	13.06.23
04	Added country park boundary	BS	26.05.23
03	Updated site boundary, access area, spine street and density in the care home/retirement parcel	BS	25.05.23
02	Updated site boundary	BS	12.04.23
01	Altered block areas	BS	11.04.23

PROJECT TITLE

ANSTY GARDEN COMMUNITY

DRAWING TITLE

DENSITY PARAMETER PLAN

ISSUED BY	London	T: 020 7620 1453	
DATE	APR 2023	**DRAWN**	ID
SCALE@A1	1:2,500	**CHECKED**	ID
STATUS	FINAL	**APPROVED**	BS
DWG. NO.	D3012-FAB-00-XX-DR-Y-045		

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