

usefulprojects

part of the Useful Simple Trust

Bold Forest Garden Village Utilities and Energy Baseline Study

Certified



Social Enterprise UK
Certified Member



EMPLOYEE
OWNERSHIP
ASSOCIATION

INVESTORS IN PEOPLE®
We invest in people Gold

Table of contents

1

Introduction

03

2

Policy review

05

3

Environmental and social context

12

4

Utilities and energy

23

5

Summary of implications

36

Version	Date	Reason for issue	Produced by	Checked by
00	16/01/2025	Initial draft	BL	GC
01	28/02/2025	Final draft	BL	GC
02	25/04/2025	Final amendments following SHBC review	BL	GC
02.1	19/06/2025	Additional amendments	BL	GC

This report was prepared by independent consultant Useful Projects (trading under Useful Simple Group Ltd). Useful Projects has prepared this report for the sole use of the client and for the intended purposes as stated in the agreement between Useful Projects and the client under which this report was completed. Useful Projects have exercised due and customary care in preparing this report but have not, save as specifically stated, independently verified information provided by others. No other warranty, express or implied, is made in relation to the contents of this report. The use of this report, or reliance on its content, by unauthorised third parties without written permission from Useful Projects shall be at their own risk, and Useful Projects accepts no duty of care to such third parties. Any recommendations, opinions or findings stated in this report are based on facts and circumstances as they existed at the time the report was prepared. Any changes in such facts and circumstances may adversely affect the recommendations, opinions or findings contained in this report.

1 / Introduction

1 / Introduction

Purpose and structure

This document sets out the findings of the baseline assessment for the Bold Forest Garden Village (BFGV) masterplan area. St Helens Borough Council aim to make BFGV a landscape-led development which optimises its unique location within the Bold Forest Park Area, sustaining and strengthening the character and its identity.

The purpose of this report is to present the opportunities and constraints associated with the area built and natural environment and to identify infrastructure requirements for the site.

The report draws information from a range of sources, all of which are referenced within the relevant sections.

Sections of this report include:

1. **Policy review:** review of the policy context;
2. **Environmental and socio context:** desktop analysis of the environmental and social context to which the site is nestled in;
3. **Utilities and energy:** survey findings on the utilities and energy infrastructure available and implications for the future BFGV development;
4. **Summary**



2 / Policy review

2 / Policy review

Summary

Introduction

This section outlines key policy documents applicable to the Bold Forest Garden Village across the following sections:

- National Policy
- Regional Policy
- Local Policy

Key policies

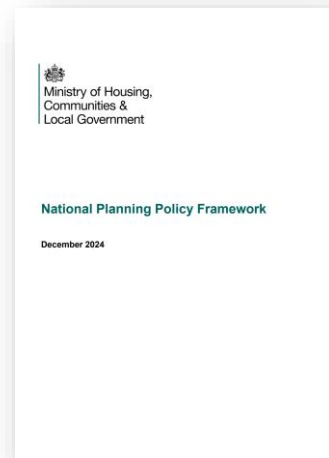
- 10% of energy needs must be met from renewable and/or low carbon energy source(s), unless shown to not be practical or viable (Policy LPC13 – St Helens Local Plan, 2022)
- Large scale schemes that would generate a demand for heat should evidence considering the feasibility of a district heating scheme (Policy LPC13 – St Helens Local Plan, 2022)
- Upcoming changes to Part L of the Building Regulations to both domestic and non-domestic buildings (Future Homes and Buildings Standard – coming into effect during 2025)

Implications

- Current local policy refers to outdated levels for Code for Sustainable Homes (CSH) which would be superseded by Part L 2021 and the emerging Future Homes and Building Standards.
- Policy requirements does not set ambition beyond part L carbon emissions savings. This conflicts with the St Helen’s climate emergency plan’s for net zero goals and desire for “*highest possible sustainability goals with high percentages of renewable energy and heat*”.
- Industry is moving towards a standard approach for net zero, such as with the launch of the UK NZCBS pilot version. St Helens Borough Council officers voiced desire for an ambition beyond policy on this site, as discussed in the workshop on 10th December 2024.

2 / Policy review

National policy



National Planning Policy Framework (NPPF), 2024

The NPPF sets out the Government's planning policies for England. These apply to the preparation of local and neighbourhood plans by local authorities, to ensure sustainable development is delivered at a national level.

The NPPF 2024 version, states that the planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change, help shape places, improve resilience and encourages the use of existing resources.

The Environment Act, 2021

The Environment Act set outs targets, plans and policies for improving the natural environment, waste and resource efficiency, air quality, water and biodiversity. Recently the Act mandated that all sites, with some exceptions, achieve a Biodiversity Net Gain of 10% as a minimum. Updated policies on waste management for non-household assets will come into force in 2025, mandating that all waste is segregated into several waste streams, with separate food/organic waste bin collections.

The Energy and Planning Act, 2008

The Energy Act allows Local Planning Authorities to set their own requirements for energy use and energy consumption in Local Plans as follows:

- a) A proportion of energy used in developments in their area to be from renewable energy sources in the locality of the development;
- b) A proportion of energy used in developments in their area to be low carbon energy from sources in the locality of the development;

- c) Developments in their area to comply with energy efficiency standards that exceed energy requirements of Building Regulations.

Building Regulations, 2021

In 2021, the government released updates to Approved Documents Part L (energy efficiency) and Part F (ventilation) to further its net zero agenda. BFGV will be subject to Approved Document (AD) L2 (2021) which only considers operational energy attributed to regulated energy use for new and existing buildings.

Energy Act, 2023

The Energy Act 2023 was introduced because of the energy crisis (2021) highlighting the issues around energy security, equity and sustainability. The new Energy Act provides policy structures to improve UK's resilience to energy security risks in the future and push forward the net zero agenda. Specifically relating to new developments, it sets structural provisions for new technology, including low-carbon heat schemes, heat networks, smart appliances and load control and the energy performance of premises

2 / Policy review

National policy



Future Homes and Building Standard (2025)

The Future Homes and Building Standard (FHBS) is a UK Government initiative aimed at improving the energy efficiency of new homes and is expected to come into effect during 2025. It is to be the latest edition of Part L of the Building Regulations, and it is forecasted that these standards will require new dwellings to produce 75-80% less carbon emissions, compared to those built to current standards.

It is hoped that these standards will help deliver ‘Zero-Carbon Ready’ buildings as they will promote the use of renewable energy technologies and electric heating sources, so as the grid decarbonises towards net zero, the operation of these dwellings can become fully decarbonised.

The adjoining table outlines the specification for the consultation material from 2024. Whilst the FHBS performance targets outlined in the table apply at the building level, there will be considerations from an environmental design perspective to plot layout, building orientation and typology (e.g., form factors) as part of the masterplan.

Future Homes Standard has already been consulted and we can expect its specifications to be confirmed and adopted by the end of 2025.

Building Element	Approved Document Part L1 2021	Future Homes Standard 2025 (notional building spec. March 2024 update) Option 1 / 2
Exposed walls (W/m².K)	0.18	0.18
Ground and exposed floors (W/m².K)	0.13	0.13
Roofs (W/m².K)	0.11	0.11
Windows and glazed doors (W/m².K)	1.2	1.2 (double glazing)
Air permeability (m³/hr/m²@50Pa)	5	4 / 5
Thermal bridging (W/m² k)	Reference Psi value	-
Heating system	Mains gas, Boiler and radiators	Air source heat pumps
Heat recovery efficiency (%)	Natural ventilation with intermittent extract fans	dMEV / Natural with intermittent extract fans
Waste water heat recovery	Yes with 36% recovery efficiency	Yes / No
Photovoltaic (PV)	For flats: kWp = 40% of dwelling floor area / (6.5 x number of storeys in block)	Yes / No

2 / Policy review

Regional policy

St Helens forms part of the Liverpool City Region Combined Authority (LCRCA). The LCRCA sets out strategic ambitions for area-wide topics including transport and employment.

They have set a net zero target of 2040 for the region. Their strategic direction is important to reach this goal as so much of tackling climate change needs to be done at the regionwide scale. To support their target, they have published a series of reports and strategies including a *Pathway to Net Zero* and a *Carbon Action Plan*.



LCR Pathway to Net Zero, 2022

Sets out the LCR's ambition to achieve net zero by 2040 or sooner.



LCR Climate Action Plan, 2022

Their Action Plan builds upon the Pathway to Net Zero document, setting actions for 5 years (2023-2028) that will contribute towards achieving the 2040 target

The plan is divided into 5 pillars, each with associated actions, complemented by a series of cross-cutting actions.

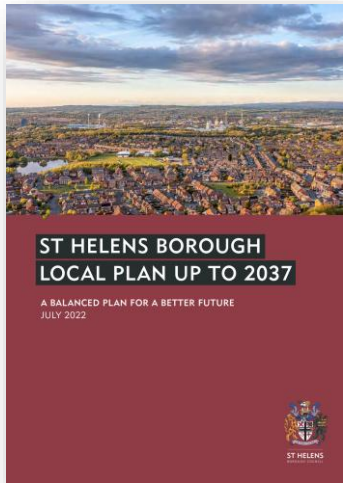
Relevant actions include:

- Regularly review energy consumption and demand forecasts for each pillar to inform the Liverpool City Region policy setting and action planning (CC12).
- Embed net zero, natural environment and climate change implications into the emerging Spatial Development Strategy and other relevant LCRCA strategies and policies (CC13).

- Work with partner local authorities to develop an approach to increase onsite low-carbon energy generation and reduce the demand for energy (B3).
- Encourage and develop centralised heat networks to supply cheap, green heat to homes and businesses, incorporating waste heat recovery where available (B16).
- Work with Electrical Grid District Network Operator to identify local network developments to enable decarbonisation, utilising information from industry, transport and buildings pillars (E8).

2 / Policy review

Local policy



St Helens Local Plan, 2022

Puts forward council policies relating to development up to 2037.

Key relevant policies:

- New developments should meet CSH level 4 (LPC13).
- Large scale schemes that would generate a demand for heat should evidence considering the feasibility of a district heating scheme (LPC13).
- 10% of energy needs must be met from renewable and/or low carbon energy source(s), unless shown to not be practical or viable (LPC13).



Bold Forest Action Plan, 2017

Sets out objectives and policies aimed at transforming the Bold Forest Park Area – of which the BFGV area forms a part – into “an economically diverse, prosperous and high-quality environment.”

Key relevant policies:

- Seek an economic focus, balanced with environmental sustainability, in order to meet the needs of the community (BFP1).
- Increase tree cover up to 30% of the Forest Park area (BFP1).



St Helens Design SPD, 2024

Provides guidance and interpretation on how a high standard of design can be met and supplements the Local Plan’s policies covering high quality design across six priority areas: community, identity, nature, movement, resources, and health.

2 / Policy review

Local climate response plan

St Helens Borough Council declared a climate emergency in 2019 and set a net zero target of 2040. To deliver on the 2040 ambition the council set out a Climate Response Plan in 2021 that set out immediate actions.

This was followed by a more detailed Climate Change Action Plan published in 2023 that put forward actions spread across the short, medium and long-term to deliver the net zero target.

The council also set up the St Helens Climate Commission to ensure the delivery outlined in the documents above is done in partnership.



St Helens Climate Response Plan, 2021

Sets out the scale of the challenge and the council's approach in tackling it. Presentation of short-term targets to address the council's direct emissions.

A pathway to net zero for borough-wide activities across the categories of industry and business, housing, transport, and climate adaptation.

Serves as the statement of intent from the council, identifying partnerships necessary for delivery and acts as a precursor to the Climate Action Plan.

St Helens Climate Change Action Plan, 2023

The climate action plan contains a series of measurable actions that if delivered will reduce Council and Borough wide emissions. There are 134 activities across that cover the short term (0-1 years), medium term (2-3 years) and longer term (4+ years).

Key relevant actions:

- Encourage new developments to achieve the highest possible sustainability goals with high percentages of renewable energy and heat (5.06).
- Develop a Climate and Sustainability Supplementary Planning Document to encourage uptake of renewable technologies in new developments (5.08).
- Establish a requirement for all new domestic developments to achieve a high percentage of carbon reduction incorporating a minimum percentage of renewable energy generation (5.17).

3 / Environmental and social context

3 / Environmental and social context

Summary

Introduction

This section provides a baseline assessment of the environmental and social context of the site. Its purpose is to highlight potential constraints and opportunities to inform the masterplan development.

It covers the following topics:

- Site conditions
- Flood risk
- Biodiversity
- Pollution
- Deprivation

On each page, implications for the BFGV site are **highlighted in bold**.

Key findings

- There is high surface water flood risk along the roads that surround the site. Future climate projections predict rainfall to increase, thereby exacerbating this risk.
- As well as containing a local wildlife site, the site lies between several large natural habitats including Clock Face Country Park along the southern border and Bold Moss Country Park to the north.
- Some noise pollution from the M62 reaches the southern section of the site.
- There are high levels of deprivation in the surrounding areas, particularly around Clock Face and St Helens town centre.

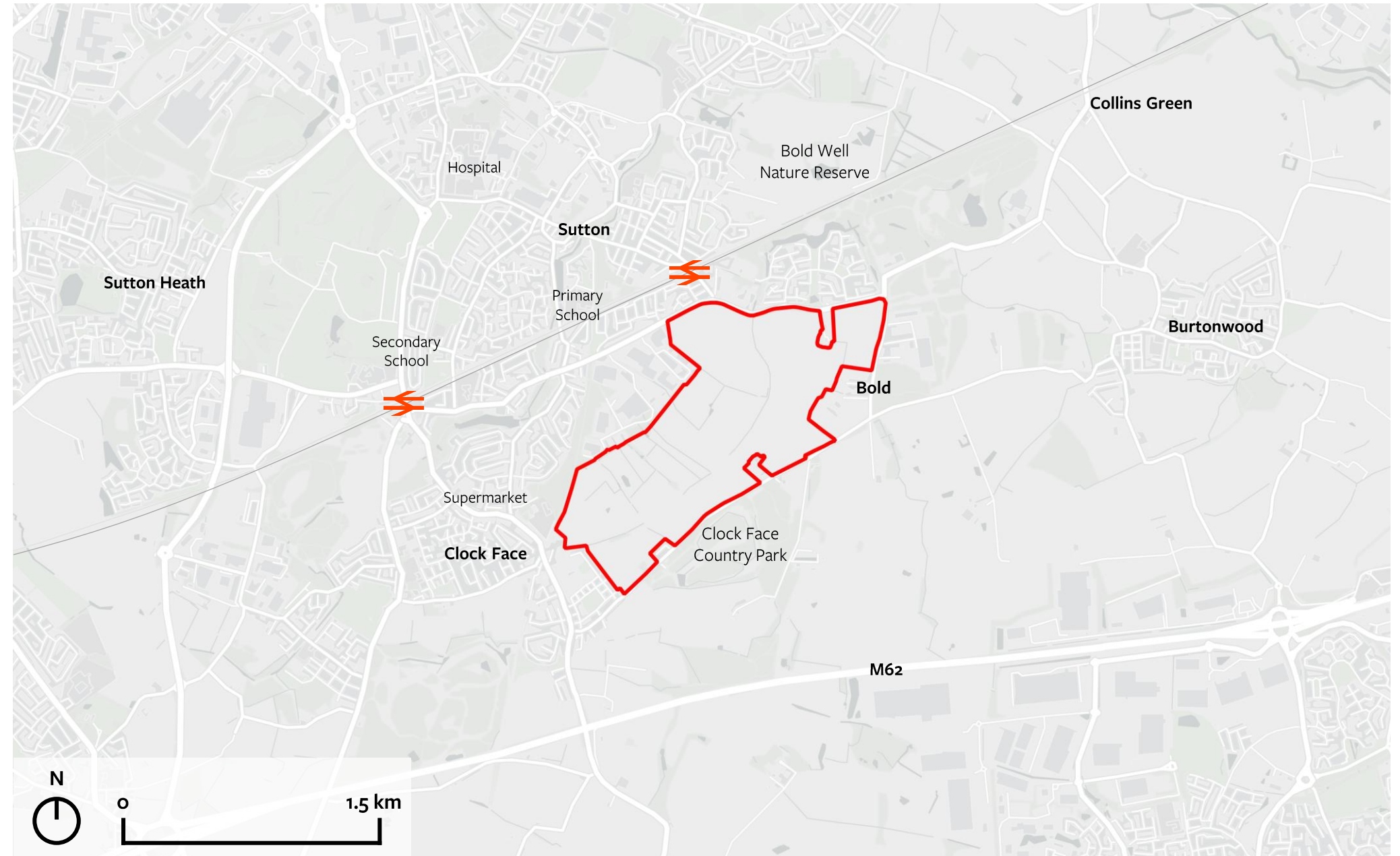
Implications

- Streets should be orientated taking into account the solar path (+/- 30 degrees off due south) where possible. Taller buildings (if any) should be located towards north to avoid overshadowing. Design could accommodate features in the public realm to shelter pedestrians from colder north-westerly prevailing winds.
- With high flood risk along surrounding roads and future rainfall predicted to increase, it will be crucial to attenuate as much water on-site as possible to avoid overloading local drainage systems.
- The BFGV site provides a clear opportunity to connect the habitats of Clock Face and Bold Moss County Parks, acting as a stepping stone to boost ecological corridors.
- The BFGV masterplan should ensure the new development incorporates features to address local needs, promotes integration with the existing community, and tackles inequality shown by the existing social deprivation indicators.

3 / Environmental and social context

Site context

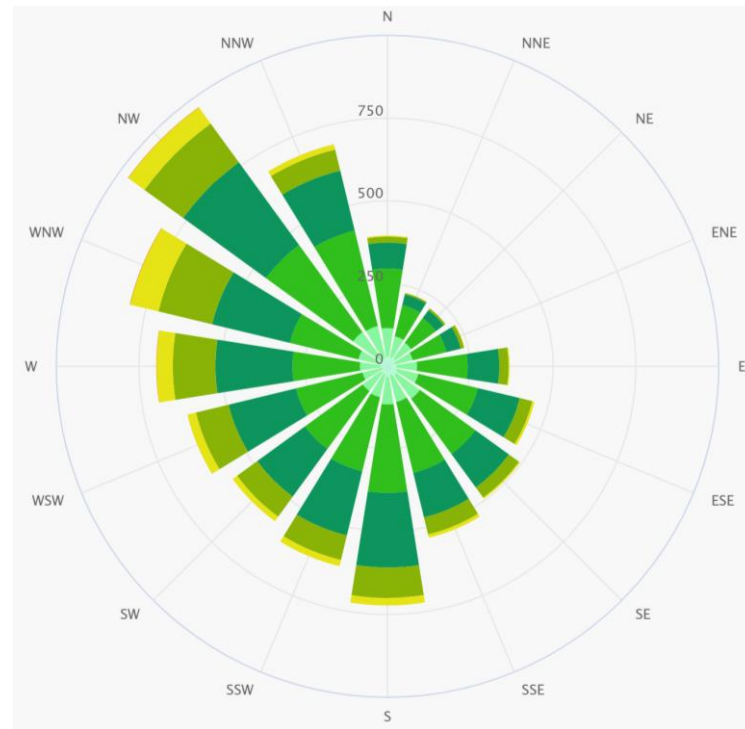
- Site spans 1.32 km² of undeveloped farmland on the edges of Sutton, Bold, and Clock Face.
- Two rail stations (St Helens Junction and Lea Green) within walking distance, providing links to Manchester and Liverpool.
- Located 4 km from St Helens Town Centre and 5 km from M62 Junction 7.
- Local amenities include independent shops in Clockface and Sutton, Aldi and Morrisons supermarkets, and three walkable pubs.
- Two medical centres nearby (Four Acre and Rainbow) plus St Helens Hospital within 2 km.
- Eleven primary/nursery schools within 0.5 km and two secondary schools (Sutton Academy and St Cuthbert's).



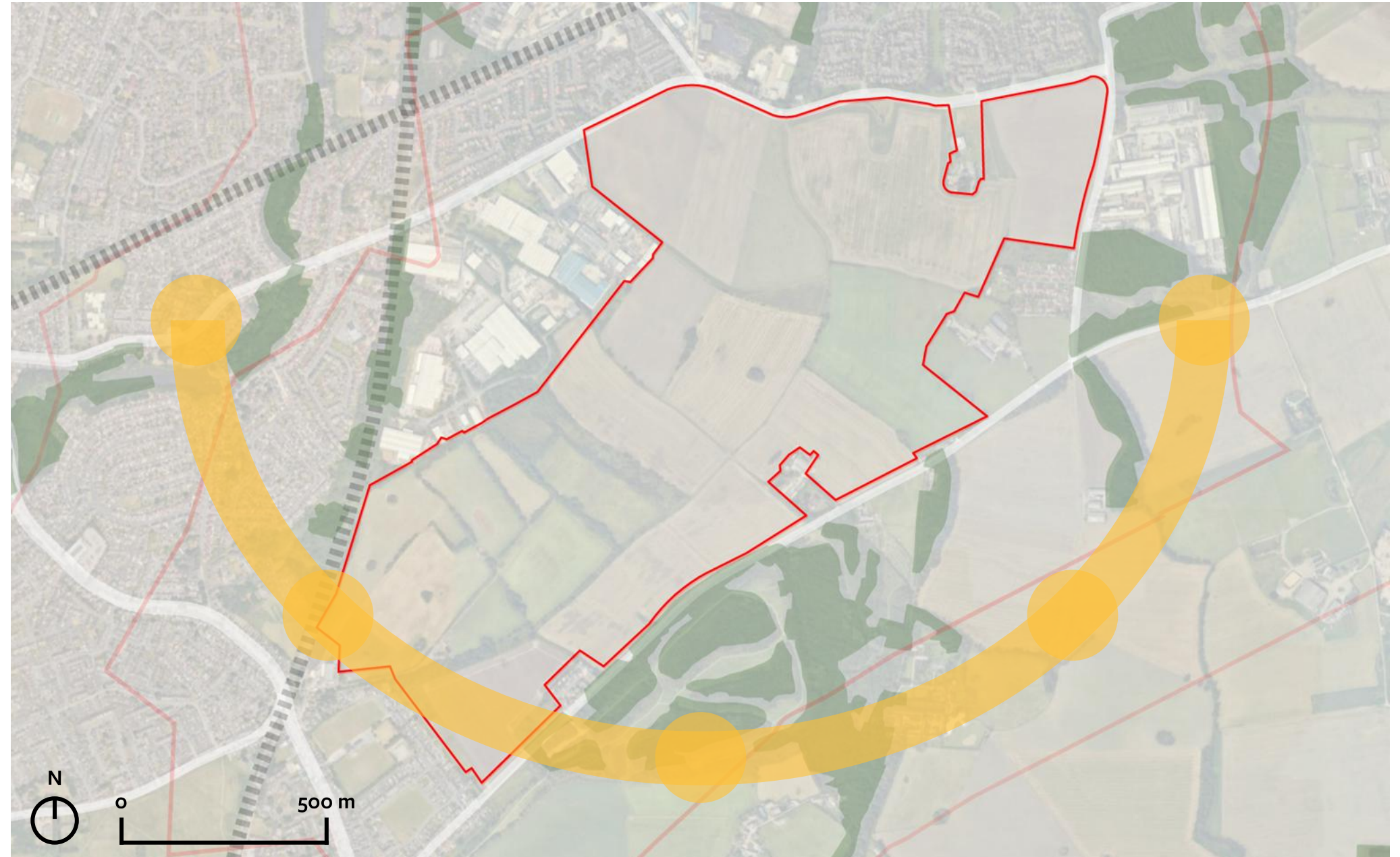
3 / Environmental and social context

Environmental considerations

- The site experiences a north-westerly prevailing wind, as shown by the wind rose below.
- The sun path is shown on the plan opposite.
- **Taking these conditions into account will enable designers to optimize building orientation, window placement, and shading for natural light and energy efficiency as well as energy generation.**



Wind rose for Clock Face showing north-westerly prevailing wind (Source: meteoblue)

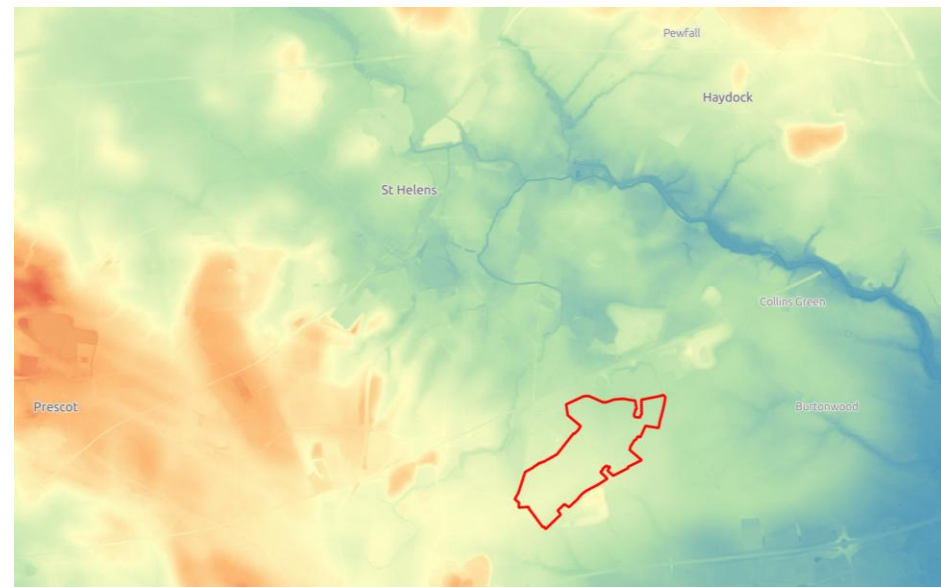


Sun path over masterplan area (Basemap source: SLR)

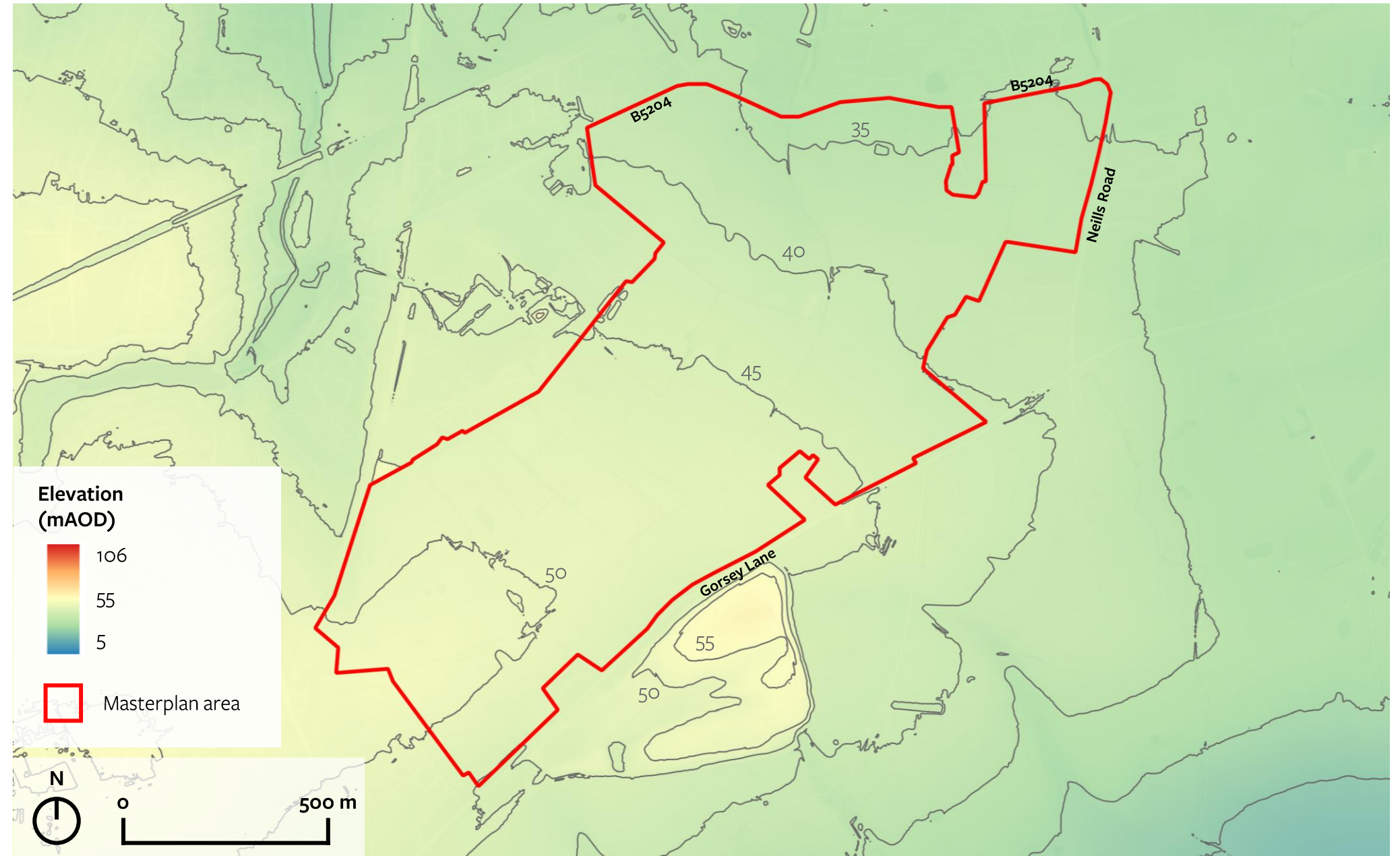
3 / Environmental and social context

Topography

- The site's longest extension is 2.25 km, with its elevation falling from SW to NE.
- Levels vary from 52m (AOD) at the highest point and 34m (AOD) at the lowest point.
- The topography of the wider region, shown below, provides wider context on the drop in elevation from the SW to NE, towards the valley shown in blue as the lowest point.



Topography of the BFGV site within the wider area
(Source: Environment Agency)

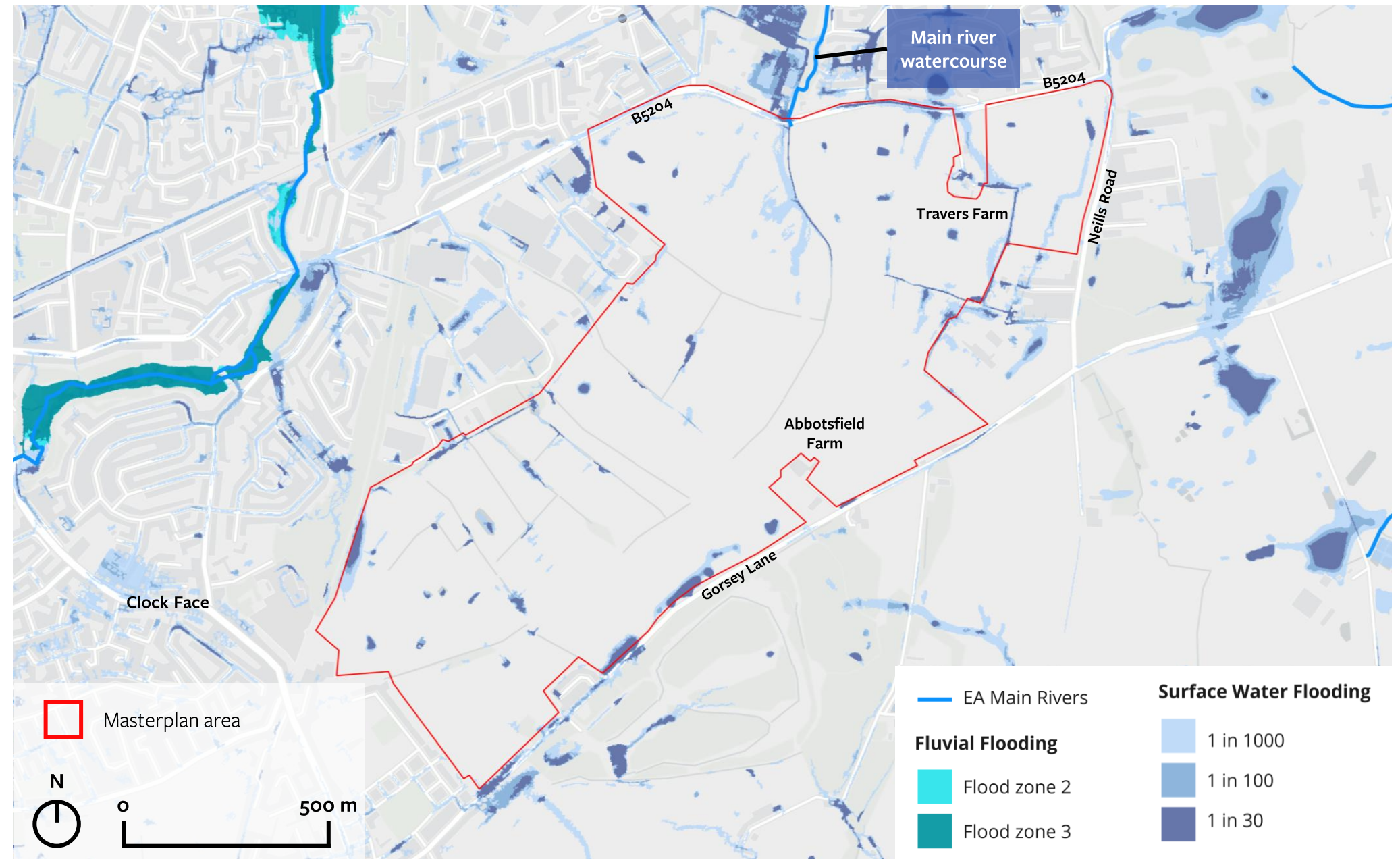


Topography of the BFGV site (Source: Environment Agency)

3 / Environmental and social context

Flood risk

- There are pockets of surface water flood risk (from rainfall) within the site.
- The greatest surface water flood risk is on roads that bound the site, particularly at the southern boundary along Gorsey Lane.
- There is a main river watercourse present on northern boundary of the site.
- **With high surface water flood risk on the surrounding roads, on-site attenuation should be maximised to reduce overloading local flood infrastructure.**
- **For a detailed assessment of the flood risk at Bold Forest, see SLR's Flood Risk Screening report.**

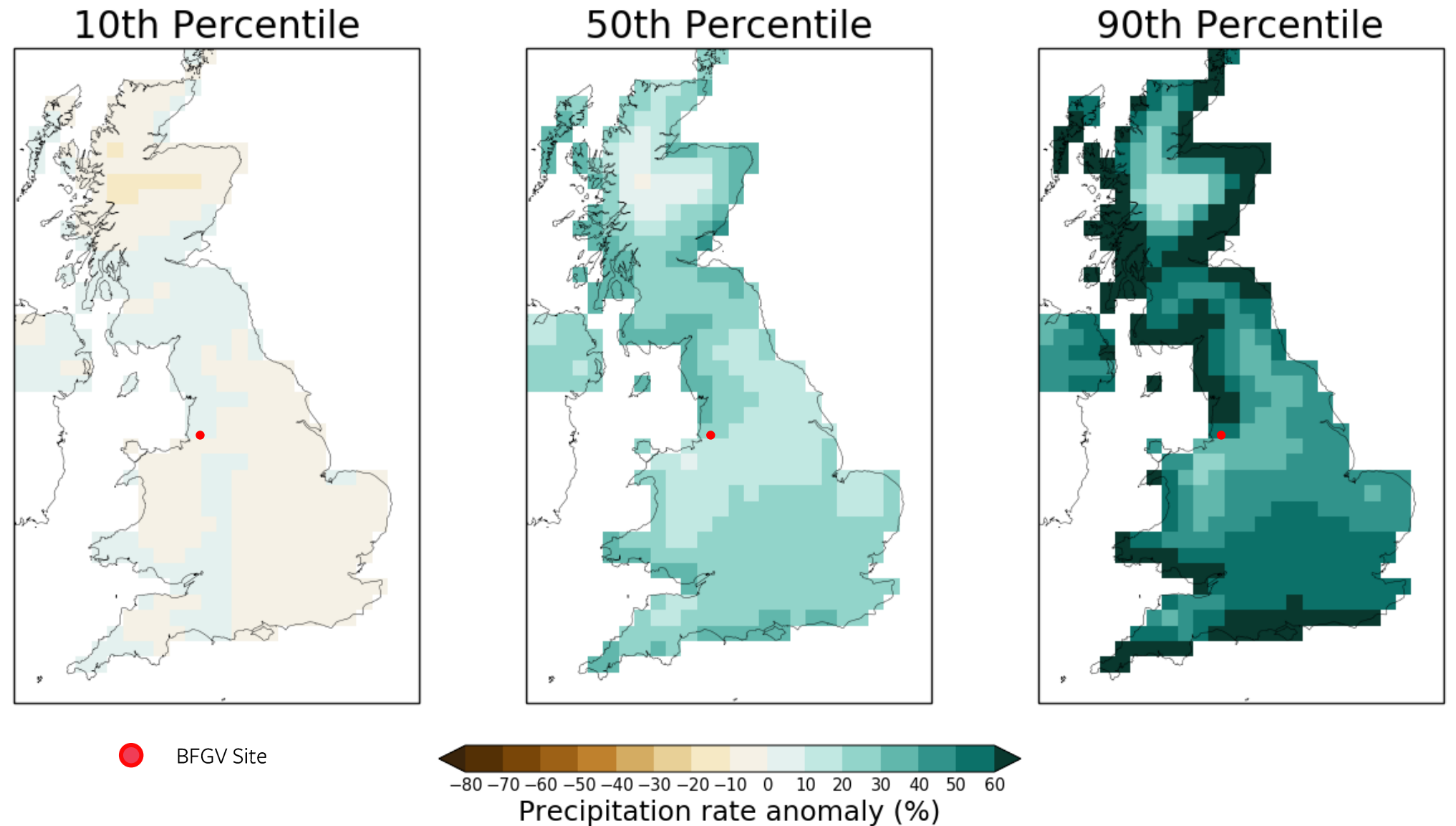


Map of fluvial (rivers) and surface water (rainfall) flood risk across the masterplan area (Source: Environment Agency)

3 / Environmental and social context

Future rainfall

- The maps opposite show projections by the Met Office for the percentage precipitation rate anomaly across the UK using the scenario RCP 8.5 (a climate change scenario that assumes high greenhouse gas emissions and a lack of action to reduce them) across three percentile of likelihood.
- Rainfall over the site may increase by up to 50% towards the end of this century.
- Such an increase in rainfall would exacerbate the risk of surface water flooding across the site and the surrounding area.
- **This reinforces the necessity of on-site attenuation, the prioritisation of soft landscaping, SuDs, and the opportunity to harvest rainfall.**

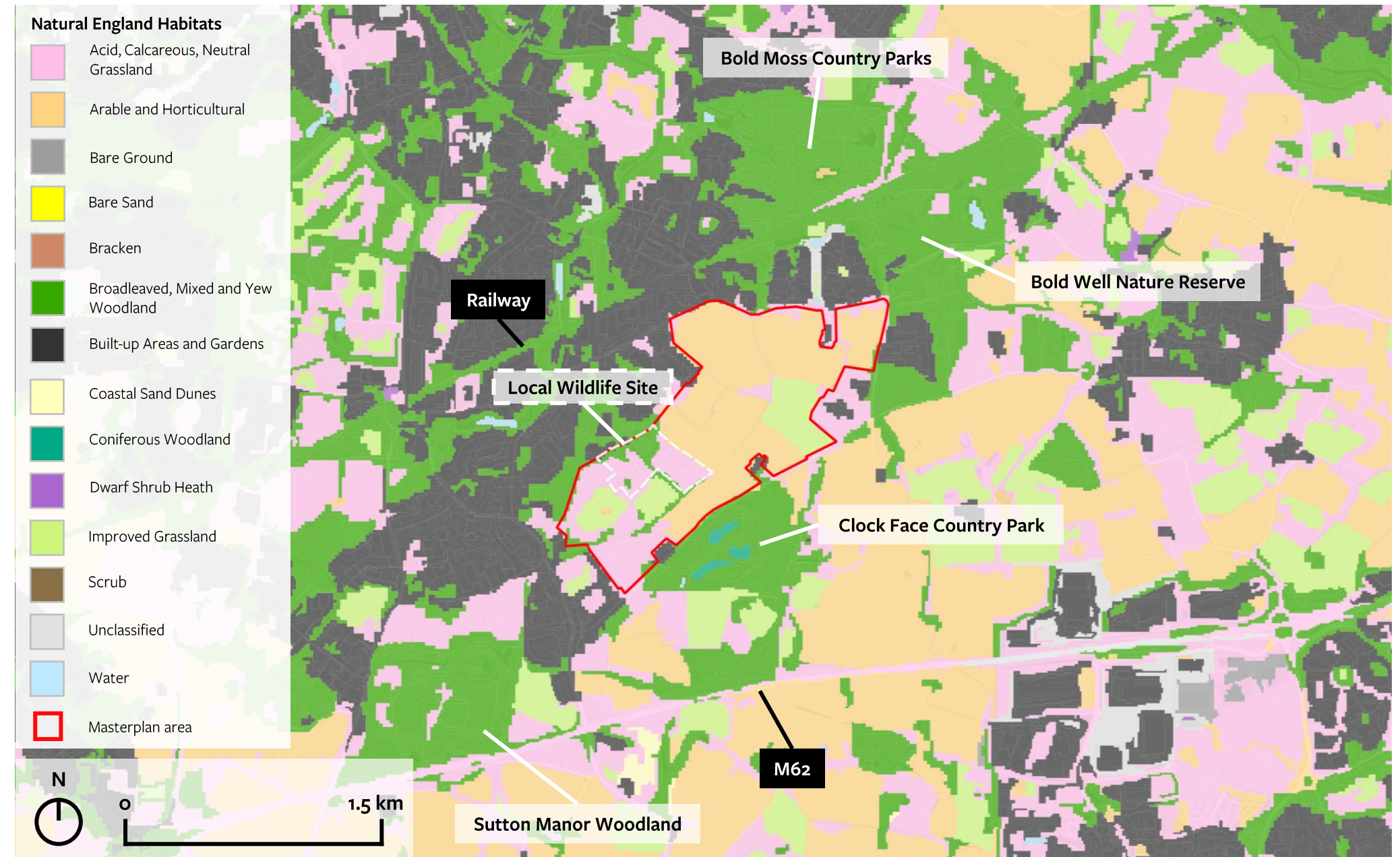


Seasonal average precipitation anomaly for Dec-Feb in years 2080-2098 in the UK using baseline 1981-2000 and scenario RCP 8.5 (Source: Met Office – UKCP)

3 / Environmental and social context

Natural environment

- Map of habitats across the masterplan show that there is woodland within the site, mostly contained within the Local Wildlife Site.
- There are multiple nature reserves and country parks adjacent to and nearby the masterplan area.
- The railway and the M62 to the north and south of the site act as potential severances for local wildlife and wider natural networks.
- **The BFGV site provides a clear opportunity to connect the habitats of Clock Face and Bold Moss County Parks, acting as a stepping stone to boost ecological corridors.**
- Further ecological studies will be beneficial to best integrate nature for health and wellbeing as well as biodiversity enhancements.
- **SLR have conducted a baseline review of the ecological data. For more information see their Ecology Baseline Briefing Note.**

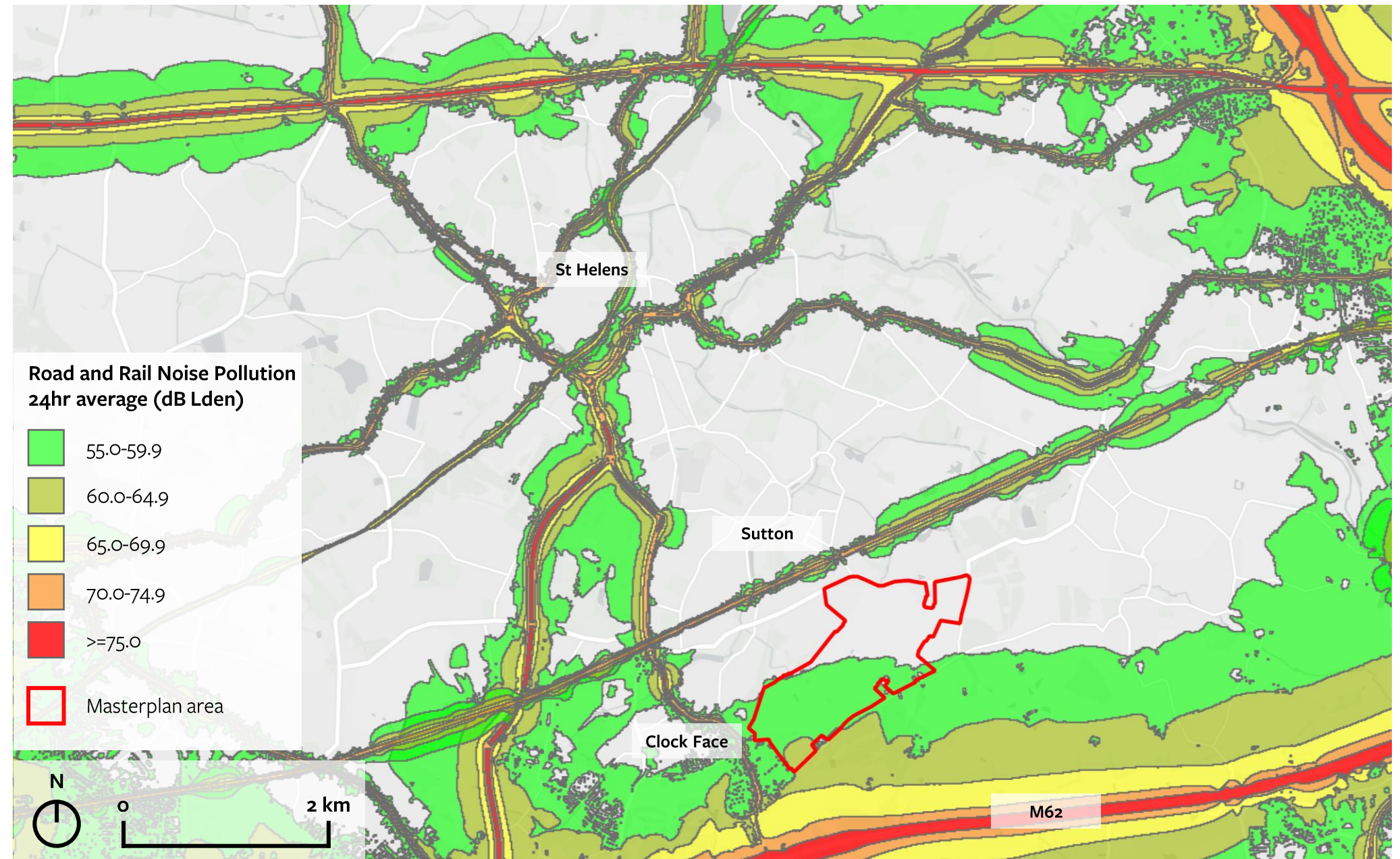


Habitats present across the site area and beyond (Source: Natural England)

3 / Environmental and social context

Noise pollution (road and rail)

- The southern portion of the site is exposed to levels of noise pollution above 55 dB Lden.
- It is important to note that the adjacent diagram shows the masterplan area without any development, once structures are built the spread of noise pollution is likely to change.
- **For more detail on noise pollution see the Feasibility Stage Noise Risk Assessment produced by SLR.**

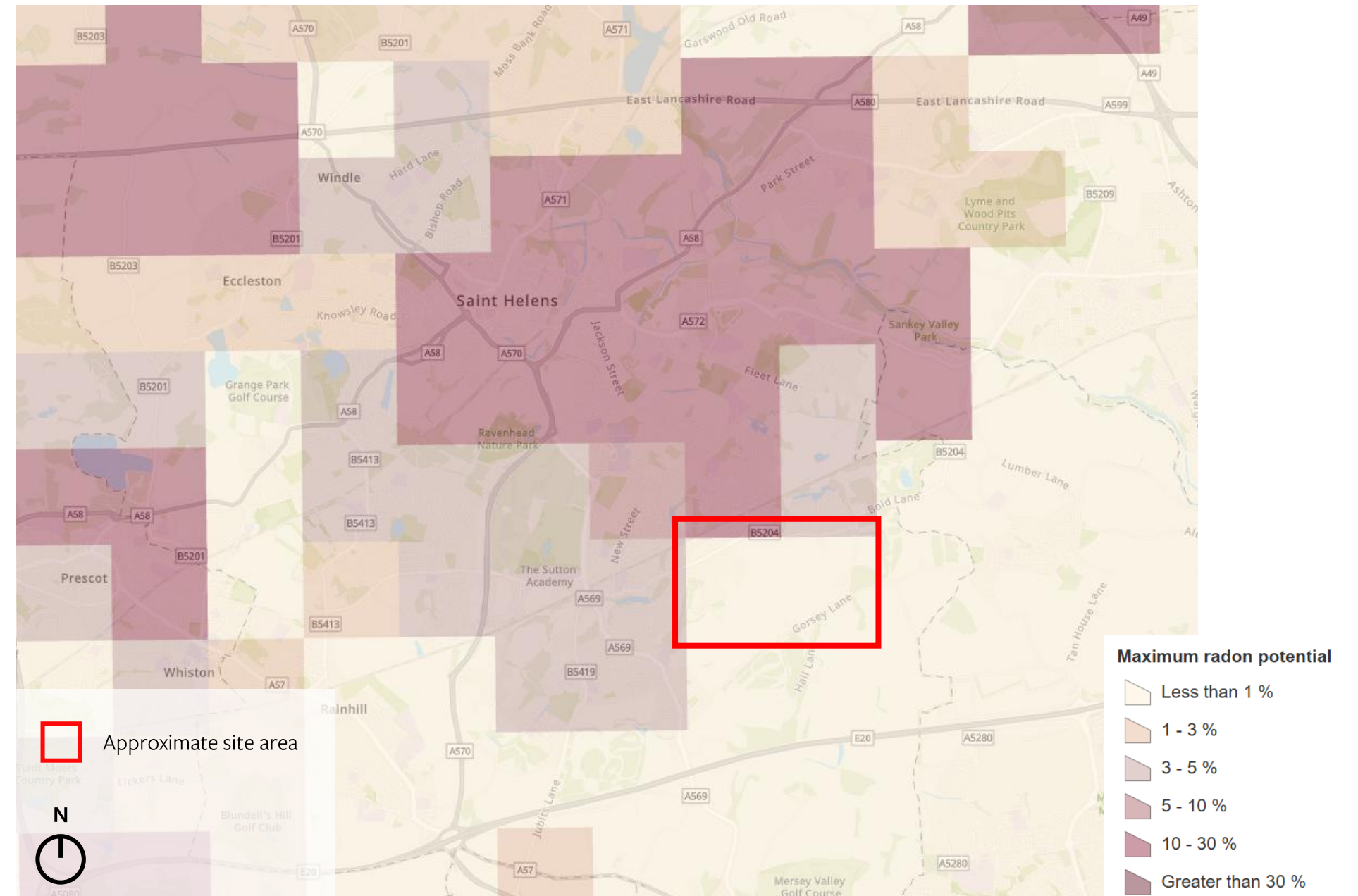


Noise pollution of the wider St Helens area including the site.

3 / Environmental and social context

Radon

- The BFGV site might present low levels of radon overall.
- Most of the site has a maximum radon potential of <1%, the lowest possible score.
- The maximum radon potential of the site is 10-30% in the very north along the B5204.
- The far western portion of the site has a maximum potential of 3-5%.
- **Areas with high levels of radon potential may need to avoid basements and include mitigation measures in the new construction.**

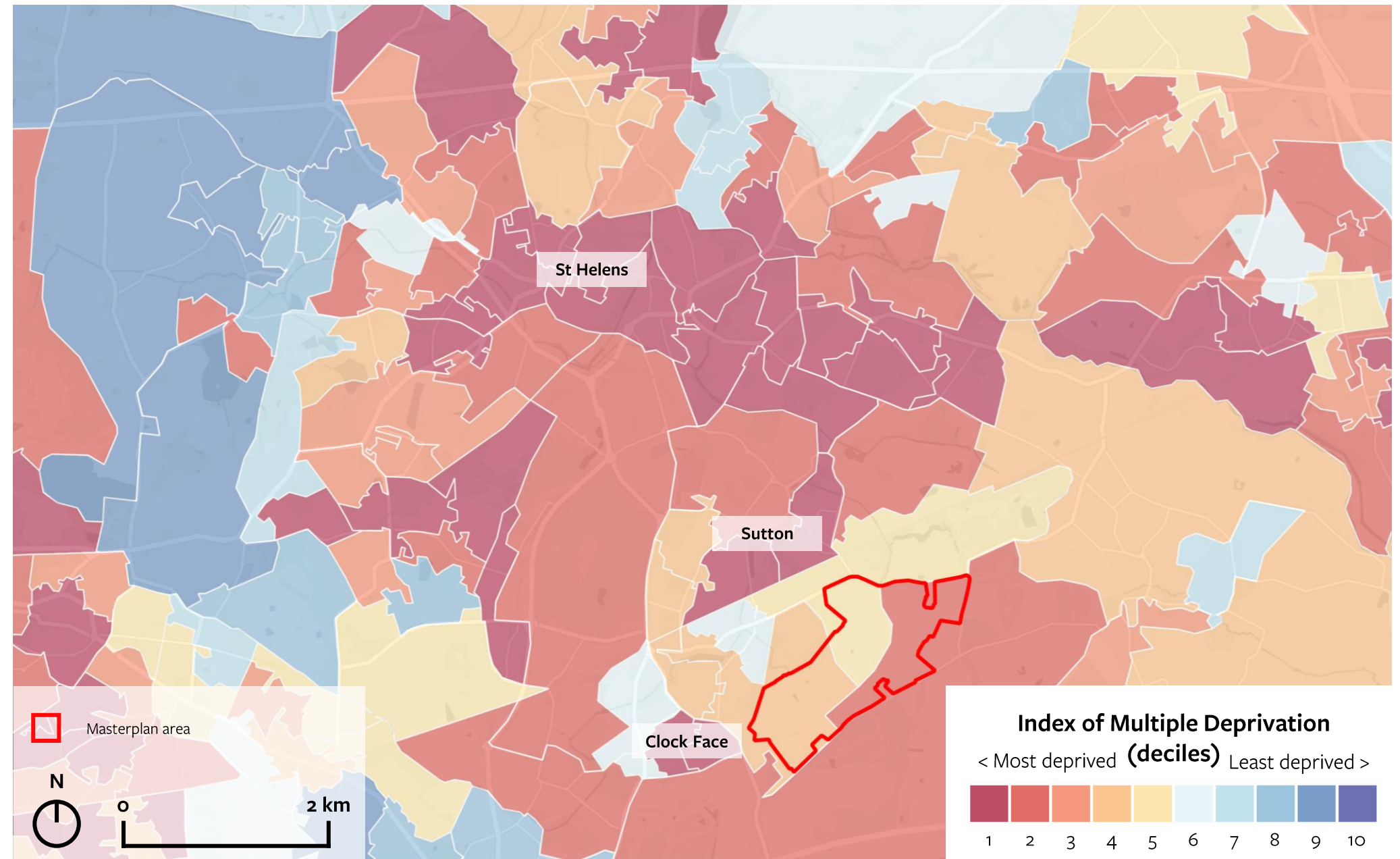


Radon potential map: BFGV site and surrounding area. The site predominantly lies within a low-risk zone (<1%), while elevated levels are found in St Helens (10-30%) and moderate levels in Sutton to the east (3-5%) (Source: UKradon)

3 / Environmental and social context

Local deprivation

- There are high levels of deprivation in the surrounding area, as per the Indices of Multiple Deprivation (IMD) illustrated opposite.
- Large areas of St Helens and Clock Face (the latter being just beyond the masterplan boundary) fall into the most deprived decile across the UK.
- When examining the seven indicators used to calculate the Index of Multiple Deprivation (IMD), the Lower Super Output Areas (LSOAs) in and around the site perform worse than average on four key measures: income, education, employment, and crime.
- **The BFGV masterplan should ensure the new development incorporates features to address local needs and promotes integration with the existing community.**



Indices of multiple deprivation of LSOAs covering the surrounding area of St Helens (Source: Ministry of Housing, Communities and Local Government)

4 / Utilities and energy

4 / Utilities and energy

Summary

Introduction

This section summarises the baseline of utility assets within and around the BFGV site. It is informed by a utilities search of the masterplan area carried out by Groundwise in December 2024 which identified the existing assets within the site. The survey stayed within the site boundary and not across adjacent roads.

This section covers the following utilities and their relationship to the BFGV site:

- Electricity
- Gas
- Surface water sewers
- Foul water sewers
- Communications
- Abandoned assets
- Hydrogen networks

On each page, implications for the BFGV site are **highlighted in bold**.

Key findings

- The local energy network operator (SP Energy Networks) projects a shortfall in demand headroom for the area by 2050.
- Two overhead extra high voltage (132kV) pylon mounted transmission lines are present over the site as well as buried and overhead high and low voltage cables.
- There are limited existing gas, communications and surface or foul water sewer assets within the site.
- There could be potential to use nearby disused mineshafts or underlying aquifers as heat sources for a district heat network to serve the site.
- Cadent’s Hynet hydrogen pipeline is planned to pass to the west of the site, beyond Clock Face.

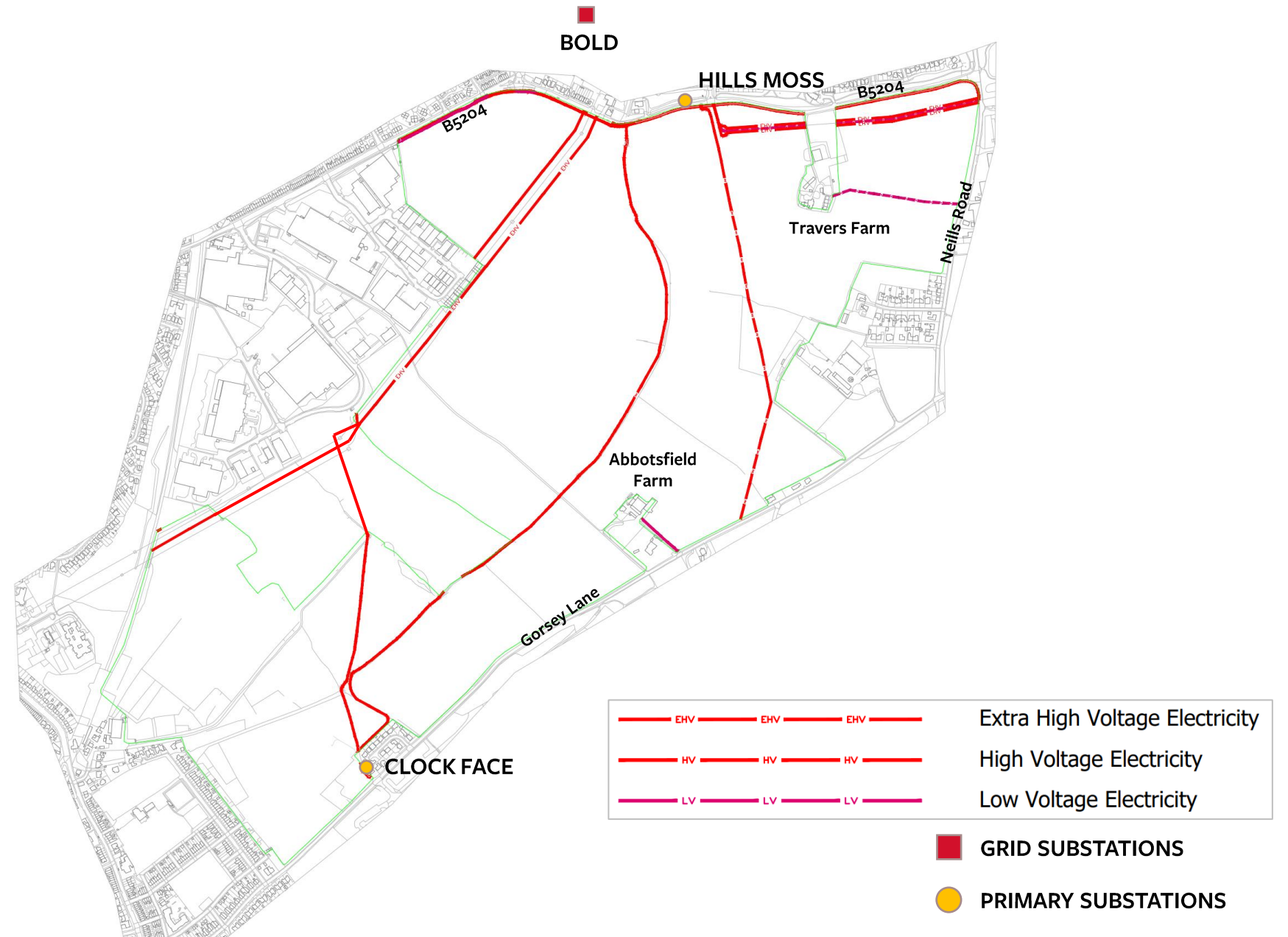
Implications

- Further engagement with SP Energy Networks (SPEN) is required to understand future electricity capacity and necessary upgrades of existing substations, or whether a new substation would be required to facilitate development.
- Engagement with utility companies will be needed regarding potential diversion of any electrical assets, particularly the overhead transmission lines.
- If overhead transmission lines must remain in place there will be easement requirements and constraints regarding swing clearances for permitted development.
- Apart from electricity, other utility assets within the red-line boundary are limited to small incursions which may require diversions or easements depending on development plots.
- Additional connections to and reinforcement of the surface water sewer network is likely required given the scale of the proposed development and the existing surface water flood risk.

4 / Utilities and energy

Electricity – Summary

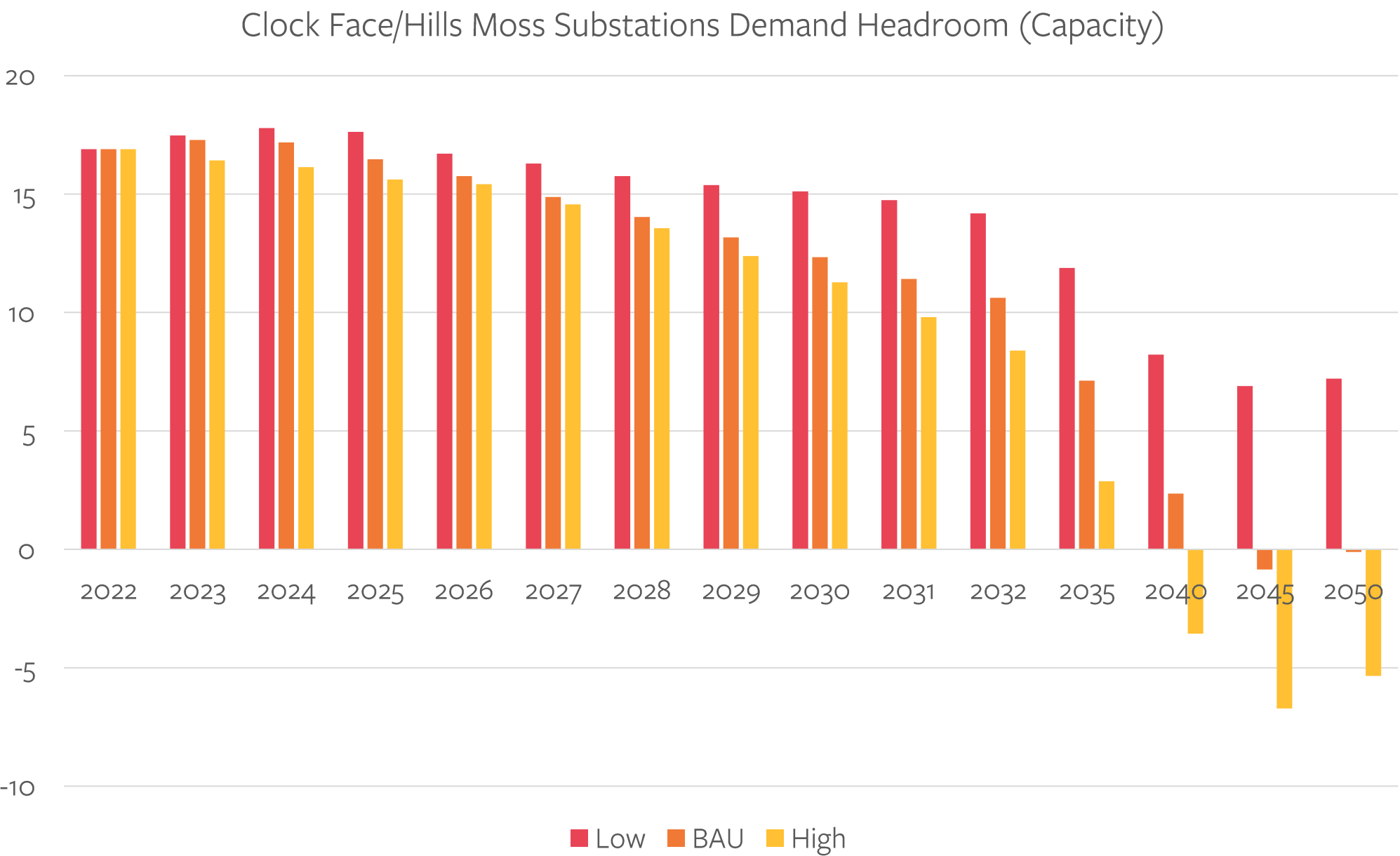
- Electricity to residential and commercial properties in the region is supplied by SP Energy Networks (SPEN).
- While not the area's energy supplier, Electricity North West (ENWL) have assets within the site, namely the extra high voltage overhead cables in the northeast of the site.
- The site itself is not currently developed or formally connected to the electrical network at scale.
- Electrical asset layouts as per the latest utilities records are shown in red and purple on the plan opposite and their properties and locations are summarised on the following pages.
- **Connection and capacity to the electricity network for BFGV will need to be discussed with SPEN. This will include defining the proposed peak demand and any required reinforcement works, which is likely required given the scale of the proposed development. Diversion and/or undergrounding of overhead cables will also need to be discussed with both SPEN and ENWL.**



4 / Utilities and energy

Electricity – Substations

- There are two primary substations that border the site, Hills Moss and Clock Face. The grid substation that both connect to, Bold, is located to the north of the site. All are owned by SPEN.
- SPEN’s forecasts for the primary substations (see graph) predict a future shortfall in demand capacity for business-as-usual and high development scenarios.
- While there is no capacity to feed generated electricity (e.g. from renewables) back into the grid at the substation level, there is capacity in the grid substation’s forecasts.
- Assuming 5 kVa per plot, a conservative estimate for the final demand of BFGV would be around 12-15 MW.
- **Further engagement with SPEN will be required to determine their plans for upgrading the network. There may be a requirement for a new substation or upgrades to the existing ones to service the potential development.**

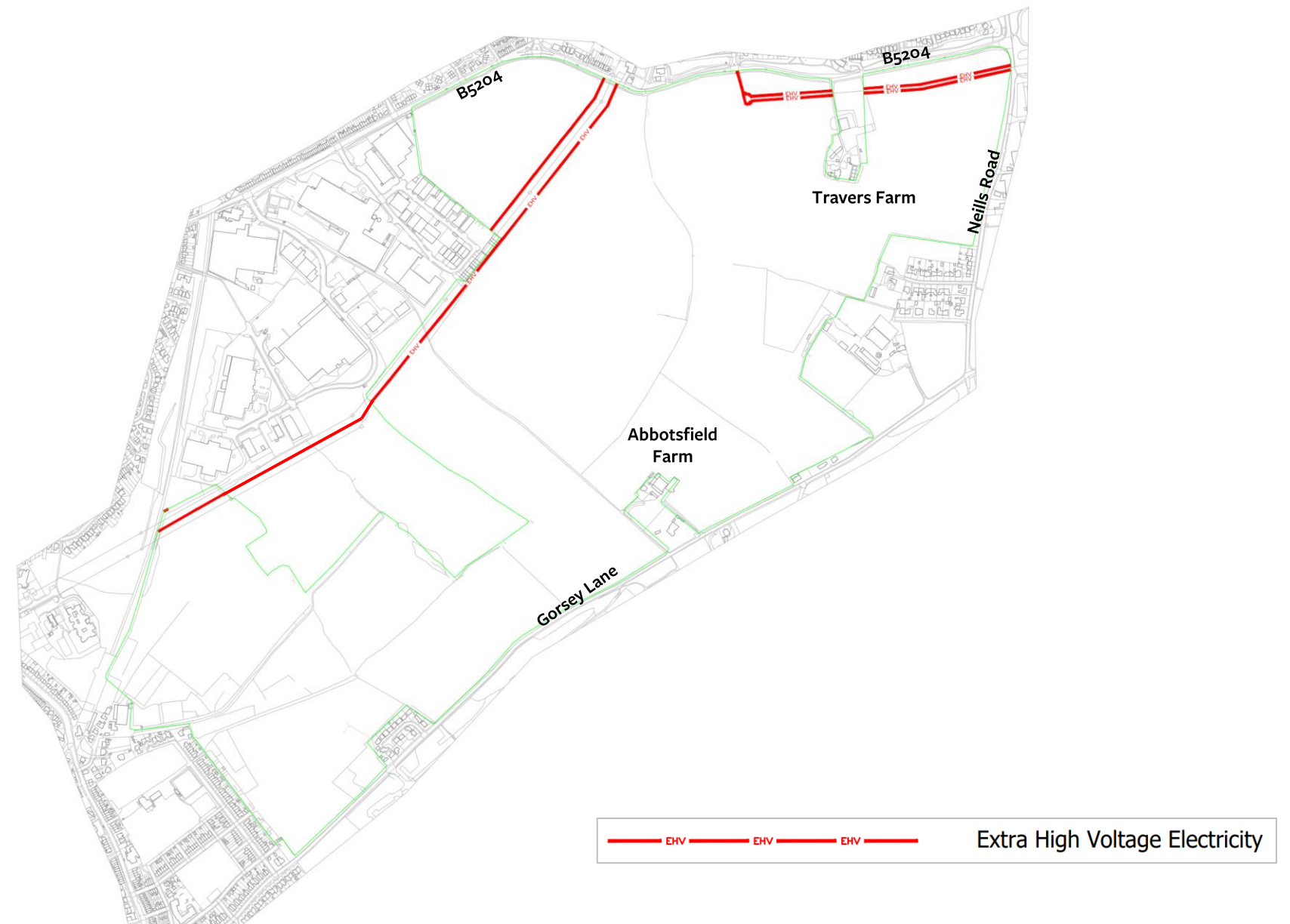


Demand headroom forecast of the two local primary substations for low, business-as-usual (BAU), and high development scenarios (Source: SP Energy Network, Network Scenario Headroom Report SPM)

4 / Utilities and energy

Electricity – Overhead transmission lines

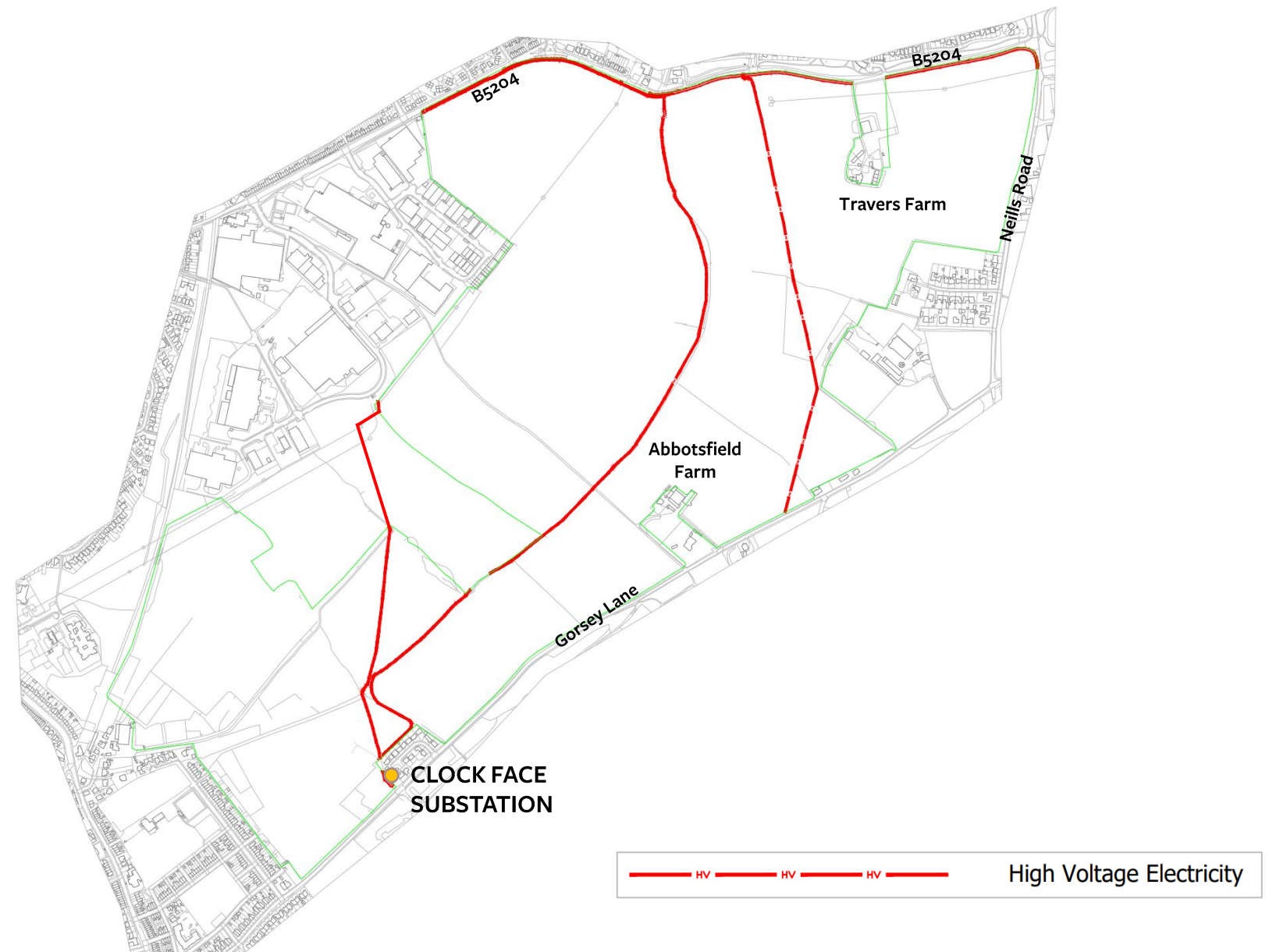
- Two extra high voltage (132kV) transmission lines cross the site.
- The first line, located in the northeast and owned by ENWL, carries overhead cables mounted on pylons. These cables terminate at a pylon west of Travers' Farm, where they transition underground and continue northward toward Travers' Entry.
- The second line, owned by SPEN, consists of overhead cables mounted on pylons and crosses the western portion of the site, running from the northern boundary toward Clock Face.
- Both transmission lines are marked in red on the plan opposite.
- **If overhead transmission lines must remain in place there will be easement requirements and constraints regarding swing clearances for permitted development.**



4 / Utilities and energy

Electricity – High voltage lines

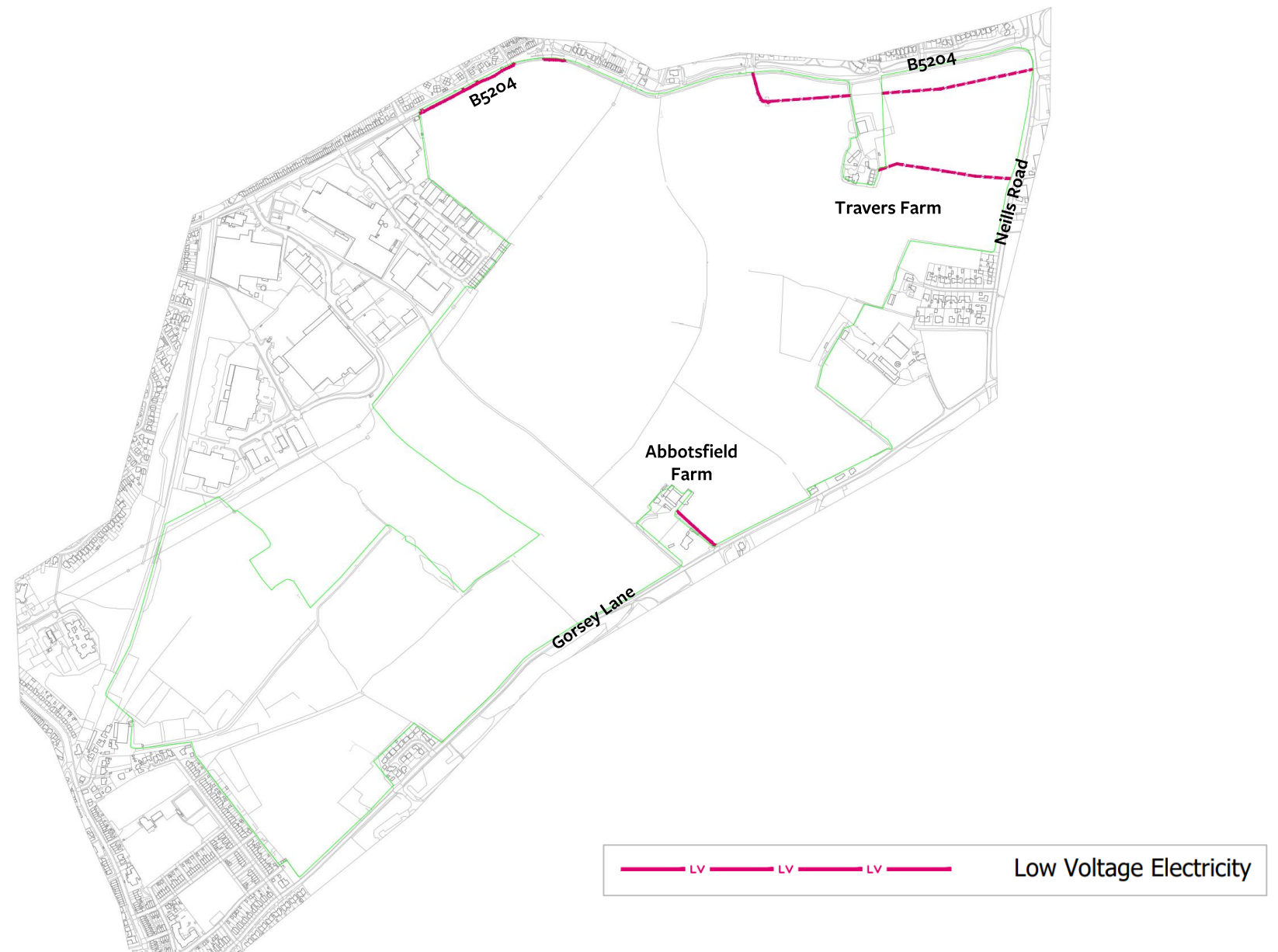
- This plan shows high voltage electrical cables in red, with underground cables represented as solid lines and overhead cables as dashed lines.
- Two underground high voltage cable routes originate from the Clock Face Substation and travel north. One set of 33kV cables runs along the centre of the site to the northern boundary, while an 11kV cable passes through the wildlife site to the northwestern boundary.
- Additionally, overhead high voltage cables (33kV) mounted on poles travel from the northern boundary southward, exiting the site east of Abbotsfield Farm.
- The solid lines along the B5204 are underground 11kV cables located beneath the pavement.
- All lines are owned by SPEN.



4 / Utilities and energy

Electricity – Low voltage lines

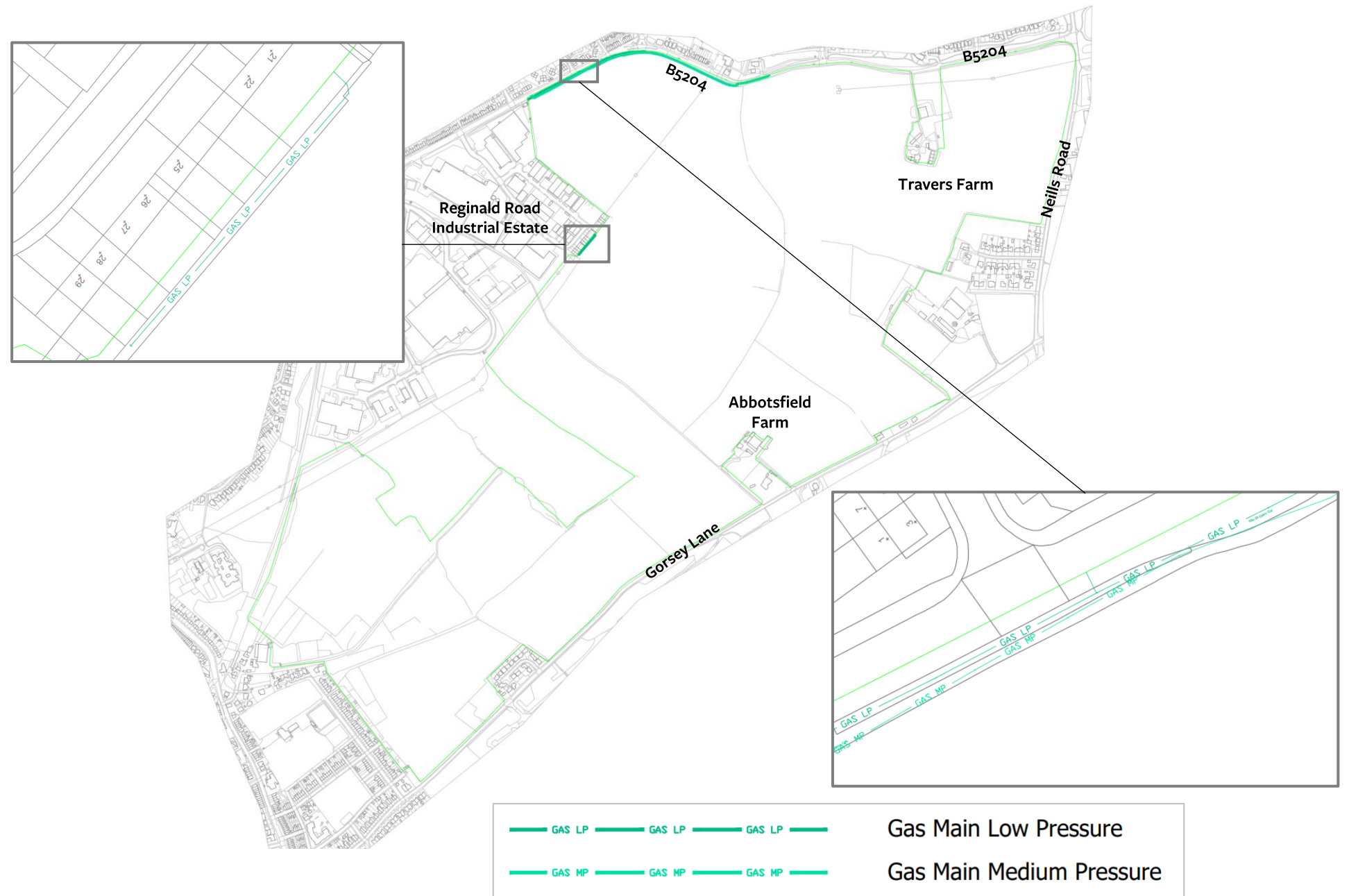
- This plan shows low voltage electrical cables in purple, with underground cables represented as solid lines and overhead cables as dashed lines.
- Three sections of low voltage cables are present within the site.
- The first section transitions from overhead to underground cables, beginning with overhead lines mounted on transmission pylons in the site's northwest. These overhead cables terminate at a pylon west of Travers' Farm, where they continue northward underground toward the B5204.
- Overhead cables run from Neills Road to Travers Farm.
- An underground cable extends from Gorsey Lane to Abbotsfield Farm.



4 / Utilities and energy

Gas

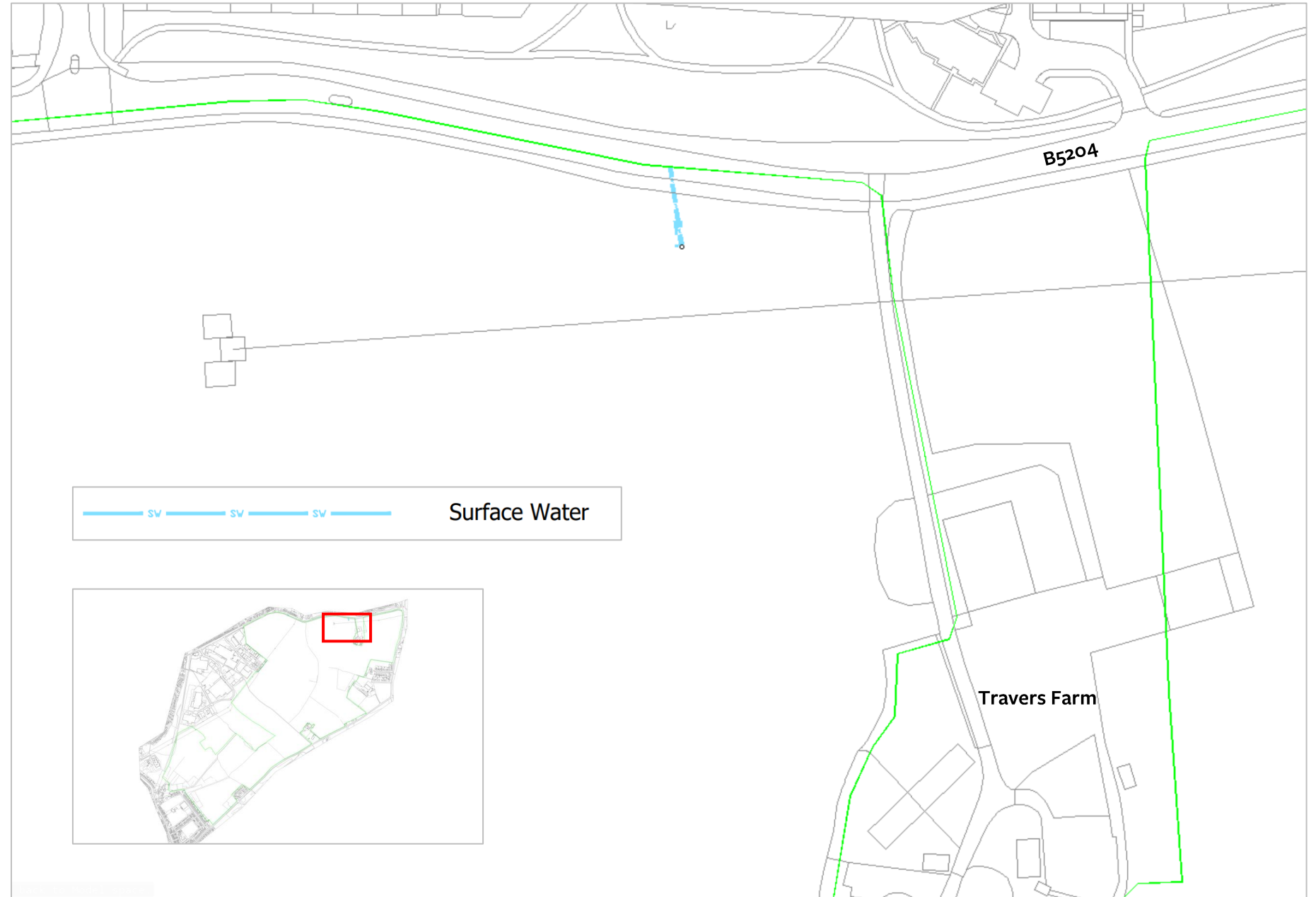
- Cadent and ESP provide gas to the surrounding area and therefore have assets in the vicinity of the BFGV site.
- Gas assets within the site area are shown in green on the plan opposite and are as follows:
 - Low pressure gas main to the southeast of the Reginald Road Industrial Estate
 - Low and high pressure gas mains along all the sites bounding roads including the B5204
- **It is assumed that no new gas connections will be required for the proposed development, however any protection and diversion of existing gas assets will need to be discussed with Cadent Gas.**



4 / Utilities and energy

Surface water sewers

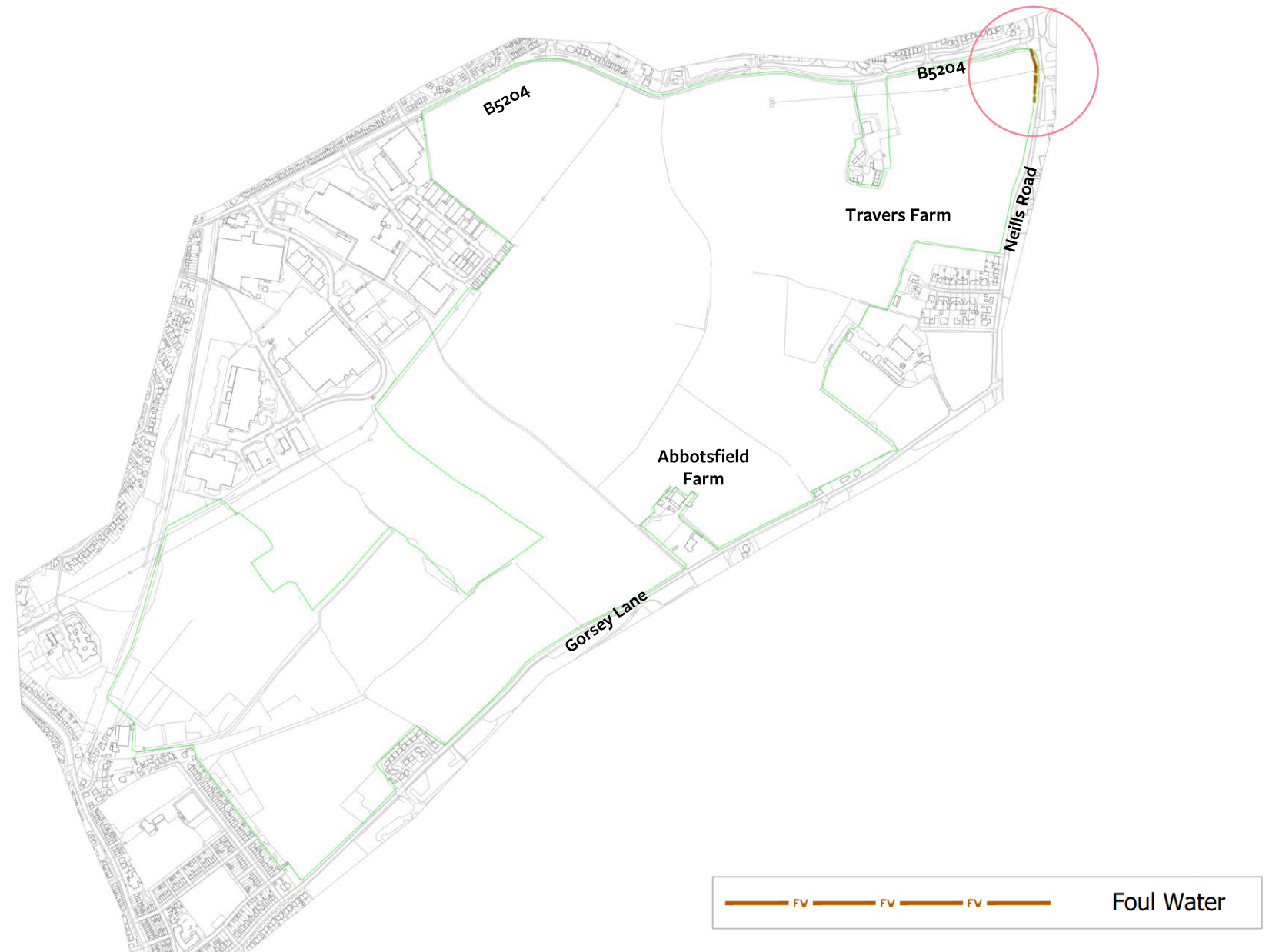
- The surface sewers are owned and maintained by United Utilities.
- Most of the Site is not currently developed or formally drained. Sewer records have been acquired from United Utilities that show the location of surface water sewers in the vicinity of the site.
- Surface water sewers within the site area are shown in blue on the plan opposite and are as follows:
 - Private surface water sewer to the west of Travers Farm
- **Any connection and requisitions of surface water sewers and existing balancing ponds for BFGV will need to be discussed with United Utilities. This will include defining existing capacity as well as any required additional connections and reinforcement works, which is likely required given the scale of the proposed development and the existing surface water flood risk.**



4 / Utilities and energy

Foul water sewers

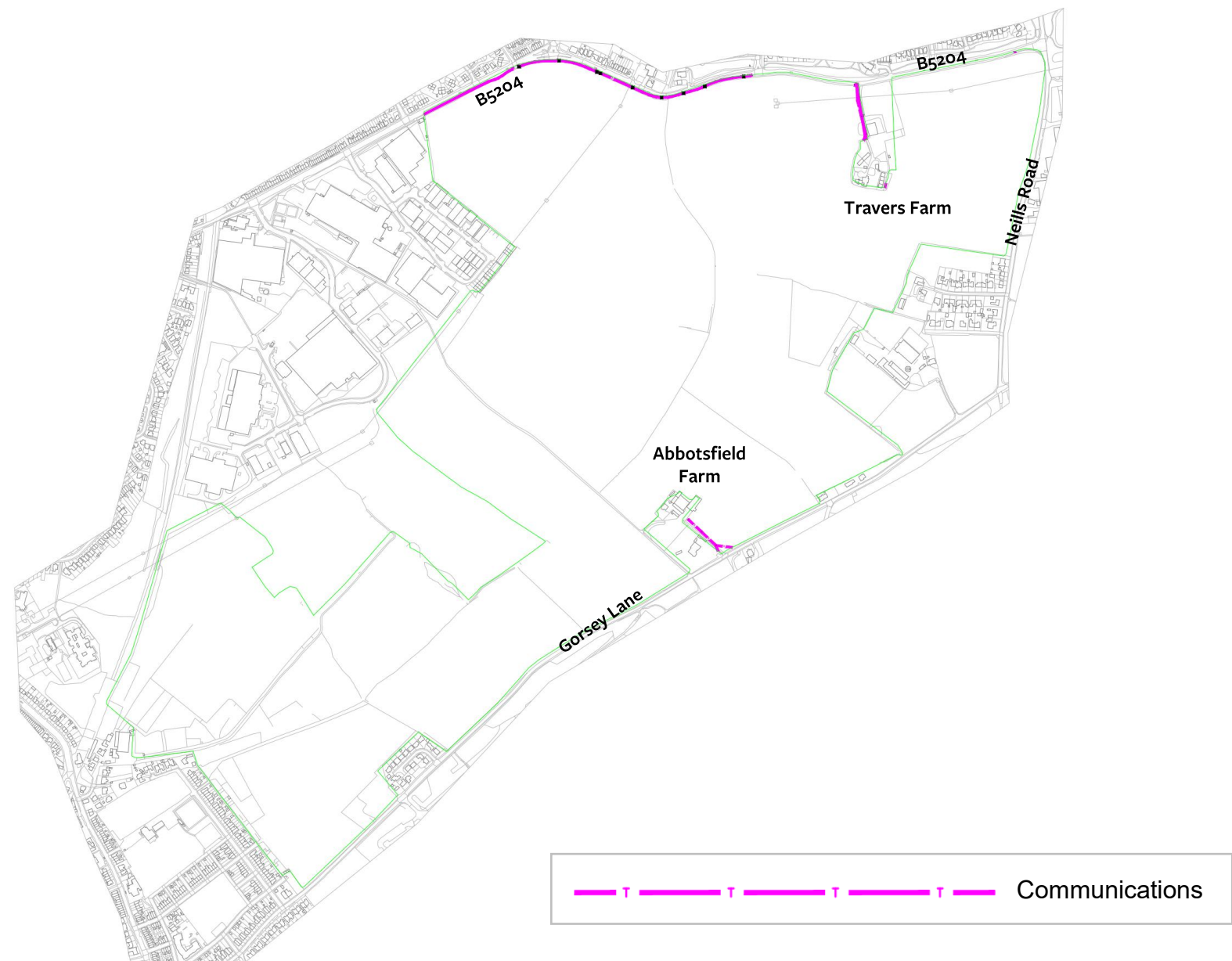
- The foul water and combined sewers around the site are owned and maintained by United Utilities.
- Foul water sewers within the site area are shown in brown on the plan opposite and are as follows:
 - 525mm overflow sewer cutting across the northeastern corner of the site from Neills Road to the B5204
- Apart from this one incursion the Site is currently largely undeveloped and not formally drained.
- **Connection to the foul water sewers for BFGV will need to be discussed with United Utilities. This will include defining existing and proposed capacity and any required reinforcing, which is likely required given the scale of the proposed development.**



4 / Utilities and energy

Communications

- Communications and fibre is provided to the area by BT Openreach and City Fibre.
- Communication assets within the site area are shown in magenta on the plan opposite and are as follows:
 - Underground (solid line) connection to the west of Travers Farm
 - Overhead (dashed line) connection to the west of Travers Farm
 - Overhead connection to the east of Abbotsfield Farm
- **Connection to the communications network for BFGV will need to be discussed with BT Openreach and City Fibre. Overhead (pole mounted) connections may need to be diverted and/or undergrounded. It is assumed that the development will require full fibre connectivity.**



4 / Utilities and energy

Abandoned assets

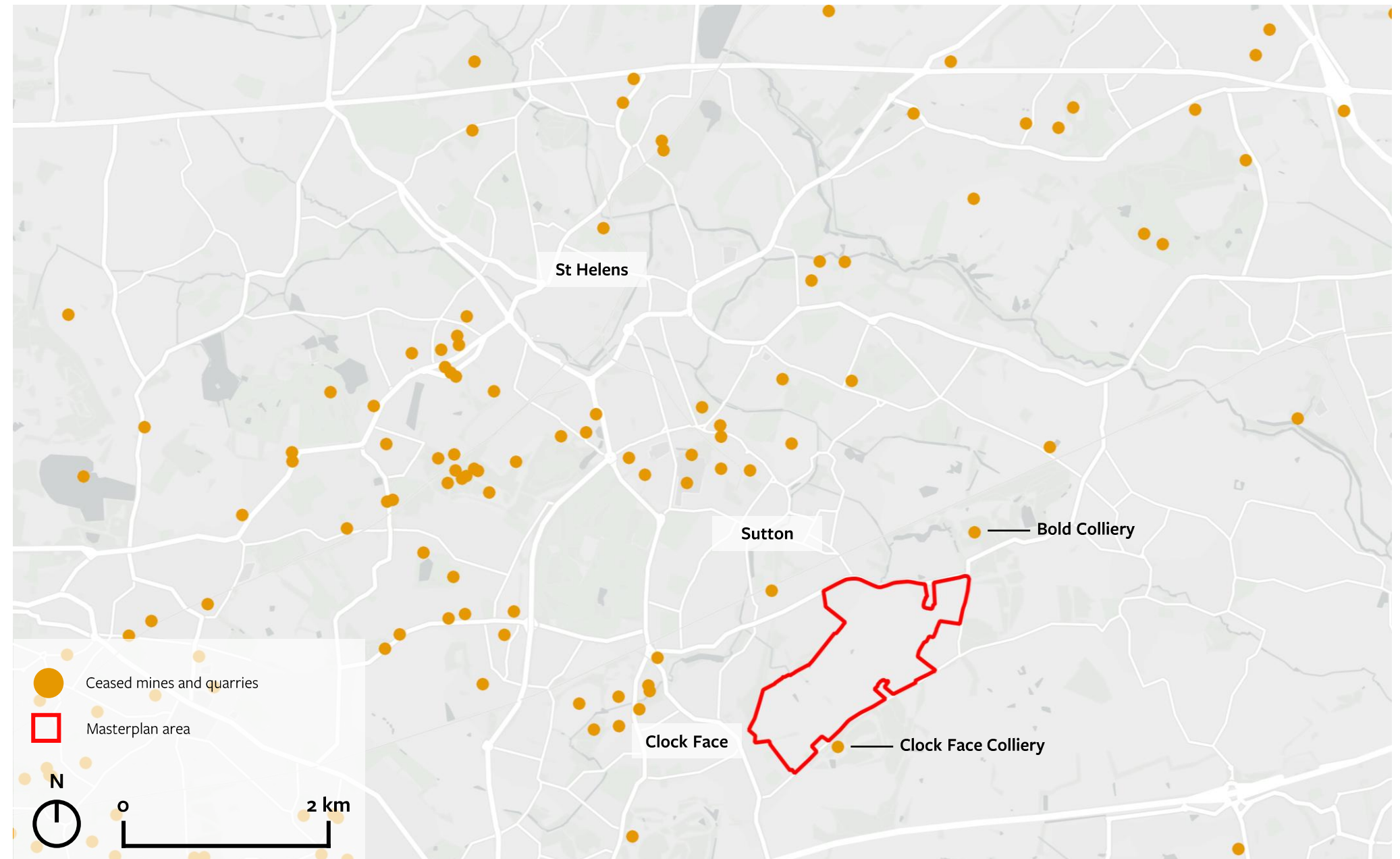
- Abandoned assets within the site area are shown opposite and are as follows:
 - Abandoned water main entering the site from the industrial park and travelling south
 - Abandoned electricity asset in the north of the site off Travers Entry
 - Abandoned electricity asset above the Clock Face substation
- While noted as abandoned, these assets may still be in use. Care should be given to the electricity cable above the Clock Face substation (3. on the plan opposite) which may still be charged.
- More detailed surveys to determine the sizes, exact locations, and ownership of abandoned assets may be required.**



4 / Utilities and energy

Potential heat network heat sources

- Local disused mine shafts could be used as a low carbon heat source for a district heat network (DHN). There is precedent for using flooded mineshafts as heat sources for DHNs, most notably in [Gateshead](#).
- St Helens Borough Council have secured funding for a DHN in the town centre. However, this is too far from the site to consider connection.
- Other potential sources include the two aquifers which lie beneath the site via boreholes, the Sankey and Glaze Carboniferous aquifer and the Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone aquifer.
- The suitability of the BFGV masterplan for a DHN will be assessed in future stages of the masterplan development.
- **Each heat source option would require further feasibility studies as well as engagement with the relevant statutory bodies. The necessary energy centre would also have spatial implications on the site.**

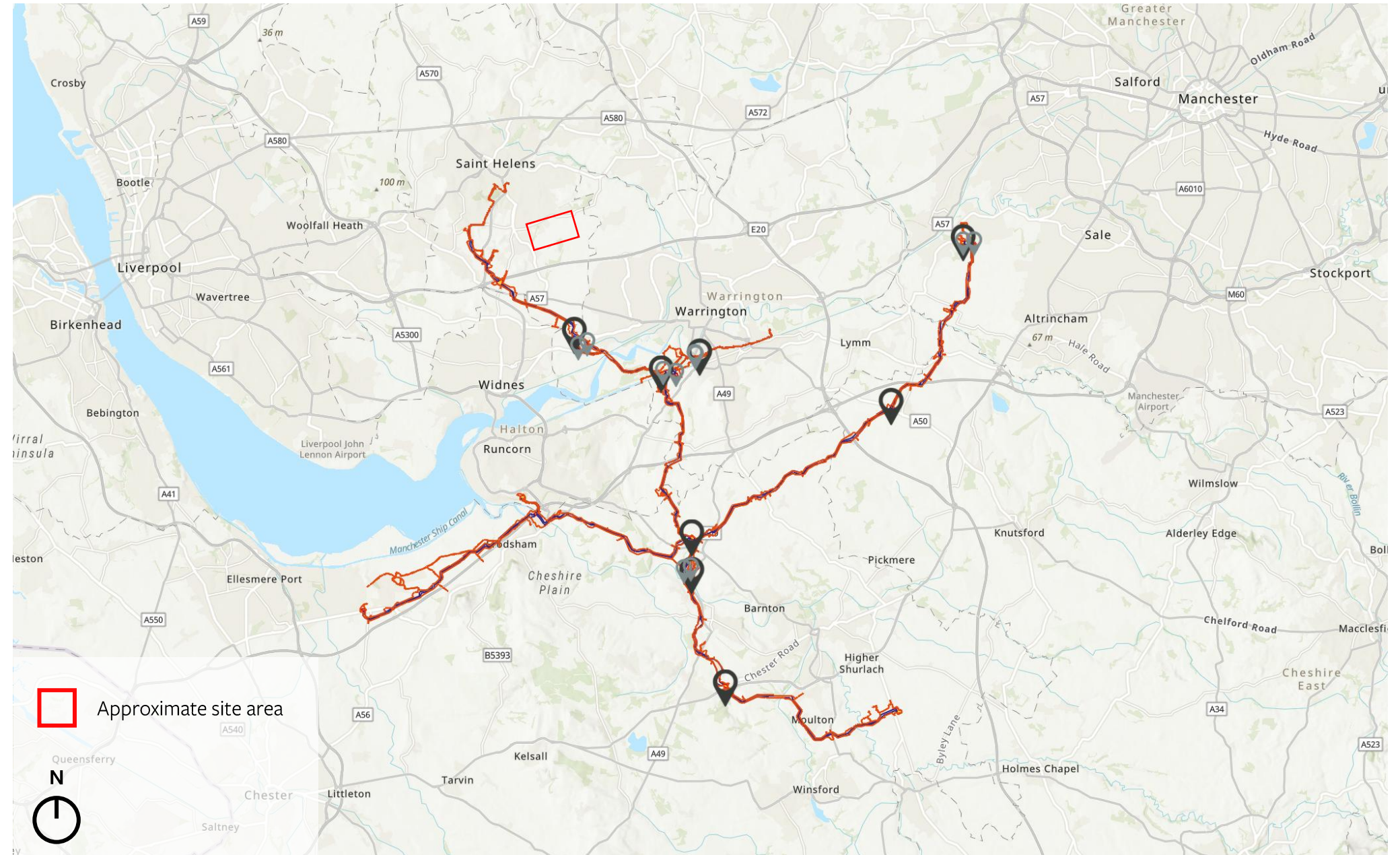


Locations of ceased mines and quarries in the wider area around the BFGV masterplan area (Source: British Geographic Survey)

4 / Utilities and energy

Hydrogen networks

- Cadent, the UK's largest gas distribution network, are currently developing the Hydrogen decarbonisation Hydrogen Pipeline (Hynet).
- Current plans for Hynet show it passing to the west of the site, beyond Clock Face.
- The primary goal of Hynet is to decarbonise industry and electricity generation. Early phases up to 2030 focus on industrial uses with later stages potentially supplying hydrogen to homes; the government has pledged to decide on whether hydrogen will be used to heat homes in 2026.
- Engaging Cadent will enable greater clarification on whether they plan to extend the Hynet Network towards the BFGV site.
- **Any future connection to Hynet would come from the southwest of the site and would be subject to feasibility studies.**



Planned route of Cadent's HyNet hydrogen network (Source: Cadent)

5 / Summary of implications

5 / Summary of implications

Summary of findings

Overview of this section

This section summarises the findings of the baseline study, their implications to the masterplan development, and proposed next steps.

Policy

- Current local policy refers to outdated levels for Code for Sustainable Homes (CSH) which would be superseded by Part L 2021 and the emerging Future Homes and Building Standards.
- Policy requirements does not set ambition beyond part L carbon emissions savings. This conflicts with the St Helen's climate emergency plan's for net zero goals and desire for *“highest possible sustainability goals with high percentages of renewable energy and heat”*.
- Industry is moving towards a standard approach for net zero, such as with the launch of the UK NZCBS pilot version. St Helens Borough Council officers voiced desire for an ambition beyond policy on this site, as discussed in the workshop on 10th December 2024.

Environmental and social

- Streets should be orientated taking into account the solar path (+/- 30 degrees off due south) where possible. Taller buildings (if any) should be located towards north to avoid overshadowing. Design could accommodate features in the public realm to shelter pedestrians from colder north-westerly prevailing winds.
- With high flood risk along surrounding roads and future rainfall predicted to increase, it will be crucial to attenuate as much water on-site as possible to avoid overloading local drainage systems.
- The BFGV site provides a clear opportunity to connect the habitats of Clock Face and Bold Moss County Parks, acting as a stepping stone to boost ecological corridors.
- The BFGV masterplan should ensure the new development incorporates features to address local needs, promotes integration with the existing community, and tackles inequality shown by the existing social deprivation indicators.

Utilities

- Further engagement with the local energy supplier, SPEN, is required to understand future electricity capacity and necessary upgrades of existing substations, or whether a new substation would be required to facilitate development.
- Engagement with SPEN and ENWL will be needed regarding potential diversion of any electrical assets, particularly the overhead transmission lines.
- If overhead transmission lines must remain in place there will be easement requirements and constraints regarding swing clearances for permitted development.
- Apart from electricity, other utility assets within the red-line boundary are limited to small incursions which may require diversions or easements depending on development plots.
- Additional connections to and reinforcement of the surface water sewer network is likely required given the scale of the proposed development and the existing surface water flood risk.

5 / Summary of implications

Next steps

- Consult utility providers to understand current capacity and any necessary upgrades, diversions and easements for the potential development.
- Ensure environmental conditions and their implications are considered in early design of masterplan layout, for example:
 - Using an off-axis street grid ($\pm 30^\circ$ off south) for better solar gain availability
 - Allowing space for a potential ecological route connecting Clock Face Country Park to ecological habitats to the north of the site
- Integrate the findings of the acoustic surveys into the site layout development and understand implications for ventilation and overheating risk.
- Explore the potential for smart energy (heat and/or electricity) sharing within and beyond the red line boundary.



The effect window orientation and building form can have on heating demand (Source: Mikhail Riches)

Thank you.

ben.l@usefulprojects.co.uk
gabriela.c@expedition.uk.com

usefulprojects.co.uk