



Land at Partridge Green

Utilities Appraisal Report

On behalf of **Croudace Homes**

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1 Introduction

1.1 Background

Stantec has been commissioned by Croudace Homes Ltd to prepare a Utilities Appraisal Report in support of an outline planning application (OPA) for the residential development known as Land at Partridge Green (LPG).

The Horsham District Council (HDC) require specific supporting information to be submitted as part of a planning application, including a Utilities/Services Strategy/Assessment. This is defined in the 'Development Management Local Information Requirements for Validation' as being *'Required for Major applications proposing developments in excess of 100 dwellings or 10,000sq metres of new floor space. Should include details of the position and alignment of existing and proposed utility services, including gas, electricity, telecommunications, water supply, foul/surface water drainage.'* This report aims to provide this information to support the planning application for the development.

The proposed development, approximately 5.6 hectares in size, is located to the southeast of a village called Partridge Green in Horsham. The site is bound by the Bines Road (B2135) to the east and Lock Lane to the north.

The general topography of the site is a slope from the southeast of the site to the northwest of the site. The levels range from approximately 10m above Ordnance Survey Datum (AOD) down to 6.5m AOD. The land consists of agricultural land with 2 sparse rows of large trees running north to south across the site.

1.2 Site Proposals

The proposals are for a residential development, which will include 101 new dwellings.

1.3 Purpose of Report

This Utilities Appraisal Report outlines and assesses the utilities in relation to the proposed site and identifies the need for new utility infrastructure, potential upgrades / reinforcement works, or the need for further investigation/modelling.

The information set out in this report concerning services, plant or apparatus have been received from the relevant utility companies and is understood to be correct; Stantec cannot take responsibility for the accuracy of this information and no warranty is expressed or implied.

A Ground Penetrating Radar (GPR) Survey or similar is recommended ahead of any detailed design work to try to establish a more accurate representation of the utilities. Prior to any on-site works commencing, these utilities should be marked on the ground and trial pits will be considered in the event of uncertainty in locations.

No information is available in relation to "private" utility infrastructure that might be present on site. It is recommended that further investigations are carried out to determine the potential and location of any "private" infrastructure on site.

This report does not assess the implications of any development phasing.

2 Utility Providers

2.1 Statutory Undertakers Assets

The following table identifies the Statutory Undertakers that have been approached for record drawings and summarises the report presence of utility infrastructure in the vicinity of the site, along with the likely requirement for diversion or protection of any existing infrastructure.

Utility Medium	Statutory Undertaker	Existing Infrastructure On/Near Site	Diversionary Works Required	Enquiry Date
Electricity	UKPN	Yes	Yes	16/04/2024
Electricity	GTC (ENCL & IPNL)	No	No	16/04/2024
Gas	SGN	Yes	No	16/04/2024
Gas	GTC (IPL & QPL)	No	No	16/04/2024
Telecoms	Openreach	Yes	No	16/04/2024
Telecoms	Virgin Media	No	No	16/04/2024
Telecoms	Vodafone	No	No	16/04/2024
Telecoms	CityFibre	No	No	16/04/2024
Telecoms	Colt	No	No	16/04/2024
Telecoms	GTC (IFNL)	No	No	16/04/2024
Telecoms	Sky Telecommunications Services	No	No	16/04/2024
Telecoms	SOTA	No	No	16/04/2024
Telecoms	Verizon	No	No	16/04/2024
Telecoms	Lumen Technologies	No	No	16/04/2024
Telecoms	MBNL	No	No	16/04/2024
Potable Water	Southern Water	Yes	Yes	16/04/2024
Potable Water	GTC (IWNL)	No	No	16/04/2024
Foul Drainage	Southern Water	No, near site	No	16/04/2024

Table 2.1 Statutory Undertakers Assets Summary

It should be noted that utility infrastructure is often altered over time, and we therefore recommend that prior to undertaking any works on site updated utility records are requested if the existing records are older than 90 days.

3 Existing Utilities

3.1 Introduction

This section provides an overview of the existing utility infrastructure within and adjacent to the proposed site.

Existing Utility Infrastructure Constraints Plans (drawing no. 332611433-2701-001) has been prepared to show the extent of the existing utility infrastructure within the site and the surrounding area, this is included in **Appendix A**.

The Statutory Undertakers (SU) that have services within or near to the proposed development are discussed within the following sections. Asset records obtained from these Statutory Undertakers can be found in **Appendix B**.

3.2 Electricity

UK Power Networks (UKPN) are the Distribution Network Operator (DNO) for London, the Southeast and the East of England. DNOs are companies who are licensed to distribute electricity in Great Britain by Ofgem.

Asset records obtained from UKPN shows cables present within the proposed site boundary as well as within close proximity to the site.

There are 11kV overhead cables that runs through the site from north to south. A spur to the north of the 11kV main run, forks away and exits the site to the east and crosses Bines Road. This then passes underground into the verge on the eastern side of Bines Road and runs towards a substation. The 11kV substation is on the opposite side of Bines Road, south of Avalon Court. The substation transforms the 11kV into Low Voltage (LV) underground cables.

3.3 Gas

Asset records obtained from SGN shows pipes present within the proposed site boundary as well as within close proximity to the site.

A 24" high pressure (HP) gas main runs from Bines Road heading west into the site before making its way to the northern boundary.

SGN allow no mechanical excavations within certain distances from their assets, for a HP gas main there isn't a set requirement, instead, approval must be obtained from them ahead of any works taking place.

Low pressure gas mains run along the Bines Road serving the wider area.

3.4 Potable Water

Asset records received from Southern Water indicate that there are clean water mains located within the proposed site boundary and the surrounding area.

A 400mm diameter Trunk Main dissects the site from north to south, doglegging around Croucher Farm, with a 150mm spur orientated an east-west position towards Avalon Court.

Southern Water asset mapping indicates the presence of an abandoned 16-inch trunk main that is roughly perpendicular to the northern stretch of Trunk Main and the adjoining spur pipe,

seemingly connecting into the 6-inch water main located within the western verge of Bines Road.

The records also show a 100mm water main extending from east to west at the north of the site, which also connects into the 6-inch water main in the western verge of Bines Road.

3.5 Foul Water

Asset records from Southern Water shows there are no foul water pipes within the works boundary. A 150mm gravity foul sewer is located along the eastern side of the Bines Road.

3.6 Telecommunications

Asset location maps have been obtained from Openreach; the mapping indicates that Openreach assets are located within proximity of the site.

Openreach mapping indicates that assets are located along the western side of Bines Road. There is also a spur of Openreach assets that are located to the west of Bines Road in an east-west orientation in a location adjoining the northern boundary of the site along Lock Lane.

There are no Virgin Media assets shown as located within the vicinity of the site.

3.7 Uncharted Utilities

It should always be considered that uncharted utilities may be present and may not have been recorded by the Statutory Undertakers.

4 Diversions, Disconnections & Protection Works

4.1 Introduction

This section provides an overview of the diversions that would be required for the proposed masterplan to be realised without constraint. These diversions are based on the utility infrastructure constraints across the site as described in Section 3 of this report.

4.2 Electricity

The diversion of existing UKPN overhead 11kV crossing the site will be required, as the existing electrical infrastructure poses a constraint to the proposed development and movement across the site, both during construction and in the permanent situation. A budget estimate was requested from UKPN for the diversion. Within the budget estimate UKPN stated that the overhead cables would be moved to new underground HV cables at an estimate cost of [REDACTED]. The budget estimate can be found in **Appendix C**. Please note that the budget estimate for the connection to the network, found in section 5.2, also includes these diversion works, therefore it is expected that this budget diversion estimate would be superseded by the connections estimate.

4.3 Gas

The cost to divert the High-Pressure Gas Main is expected to be excessive and it has therefore been agreed in principle with SGN that the main could remain in place and be located underneath the access road. This would require the developer to enter into an Asset Protection Agreement with SGN and allow SGN access to the gas main.

As the gas main located within the site boundary is a 24" high pressure gas main it is considered to be major hazard pipeline. It is therefore a requirement that the Health and Safety Executive (HSE) are consulted on the development by the Local Planning Authority (LPA). Prior to this the developer can use the Planning Advice Web App to determine if the HSE will allow for the development to be built near a hazardous pipeline. The HSE will respond if they "Advise Against" or "Do Not Advise Against" the granting of planning permission on health and safety grounds that arise from the possible consequences of a major accident at the pipeline.

HSE advice is determined by a combination of the following:

- a. The consultation zone in which the development is located. (This is made of 3 zones, inner zone, middle zone, and outer zone).
- b. The sensitivity level of the proposed development.

HSE advise against development within the 'inner zone' (red bounded area), a 3m offset of the gas main (as identified in drawing HSL-240412164739-420 in **Appendix D**), for sensitivity levels 2, 3 & 4. The sensitivity levels that relate to each development type can be found in the **Appendix D**; the most relevant levels are summarised below:

- Housing (level 2)
- Play areas (level 2)
- Schools (level 3)

According to PADHI guidance, access roads and estate roads are considered to be sensitivity level 1 by HSE, which is deemed to fall into the category 'Do Not Advise Against' (DNAA) development in this area, indicating that roads can be built directly above the gas main.

The outer zone (blue bounded area, also identified in drawing HSL-240412164739-420 in **Appendix D**), would cover a distance of 110m from the centre of the gas main and the HSE decision is for this area is also DNAA.

A Ground Penetrating Radar Survey was conducted to provide a more accurate location of the HP Gas main to assist with the proposed location of the development access road. The output of the GPR survey can be found in **Appendix E**.

4.4 Telecommunications

No telecommunications assets are located within the site boundary. Therefore, no diversionary works are envisaged at this stage

4.5 Potable Water

The clean water supply is located within the boundary of the proposed Croudace Homes Development. It is expected that the developer will be required to enter into an agreement under Section 185 of the Water Industry Act with Southern Water to divert all or part of the existing main. This process has started with a request for a budget estimate has been made to Southern Water.

It should also be noted that elements of diversions of the Water Mains are likely not permitted to be carried out by the developer, Southern Water do the works themselves due to the risks associated with water quality and maintaining a supply to their customers.

4.6 Foul Water

No foul water is recorded within the proposed site or crossing any existing roads adjacent to the site boundary. Therefore, no diversionary works are envisaged at this stage.

5 New Supplies

5.1 Introduction

The new supply connections are based on very high-level rates for 101 dwellings.

5.2 Electricity

Discussions have been held with UKPN to determine the electrical loads for the site, including an allowance for electric vehicle (EV) charging.

In July 2022 Building Regulations Part S was created, which provides a requirement that every new residential dwelling with an associated parking space is required to have a 7kW EV charge point as a minimum. For every non-residential building with more than 10 parking spaces, the recommended requirement is for a 7kW EV charge point for every 1 in 5 car parking spaces. On this basis it has been considered that a minimum of 101 EV charging points will be required.

UKPN have provided us with a Budget Estimate for the cost to connect to their network, this is a cost of [REDACTED] for a total load request of 1234kVA. This estimate is for the connection into the network on Bines Road, installation of 2no. substations on the proposed development site and includes **the diversion of the existing overhead cables**. This also allows for the customer to complete all on-site excavations for connection and diversion works. It should be noted that the Budget Offer is not an offer for a connection to the existing network, nor does it reserve any capacity within the network. Please refer to **Appendix C** for the estimation which includes other assumptions made by UKPN.

5.3 Gas

It has been assumed that in line with the governments net zero target, gas will not be required for the proposed development, and that the proposed buildings will include heating via air source heat pumps.

5.4 Potable Water

Following the discussions with Southern Water regarding the indicative peak flow rate of 101 residential units, they have estimated that peak flow rate would be around 0.80 l/s for 101 dwellings at 125 l per house per day, with an occupancy rate of 2.4 person/dwelling.

Southern Water are yet to confirm the available capacity within the potable water system.

5.5 Foul Water

Following the discussions with Southern Water regarding the indicative peak flow rate for 101 residential units, they have estimated that the peak flow would be around 0.91 l/s for 101 dwellings at a rate of 125 l per house per day, with an occupancy rate of 2.4 person/dwelling using 10% infiltration and Dry Weather Flow of 2.5.

It has been confirmed to Southern Water that the foul water is to be pumped from the site.

Southern Water are yet to confirm the available capacity within the foul water system.

5.6 Telecommunications

Openreach require dates for start of work on site and when broadband is required for the first property. The development should be registered at least 8-weeks ahead of the 'Site Start Date' and/or six months before the date broadband is to be connected.

The cost for connection to the Openreach network is free for developments with 19 or more residential plots with the installation of Fibre to the Premises (FFTP).

6 Conclusion

6.1 Summary

The following table summarises the results of the investigations undertaken by Stantec in respect of utility services and outlines the likely requirements in terms of diversions and/or new infrastructure to support the planning application and meeting the requirement of Horsham District Council for a Utilities/Services Strategy/Assessment.

Statutory Undertaker	Existing Utility Infrastructure		New Utility Infrastructure
	Onsite / Near Development	Diversion Requirements	Requirements
UKPN	11kV overhead line dissects the site north to south, with a spur heading west to cross Bines Road, into the verge and then down to the existing 11kV substation.	11kV overhead lines within the site boundary are to be diverted into underground cables that will run beneath the proposed footways.	2no. substations will be required within the site to accommodate the conversion of the 11kV cable, these are proposed within the development boundary. The total cost for the connection, building of 2no. substations and to divert the HV OH cable will be estimated around £580,000 (exc. VAT).
SGN	A 24-inch High Pressure Gas Main runs through the northeastern corner of the site.	The cost to divert the HP Gas Main is expected to be excessive, an agreement in principle in place with SGN that the main can remain and be located underneath the access road. The development should be built outside of the easements and adhere to the HSE PADHI sensitivity and zone requirements.	Current proposals are for an all-electric strategy for the site; therefore, gas connections will not be required.
Thames Water (Foul)	Nearest foul drainage network is located within the verge of Bines Road	No diversions expected to be required.	Reinforcement works yet to confirmed by Southern Water. Proposed POC along the eastern site boundary at proposed access from Bines Road.
Thames Water (Potable)	A 400mm diameter Trunk Main dissects the site from north to south, doglegging around Croucher Farm, with a 150mm spur running east towards Avalon Court. There is also an abandoned 16-inch trunk main that runs roughly perpendicular to the northern stretch of Trunk	The 400mm diameter Trunk Main will require diversion, Southern Water are in the process of determining a cost for this.	Reinforcement works yet to confirmed by Southern Water. Proposed POC along the eastern site boundary at proposed access from Bines Road.

	<p>Main and the adjoining spur pipe, seemingly connecting into the 6-inch water main that is located within the western verge of Bines Road.</p> <p>Records also show a 100mm water main running from east to west at the north of the site, this also connects into the 6-inch water main in the western verge of Bines Road.</p>		
Openreach	Openreach mapping indicates that assets are located within proximity of the site.	No diversions expected to be required.	Openreach require 6 months' notice ahead of connection being required.

Table 6.1 Summary of Investigations

Appendix A Utilities Constraints Plan

Appendix B Asset Records

Appendix C Diversion/Connection Quotations

Appendix D HSE Zone Sketch & Sensitivity Levels

Appendix E GPR Survey