Homes England

The Housing and Regeneration Agency

# West of Ifield, Crawley
# **Utilities Statement**

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# West of Ifield Utilities Statement

## Existing and proposed utility apparatus

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# West of Ifield Utilities Statement

## Existing and proposed utility apparatus

| | |
|---|---|
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# Contents

# 1. Introduction

The purpose of this report is to provide a high-level review of the existing utility apparatus which may be affected due to the proposed development.

Homes England intends to redevelop approximately 171 ha of land located west of Ifield within the administrative area of Horsham District Council (HDC) in West Sussex for a residential-led mixed use settlement. The proposed Development, is herein described as 'West of Ifield', is being brought forward through a hybrid planning application (HPA).

This utilities statement has been prepared by Ramboll in support of the hybrid planning application and shall not be relied upon by any third party unless that party has been granted a contractual right to rely on this report for the purpose for which it was prepared.
It should be read in conjunction with other supporting documents submitted with the hybrid planning application.

The hybrid planning application (part outline and part full planning application) is for a phased, mixed use development comprising:

- A full element covering enabling infrastructure including the Crawley Western Multi-Modal Corridor (Phase 1, including access from Charlwood Road and crossing points) and access infrastructure to enable servicing and delivery of secondary school site and future development, including access to Rusper Road, supported by associated infrastructure, utilities and works, alongside.
- An outline element (with all matters reserved) including up to 3,000 residential homes (Class C2 and C3), commercial, business and service (Class E), general industrial (Class B2), storage or distribution (Class B8), hotel (Class C1), community and education facilities (Use Classes F1 and F2), gypsy and traveller pitches (sui generis), public open space with sports pitches, recreation, play and ancillary facilities, landscaping, water abstraction boreholes and associated infrastructure, utilities and works, including pedestrian and cycle routes and enabling demolition.

The hybrid planning application is accompanied by an Environmental Statement.

The hybrid planning application is for a phased development intended to be capable of coming forward in distinct and separable phases and/or plots in a severable way

This report has been produced as part Ramboll's appointment to deliver the utilities strategic report for the West of Ifield Development.

The work carried out to date has had regard to a parameter based illustrative scheme which has been prepared to demonstrate the principles of the development. The proposed land use is shown in Figure 1. The work is also based upon illustrative phasing which could be subject to change.

As such, further consideration will need to be given to the utilities strategy during detailed design stages and as each phase of the development comes forward.

The proposed land use areas are shown in Figure 1.1

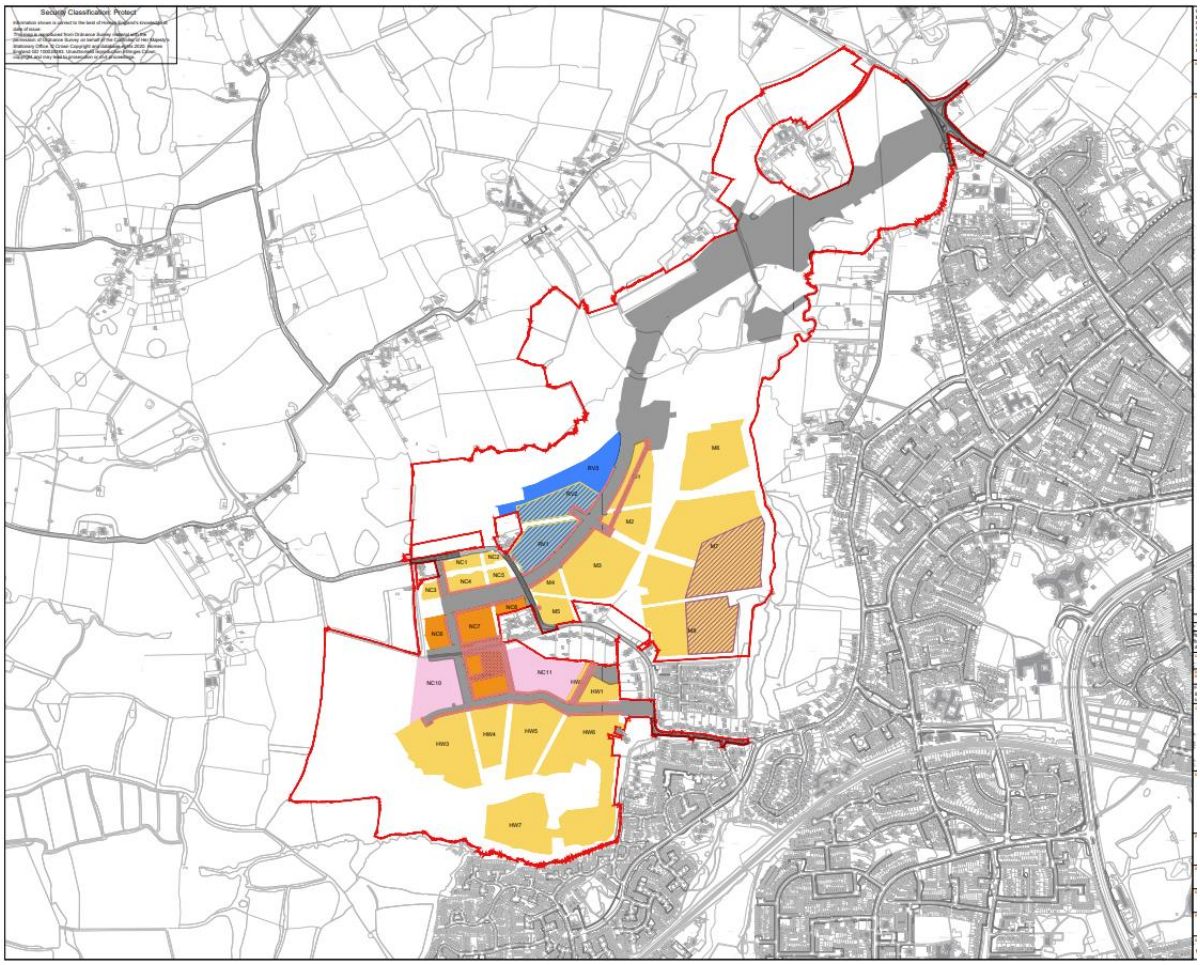


**Figure 1.1 - Land Use Plan**

Residential (Use Class C2, C3, Sui Generis)

Employment (Use Class E, B2, B8)

School (Use Class F1)

Mixed Use (Use Classes C1, C2, C3, F1, F2, E, Sui Generis)

Flexible Employment/Residential Zone (Use Classes C1, C2, C3, E, Sui Generis)

Residential (Use Class C2, C3, Sui Generis) also considered appropriate for gypsy and traveller pitches

# 2. Scope of works

## 2.1 Existing Utility Apparatus

Based upon information provided within Premier Energy Utilities Search Report (Dated 18/10/23) the following Statutory Undertakers have apparatus within the vicinity of the proposed development. While this report is now 20 months old it is assumed utilities apparatus has not been significantly updated within the site boundary during this period. Further apparatus has been identified with authority to install apparatus in the vicinity of the red line boundary, however, not directly affected by the scheme.

- UK Power Networks - Electric
- Southern Water - Water, Sewerage
- Thames Water - Water, Sewerage
- SGN - (Southern Gas Networks) Gas
- Openreach - Telecom
- Virgin Media -Telecom
- ESP Utilities Group - Gas, Electric
- GTC - Telecom, Gas, Electric, Water

## 2.2 Proposed Utility Apparatus

The utilities and services that would be required for the development are as follows:

- Electricity (UKPN/ and selected IDNO)
- Water (Southern Water and selected IDNO)
- Telecoms (Openreach/Virgin/HyperOptic)
- Drainage and Sewerage (For surface water drainage refer to Surface Water Drainage Strategy Report Document number 1621620007949-RAM-ZZ-XX-RP-D-0001)

Demand calculations for the proposed services are based upon the following baseline requirements:

- Latest Accommodation Schedule
- Approved Documents (Building Regulations)
- British Standards where relevant to Building Services
- International Standards where harmonised with British Standards
- Chartered Institution of Building Services Design Guides
- Chartered Institution of Building Services Technical Memoranda
- Chartered Institution of Building Services Application Manuals
- UK Statutory Regulations and Instruments
- Design Guides and recommendations published by Technical Institutions
- British Council of Offices Publications
- British Property Foundation
- Building Services Research and Information Association Publications
- Institute of Plumbing – Plumbing Engineering Services Design Guide, together with other such technical memoranda and Codes of Practice
- NJUG Guidelines
- Relevant Planning Policies

# 3. Existing utility apparatus

Based upon the search results, there are no Major Transmission apparatus affected by the proposed scheme. There is, however, distribution apparatus affected, this will be captured within the relevant supplier sections and identified within Appendix 1 – Premier Utility Report.

Combined utility apparatus plan is provided within Appendix 2

## 3.1 Electricity – UKPN

To the north of Rusper Road, an Overhead 11kV circuit is affected by the proposed works. This apparatus appears to supply CCM Gatwick and beyond. This apparatus will need to be diverted buried along Rusper Road.

Indicative diversion route is provided within Appendix 3

## 3.2 Potable water – Southern Water

In terms of existing infrastructure, there is an existing 4" Bonded Asbestos Cement (BAC) diameter main that runs along Rusper Road bisecting the site. A 200mm diameter PVC / DI main within Peverel Road south-east of the golf course site and other mains within the surrounding residential developments. There are no other mains within the site boundary and no mains that will require diversion.

There are likely small connections from these mains to the existing properties within the site boundary such as the Ifield Golf Club clubhouse. These are limited and will be considered in more detail and dealt with during future design stages. Their presence does not affect the potable water supply strategy.

Existing Southern Water asset maps are included in Appendix 1

## 3.3 Sewers – Thames Water

To the west of Ifield Brook, there is an existing 675mm Foul Gravity Sewer, based upon initial plans of the scheme, it appears as though sufficient space has been left to permit the sewer to remain. Access arrangements and possibly easement will need to be updated at a suitable stage of design maturity.

Within Rusper Road, there is a 100mm diameter pressurised sewer. No works are proposed for Rusper Road; therefore, the apparatus should not be affected by the scheme.

Opposite Dene Cottage along Rusper Road, 2 Nos sewers pass to the north of Emmanuel Cottage (125mm pressurised & 150mm foul sewer). Downstream from this location, the scheme plans appear to show sufficient space for the sewer to remain. The 125mm pressurised sewer discharges into a 1200mm foul gravity sewer, again with provision within the plans for the apparatus to remain. The sewer reduces in diameter to 225mm and connects with the 675mm foul flowing north.

Existing Thames Water asset maps are included in Appendix 1

## 3.4 Gas – Southern Gas Networks

No gas apparatus appears to be directly affected by the proposed works. Depending upon access requirements, some apparatus may need to be temporarily protected during the construction phase.

Existing Southern Gas asset maps are included in Appendix 1

### 3.5 Telecoms – Openreach

No existing apparatus appears to be directly affected as part of the scheme. However, the Openreach records do indicate proposed overhead apparatus bisecting the site, however it is unclear to date if this has been installed. It is unclear if this is as a result of other queries in relation to the development or as part of another scheme. Further investigation with Openreach is required to determine validity of proposed works as the alignment made need to change as the scheme develops.

Existing Openreach asset maps are included in Appendix 1

### 3.6 Telecoms – Virgin Media

No existing apparatus appears to be directly affected by the development.

Existing Virgin Media asset maps are included in Appendix 1

### 3.7 Telecoms – Vodafone

Buried apparatus within Charlwood Road, not directly affected by the scheme.

Existing Vodafone asset maps are included in Appendix 1

### 3.8 Telecoms – Zayo Group

Buried apparatus within Charlwood Road, not directly affected by the scheme.

Existing Zayo Group asset maps are included in Appendix 1

### 3.9 Telecoms – euNetworks

Buried apparatus within Charlwood Road, not directly affected by the scheme.

Existing euNetworks asset maps are included in Appendix 1

### 3.10 Telecoms – CityFibre

Apparatus appears to circumvent the site without direct intervention. Apparatus not believed to be affected by the works.

Existing CityFibre asset maps are included in Appendix 1

### 3.11 Telecoms – Mast Data

Plans indicate that planning approval has been granted for 2Nos Mobile phone masts to the north of Rusper Road, within the location for proposed sports pitches. Recent investigation in the area has not identified presence of these masts and the promoter is yet to be determined.

Existing Mast Data asset maps are included in Appendix 1

### 3.12 Independent suppliers – GTC

Plans showing apparatus supplying Bovis Homes estate to the east of Rusper Road, apparatus not affected by proposed works.

Existing GTC asset maps are included in Appendix 1

### 3.13 Independent suppliers – ESP Utilities

Plans showing supplies to Poyning Road, apparatus not affected.

Existing ESP Utilities asset maps are included in Appendix 1

### 3.14 Local Authorities – West Sussex County Council

Street lighting is indicated along Ifield Green, Charlwood Road, Rusper Road & Peverel Road.

Existing Street Lighting asset maps are included in Appendix 1

# 4. Proposed Utilities

## 4.1 Electricity

### 4.1.1 Definitions

**The term Building Network Operator (BNO)** was created to be duty bound to manage the lateral rising main supplies in multi tenanted buildings.

**The Energy Networks Association** is the body that represents the Electrical and Gas Distribution Network Operators and prepares the guidance and recommendation protocols for all operators in the UK. The Document is often referred to as EN-ER G87 as it is owned and updated by the Energy Networks Association.

A **DNO** is the licensed Distribution Network Operator. Licensed distribution network operators in Great Britain are responsible for regional distribution service areas that transports electricity from the high voltage national grid system and reduce it to lower voltage levels for industrial, commercial, and domestic use.

An **IDNO** is an Independent Distribution Network Operator who holds a Distribution Licence. These operators run small independent networks within a DNO's region.

An **EDNO** is a License Exempt Distribution Network Operator, as defined in Electricity (Class Exemptions from the Requirement for a Licence) Order 2001; in this instance a network operator distributing less than 2.5MW or generating less than 10MW.

**EVC** – Electric Vehicle Charging

### 4.1.2 Power Networks Ownership with the block

In the UK the power networks and associated infrastructure and equipment are owned and maintained by DNO.

The change in legislation lead to deregulation of utilities connections which subsequently resulted in creation of IDNO. This has provided better competition in the new power connections market.

Electrical networks in the buildings are owned by Building Networks Operator. The BNO is needed when the building has more than one meter connected to the single incoming power supply.
The role of BNO can be undertaken by:

- Client/Developer/Contractor for unlicensed networks up to 2.5MW (Option 1)
- Licenced BNO for networks above 2.5MW (Option 2)

Currently there are no licenced BNOs other than IDNOs. IDNOs can act as BNO for any network size in the building.

In the Option 1 where Client/Developer/Contractor owns the networks the boundaries of ownership are fixed and are shown on the diagram below. In this example the external infrastructure including sub-station and termination point (Cut out) are owned by DNO or IDNO whereas internal network is owned by the developer or building owner. The Table  provides pros and cons for this option.

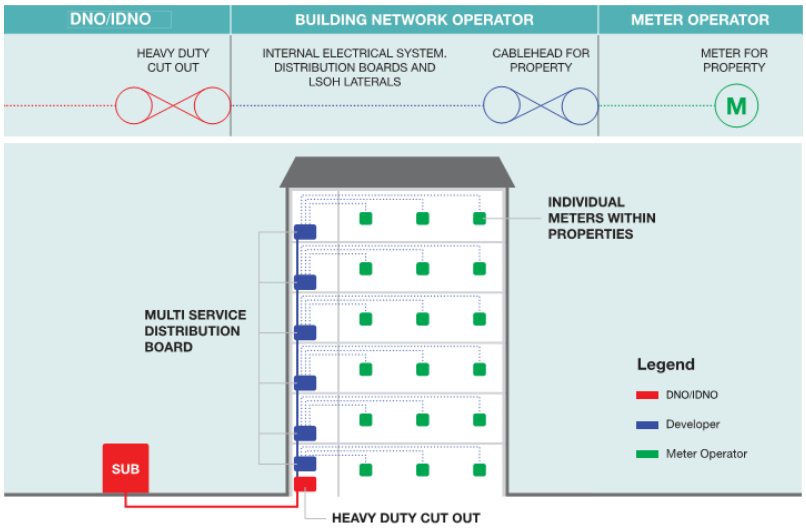



**Figure 4.1 - Client acting as BNO Schematic**

| Client acting as BNO | |
|---|---|
| **Pro's** | **Con's** |
| No legals | Additional Switchroom (dependant on ownership boundaries) |
| More flexibility in design (partial completion) | Approved SAP engineer to Maintain network |
| Preference on cable in line with BS 7671 | Must comply with Ofgem Fault Time Scales (2hrs & 4hrs) |
| Free choice for energy shipper/supplier | OPEX Cost Must maintain network (additional costs) |
| | Higher CAPEX |

**Table 4.1 - Client acting as BNO Pros and Cons**

In Option 2, IDNO assumes responsibility of BNO and the external and internal networks are owned by IDNO. The pros and cons are presented in Table 4.2 - IDNO acting as BNO Pros and Cons

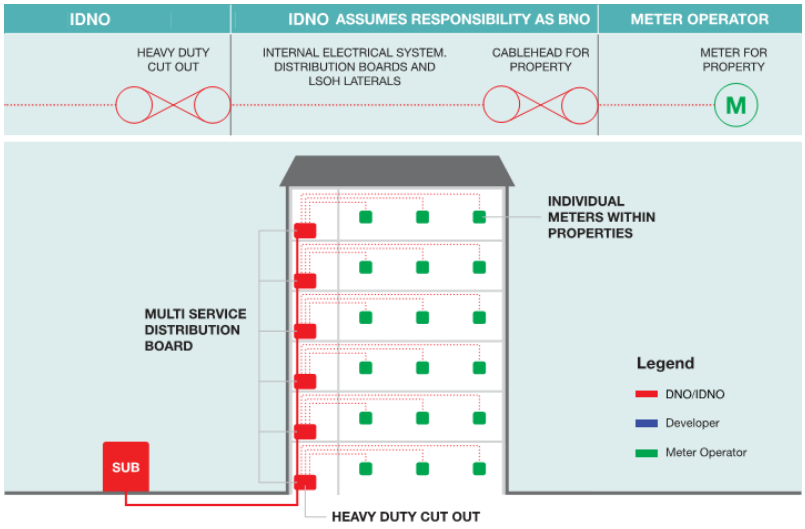



**Figure 4.2 - IDNO acting as BNO Schematic**

| IDNO acting as BNO | |
|---|---|
| **Pros** | **Cons** |
| Maintained Adoptable Network without additional OPEX cost | Legal Rights 24/7 unimpeded to all assets |
| Usually installation costs are lower and can be spread across all phases. | More complication with partial completion and hand over, additional isolation points maybe needed for building that are handed over at later date. |
| Free choice for energy shipper/supplier | |
| Design in line with ENA G81 (Electricity Networks Association) | |
| Cables are unarmoured and sized to the load at point of supply | |
| Offer Asset Value payments for some types of load connections (Residential, Industrial and Commercial) | |

**Table 4.2 - IDNO acting as BNO Pros and Cons**

### 4.1.3 Securing Network Capacity

Securing Network Capacity via Ramping Agreements

IDNO, can secure network capacity through its unique "capacity ramping" agreements with the incumbent DNO. This agreement, regulated by OFGEM, provides security of available capacity over a number of years without the need to pay substantial "capacity charges" which are levied to the general public (i.e., the Client only pays for what they use within the agreed timeframe).

This agreement is in place to ensure that IDNO's can operate in an economical viable way as their business model requires revenues are generated by new supplies connected to its downstream network net of upstream charges paid to the DNO's.

Without this mechanism, IDNO's would not be able to compete in medium to long term construction projects, as if on day one the full capacity charges were levied by the incumbent DNO it would financially cripple their ability to realise sufficient revenues to fund the operational costs. In addition, the risk of "losing" capacity would prevent IDNO's from competing in the projects.

### 4.1.4 Electrical Load Allowances

For the purpose of electrical demand calculation, load density of a given area reflects guidelines provided in the BSRIA Rules of Thumb 5th Edition and UKPN G81 Design and Planning Guide.

The loading values associated with electrical services requirements are reported in tables 3 and 4.

Electrical densities in $W/m^2$ cover the requirements for lighting, general power, and mechanical ventilation, unless stated otherwise.

The Maximum demand has been estimated using the equation shown below, depending on the method used for every area.

For non-residential and Landlord areas the maximum demand was based on power density calculation using the following formula:

$$\mathrm{P} = \mathrm{Area} \times \frac{\mathrm{W}}{\mathrm{m}^2} \times \mathrm{Diversity}$$

Power densities used for the commercial spaces are as follows:

| | |
|---|---|
| Commercial | 87 W/m2 |
| Food store | 500 W/m2 |
| Community | 80 W/m2 |
| Leisure | 85 W/m2 |
| Innovation | 87 W/m2 |

For residential units the flat value of 2.1kVA per unit has been used.

For EVC a value of 7.5kW was used per charging point.

It is understood that that there could be up to 4500 car park spaces and at the initial stage we are allowing EVC to be provided for 20% of the spaces with further 80% for passive capacity in the grid.

### 4.1.5 Load Analysis

This section details the outcome of the preliminary electrical loads calculation as well as the criteria followed to complete the loads assessment.

The load calculation is based on currently available information. It should be noted that this assessment is based on the hybrid planning application and may need to be updated for the reserved matters stage. The summary of this exercise is shown below and clearly identifies the load allowances for each item and provides full reference data of how the diversity has been applied to obtain an accurate load estimation.

The total estimated maximum demand for the project West of Ifield Site has been calculated as follows:

| Item | Diversified Load |
|---|---|
| **Site Residential** | 7 MVA |
| **Site Residential (Landlord)** | 2 MVA |
| **Commercial** | 2.5 MVA |
| EVC | 12 MVA |
| **Total Including spare capacity** | **23.5 MVA** |

**Table 4.3 - Calculated loads**

### 4.1.6 UKPN Application

New load calculated at 23.5MVA as shown in the table above. Ramboll have submitted the application for 32MVA to UKPN to secure electrical power capacity for the West of Ifield development. This budget application requests HV point of connection only from which an IDNO will derive the power to site.

UKPN identified the following scope of works:

- New 400/132kV Super Grid Transformer at Bolney GSP
- Installation of 2 x 33kV circuit breakers at Three Bridges Grid
- Extension of existing 33kV switch room at Three Bridges Grid
- Excavation, installation and reinstatement of 2 x 33kV cable route with pilot between POC and the Customer site (Approximately 5,500m)

- Installation and commissioning of 33/11kV Primary substation comprising of 2 x 33/11kV
- Transformers and associated protection on customer site
- Manage Outages
- National Grid Project Progression Study
- Wayleaves and Consents

There is an additional transformer required in the Bolney super grid sub-station as shown on the adjacent plan (red circle), new circuit breakers at Three Bridges Grid Sub-station (red circle) and cables routed to the site where new primary sub-station will be required.

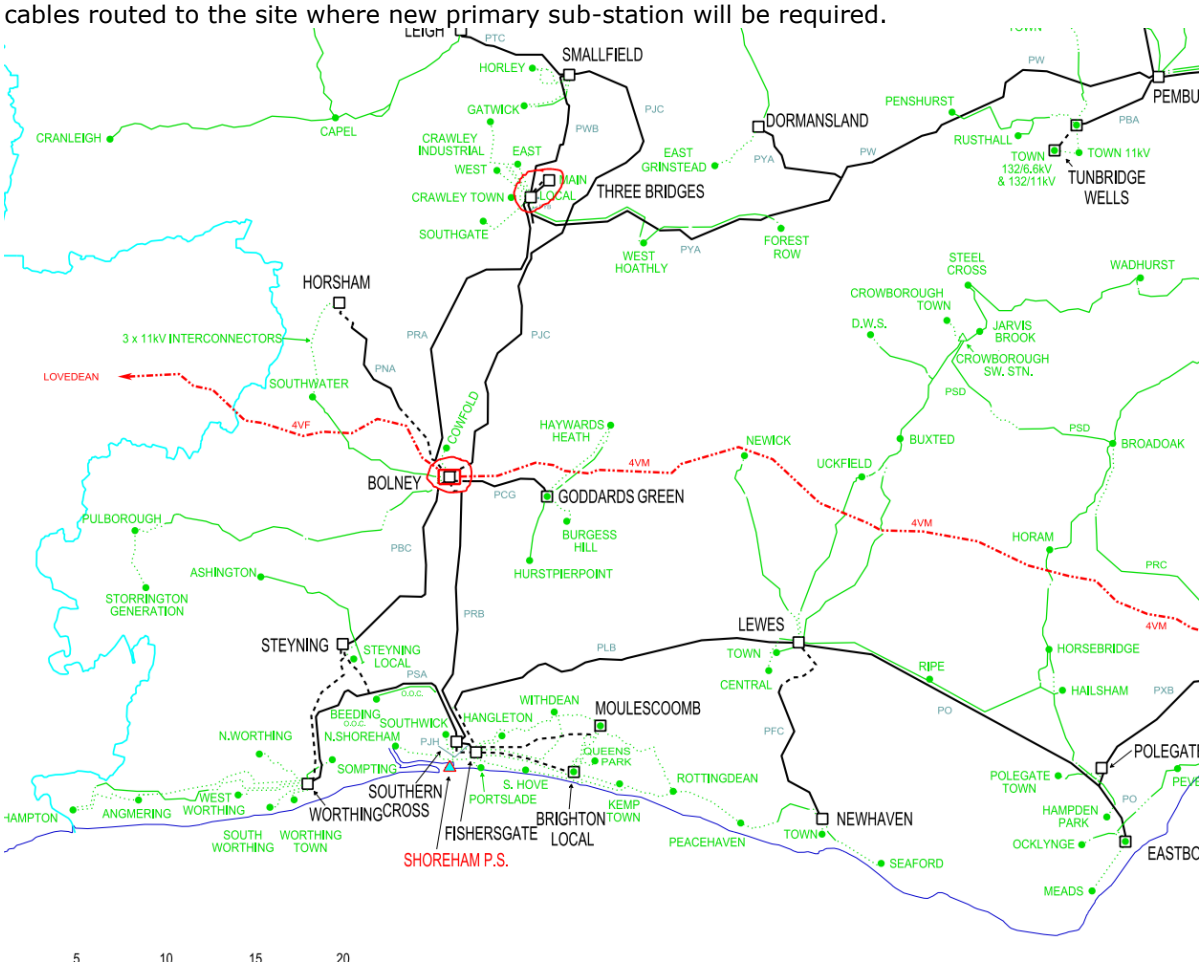



**Figure 4.3 - UKPN POC**

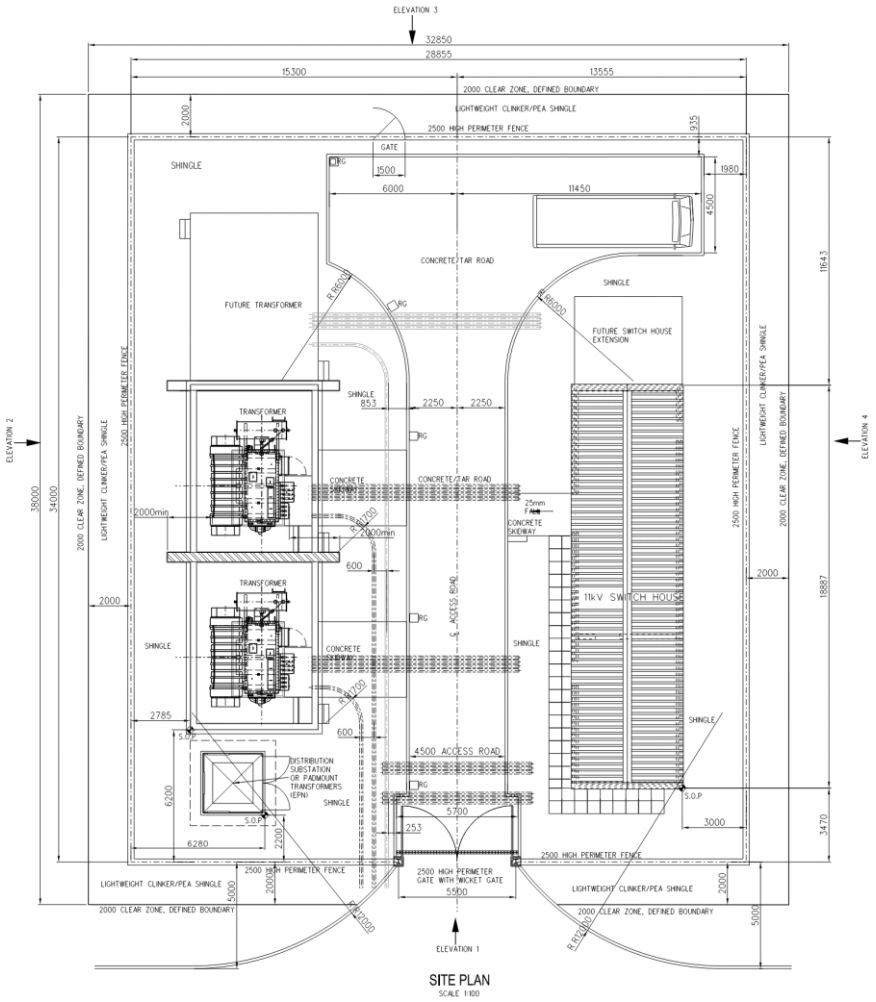



**Figure 4.4 - UKPN Primary sub-station example**

New primary sub-station will be accommodated on site with an example of the sub-station footprint is shown above – and the area of approx. 1600m2 will be required. This has been allowed for within the proposed development layout.

### 4.1.7 IDNO Application

An application to IDNO will be required at the next stage of the design (Stage 3) once electrical distribution in the buildings is fully designed. It is recommended that these will be: Power On, Energetics and SSE.

## 4.2 Potable Water

Typical water consumption for the Proposed Development has been calculated for the purposes of capacity using the guidance figures outlined in the Southern Water Point of Connection Application. These figures total 323.4m3/day.

The Point of Connection Request was submitted to Southern Water and a response received 4th September 2023 which is included in Appendix 4

Based on the figures provided in the application, Southern Water modelled the demand for the development at 37.73 l/s. Southern Water have stated that the modelling results suggest that the system has sufficient capacity to support the additional demand without network enhancements.

With regards the Point of Connection (POC), the preferred point of connection is on Rusper Road, however this 125mm main will not be able to supply the entire development. The modelled point of connection is a 200mm PVC main within Peveril Road.

Southern Water have stated that they have only carried out a high-level study assessment due to the concept nature of the proposals. They have recommended that as the scheme develops, and more information becomes available that a wider growth study is commissioned.

At this point, supplying part of the site from Rusper Road to enable early connection could be discussed.

Finally, the site is within the area served by the Hardam Water Supply Works and is situated within the Water Neutrality Zone. Therefore, the development will need to comply with the obligations set out by Natural England and the Local Planning Authority as detailed in the Water Neutrality Statement documents no WOI-HPA-DOC-WNS-01

The calculated demands used for the POC application did not consider reduced mains water demand because of on-site water reuse which is likely to be required to comply with Water Neutrality obligations. For the Water Demand Calculations please refer to the Water Neutrality Statement for the site.

### 4.3 Surface water drainage

The proposed development will aim to provide a conceptual drainage strategy for the developed areas to drain towards the natural watercourses on a like-for-like basis.

The means of discharging the drainage through infiltration has been determined, from Ground Investigations, to be unsuitable for the use of soakaways on site. The proposed drainage for the site will utilise as close as possible the existing drainage regime where the overland flow conveys towards the watercourses that bound the site. The site will achieve a proposed drainage arrangement on a like-for-like basis with a consideration of 40% climate change factor for all storm events up to and including the 1 in 100-year storm event.

The proposed surface water drainage system has been designed to incorporate the current SuDS principles and approaches. A series of swales, detention basins, manholes and pipes will direct surface water to a discharge location for the catchment areas to the north and south of the site, in line with the existing characteristics of the site which drain to the adjacent watercourses.

By distributing attenuation between the site-wide masterplan and individual plot catchments, a balanced approach is achieved. The masterplan establishes a robust infrastructure capable of managing a significant portion of runoff, while individual plots contribute through tailored solutions suited to their specific characteristics and requirements. This approach optimises the drainage system’s efficiency, enhances resilience against flooding, and promotes sustainable water management practices across the site.

It is only anticipated that 107ha of the overall 171ha site will be modified with the proposed works which will change the characteristics of the existing site. It is anticipated that the remaining area (north of River Mole) will not be altered and will drain as per existing greenfield site conditions.

A breakdown of the existing greenfield discharge rates has been calculated as below.

| **Storm Event** | **$Q_{1\ year}$** | **$Q_{30\ year}$** | **$Q_{100\ year}$** | **$Q_{Bar}$** |
|---|---|---|---|---|
| Existing Discharge Rates (l/s) - Main Site | 477.66 | 1292.49 | 1792.63 | 561.95 |

**Table 4.5 - Greenfield discharge rates**

Connection to existing natural watercourses have been identified as:

- Outfalls 1 & 2
  - Discharging into River Mole
- Outfall 3
  - Discharging into Hyde Hill Brook
- Outfall 4
  - Discharging into Ifield Brook
- Outfall 5
  - Discharging into Ifield Brook and ordinary watercourse convergence.

A plan showing the indicative drainage layout and discharge points in provided within Appendix 5.

### 4.3.1 Phase 1 Drainage Strategy

The plots incorporated within the Phase 1 design include the following: O Plots, Q1 Primary School, J Plots, I Plots, P1 Secondary School, H Plots, G3 plot and the associated link road running through the central spine of the site. Details regarding drainage, along with considerations for both on-plot and off-plot hard and soft landscaping, are provided in the Arcadis Drainage Design Report (10051123-ARC-050-ZZ-TR-CE-00002).

### 4.3.2 Site Wide Drainage Strategy

The proposed site wide drainage system is to be designed and implemented in accordance with Thames Water Adoptable Standards. As an essential component of the development's infrastructure, the drainage system plays a crucial role in managing foul and surface water runoff, preventing flooding, and protecting the environment.

The site wide drainage strategy is based on five catchment areas individually treating, storing and conveying surface water to each of the individual outlets which will evenly discharge at a controlled rate into the adjacent water courses. The site wide drainage strategy aims to convey runoff anticipated from the proposed development whilst trying to achieve a like-for-like basis with the existing characteristics of the site. The total attenuation provision from the main site drainage through below ground storage and detention basins is circa 36,985$m^3$.

The plots incorporated within the site wide design include the following: A, B, C, D, E, F, S, M Plots and G Plot excluding G3.

### 4.3.3 On Plot Drainage

The main on plot drainage will utilise a drainage system which will capture roof drainage from all buildings and may choose traditional gutter systems to achieve this, whilst the majority of external hardstanding drainage will be collected via gullies and drainage channels. However, individual plots within the masterplan (residential, commercial and schools) are allocated a specific role in managing their catchment attenuation. Attenuation features should be provided by the following sustainable drainage systems:

- Detention basins
- Below ground tanks

- Muga attenuation
- Swales
- Filter trenches
- Blue/ green roofs
- Rain gardens
- Oversized pipe

The remaining attenuation provision from the on-plot residential and commercial areas to manage site drainage is circa 15,128m$^3$.

#### 4.3.4 Road Drainage

Sustainable Drainage Systems can be incorporated as part of road drainage to enhance water management and mitigate the impacts of urban development on the environment. Swales are an effective solution which can be incorporated to capture and convey surface water runoff at shallow level. Where there are no spatial constraints, these can be included along road edges to capture, filter runoff before it enters the below ground network. Similarly, where space above ground to include a swale may not be achievable, Filter Strips can be a narrower alternative along road edges which provides good treatment and conveyance of surface water runoff at a shallow depth. The drainage strategy for the proposed site wide road network aims to utilise sustainable drainage techniques as the design develops to aid with the attenuation requirements to achieve the target greenfield runoff rate.

### 4.4 Foul water drainage

The proposed foul water drainage strategy is based on the Area Schedule for proposed onsite residential and commercial properties contributing to the site wide demands for drainage for the development. It is envisaged that a gravity drainage network will be utilized to convey foul water towards the adjacent Thames Water public sewer to the east of the site. Due to the nature of the development changing from an undeveloped greenfield site to a residential and commercial use development, the foul water discharge rate will increase as a result.

Initial assessment of the site with relation to the proposed foul water design suggests that most of the site can achieve connections via gravity to the sewer with a western portion of the develop struggling to achieve the desired levels. As such a pump station will need to be provided to lift and convey the drainage to an appropriate height/ location for connection to the sewer via gravity.

The proposed foul water discharge rate from the site has been calculated to be in the region of 85.96 l/s peak flow and average flow of 14.33 l/s. The proposed discharge rate will need to be agreed with Thames Water via a pre-development enquiry application. Initial discussions with Thames Water suggest that there would be no issues with the proposed rates and connections to their sewer. NB - the peak figure is not anticipated to be reached as this would require full usage of appliances at the same time constantly in use.

Further liaison with Thames Water is required to agree the final arrangement.

Thames Water records show that there is a public Foul/ Combined sewer located along the eastern boundary of the site. Initial assessment of the site with relation to the proposed foul water design suggests that most of the site can achieve connections via gravity to the sewer with a western portion of the develop struggling to achieve the desired levels. As such a pump station will need to be provided to lift and convey the drainage to an appropriate height/ location for connection to the sewer via gravity. Connections onto existing Thames Water infrastructure have been identified:

- Along Peveral Road, into manhole TW MH1305

- Along Rusper Road into manhole TW MH2701
- Within fields into manhole TW MH5401
- Within fields into manhole TW MH5601

A plan showing the indicative drainage layout and discharge points in provided within Appendix 6.

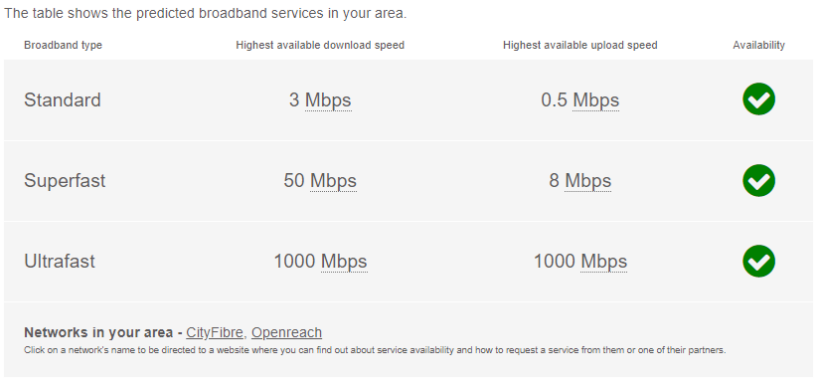
## 4.5 Telecoms

The proposal is to provide new and where possible to upgrade and extend the existing telecoms infrastructure in the area to provide full fibre into each property from Openreach, Virgin Media and City Fibre. Both of these suppliers can provide ultra-fast broadband. Applications will be made for Site A once the design is further developed.

The duct network design will cover the entire development to provide future flexibility for connection various fibre suppliers.

This will enable full fibre connection to each apartment/unit to comply with local policy.

Ramboll carried out desktop review for broadband availability using Ofcom website to record what is available in the area, the results are shown below.


The table shows the predicted broadband services in your area.

| Broadband type | Highest available download speed | Highest available upload speed | Availability |
|---|---|---|---|
| Standard | 3 Mbps | 0.5 Mbps | ✓ |
| Superfast | 50 Mbps | 8 Mbps | ✓ |
| Ultrafast | 1000 Mbps | 1000 Mbps | ✓ |

**Networks in your area** - CityFibre, Openreach

Click on a network's name to be directed to a website where you can find out about service availability and how to request a service from them or one of their partners.

**Figure 4.5 - Approximate Broadband speeds**

### 4.5.1 Mobile networks

In the West of Ifield development area there are four major mobiles networks that provide digital connectivity for the voice calls and data. These are:

- Vodafone
- O2
- EE
- Three

Ramboll carried out searches using Ofcom website to check the signal coverage for the Development.
The mobile reception in the area of the development has a good coverage. 5G signal is available outdoor only.

Further studies will be carried out in each separate phase to check if the proposed building will have any impact on current coverage and further signal tower maybe required to improve the signal.

The results are as follows:

## Indoor Signal Coverage

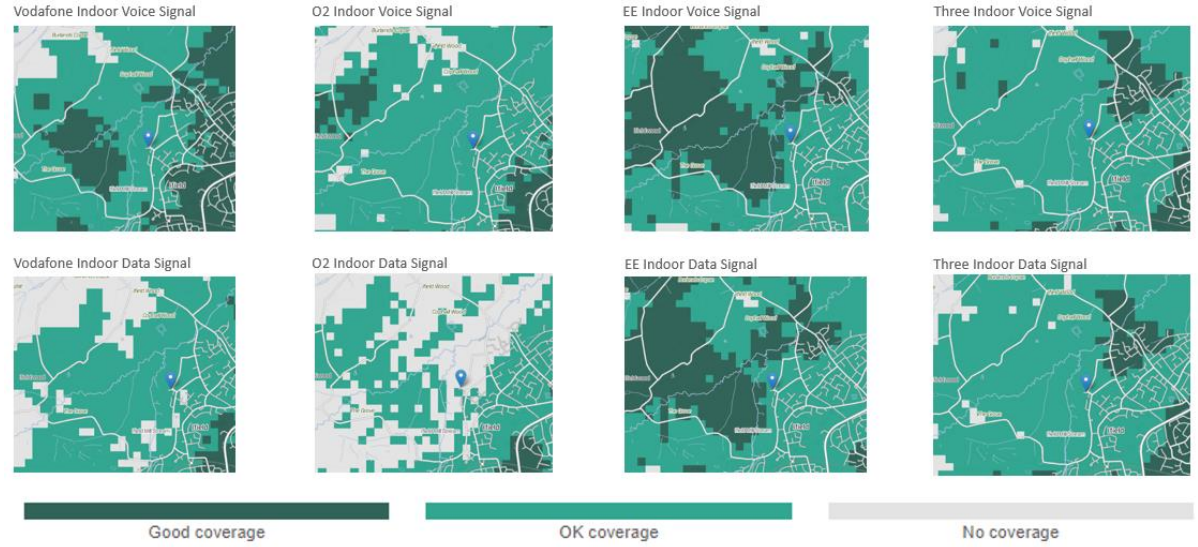



**Figure 4.6 - Indoor Signal coverage**

## Outdoor Signal Coverage


**Figure 4.7 - Outdoor signal coverage**

# Appendix 1
# Premier Utility Report

Appendix 2

# Proposed Utility Apparatus Plan

# Appendix 3
# UKPN 11kV OH Diversion

# Appendix 4
# Southern Water Application

Appendix 5
# Surface Water connection points

Appendix 6

# Foul Water Connection point

# Appendix 7
# UKPN Budget Estimate