making the right connections

Bodnant Avenue

Utility Study

Level 2

Document Status				
Issue/Revision	Comments	Date	Prepared By	Checked By
1	First Issue	26/09/2024	Joanne Blackburn	Ryan Elliman
2				
3				

UCML Utility Study – Level 2

Bodnant Avenue,

Prestatyn

Produced for: Caulmert, on behalf of Adra

Prepared by: Joanne Blackburn BA (Hons) – Associate Director
Utilities Connections Management Ltd
Email: joanne.blackburn@ucml.co.uk

Contents

1.0 Introduction

ML has been instructed by Caulmert, on behalf of Adra (hereafter referred to as 'the Client') to provide a desktop utility study to identify the outline constraints derived from the statutory utility infrastructure on a proposed residential development of up to 62 no. dwellings. The site is located off Bodnant Avenue, Prestatyn, as indicated within Figure 1.1 below.

Figure 1.1 – Aerial view of existing site

UCML has been commissioned to provide a desktop utility study defining potential cost and timescale risks that could impact on the overall delivery of the project. The principal aim of this utility study is to identify the key constraints derived from statutory utility infrastructure on the proposed development. The information provided within this desktop study is based on review of the indicative site layout plan provided to UCML by the Client, as indicated in Figure 1.2 overleaf.

Figure 1.2 – Site Layout Plan

The information provided within this desktop study is based on the development consisting of up to 62 no. residential dwellings. All utility load requirements have been estimated by UCML based on all dwellings being electrically heated with the use of Air Source Heat Pumps (ASHPs). UCML has also included an allowance for 1 no. 7.4 kW rated Electric Vehicle (EV) charging point per dwelling.

Table 1.1 below summarises the estimated loads used for the study. Please note, these estimated loads are intended for use as a guide only to produce this study, and it is recommended that a Mechanical and Electrical Consultant is employed to calculate the actual load required based on the final layout design and proposed heating method. Please note, the load estimations for the residential development does not include a figure for individual clean water load requirements as residential clean water connections are standardised; therefore, no individual load assessment is required.

Utility	Total load
Electricity	217 kVA

Table 1.1 – Load summary

This desktop study has been produced using the statutory records received from each relevant body. The host statutory network operators which operate in the vicinity of the development site and covered within this study are listed in Table 1.2 below.

Utility	Statutory Operator
Electricity	SP Energy Networks
Gas	Wales & West Utilities
Water	Dŵr Cymru Welsh Water
Telecoms	Openreach

Table 1.2 – Host Statutory Network Operators

UCML is not responsible for the accuracy or quality of the information provided on statutory utility infrastructure records, and has attempted to use reasonable skill and care in investigating the existing site services. Unless stated otherwise, UCML has not made any provision for out-of-area water mains, private networks, unrecorded networks, Liquid Petroleum Gas (LPG) networks, street lighting, CCTV, traffic signals/illuminated signage, data centre networks, electricity generation installations, interconnectors, or drainage/sewerage networks.

Please note, all information on the drawings contained within this utility study and elsewhere is indicative only. The verification of the details and plant location given on the relevant infrastructure records should be undertaken using the following methods;

- The use of plant location equipment to trace all underground plant.
- The use of hand dug trial holes to confirm the precise location of plant.
- The use of suitable paint or markers on the surface to clearly indicate the position of buried apparatus.

All works undertaken are to be in accordance and compliance with the Construction Design and Management 2015 Regulations, published Health & Safety Guidelines, and the agreed working practices of the relevant utility companies. The following assumptions must be made in regards to any existing utility apparatus;

- All mains, services cables, and pipes should be assumed live until proven dead prior to any excavation, demolition or groundworks commencing.
- Any existing building is assumed to have live services until proven otherwise.
- Any site is assumed to have existing utility apparatus located within the boundary until proven otherwise.
- Service connections are not indicated on all utility infrastructure records. Where no service connections are indicated, their presence should be anticipated until proven otherwise.

2.0 Scope and Objectives

Utilities Connections Management Limited (UCML) is an independent Utility Consultancy providing services relating to the provision of utility connections to all types of developments.

This desktop utility study aims to provide a 'snapshot' in time of the current statutory utility networks and review the potential connection, diversion, and disconnection works that may be required to accommodate the development proposals. The objective of the commission is to provide a level of information relating to budgetary costs and risks, without incurring significant costs relating to distribution network studies. It should be noted that as this study is desktop in nature, no site visits or surveys have been undertaken during its completion.

The scope of works undertaken by UCML may be summarised as follows;

- Obtain the statutory Network Operators' infrastructure records.
- Review the existing utility distribution networks within the local area of the site.
- Application for firm points of connection for electricity, gas, and water supplies to the site to determine the location of proposed connection.
- Consider the impact existing utility apparatus will have on proposed development works and provide a technical review and analysis of all statutory authority infrastructure affected by proposed on and off-site works, including the provision of the following;
    - Budget estimates for anticipated disconnection and diversion works.
    - Budget estimates for connection works, derived from firm non-contestable charges including an estimate of required reinforcement works where applicable.
    - Cost risk and analysis.
    - Timescales for provision and execution of quotations for the required works, highlighting risks to project programme.
    - Highlight of abnormal legal requirements including wayleaves and easements, and explanation of requirements to mitigate risk.

UCML's desktop utility studies provide a detailed overview of the statutory electricity, gas, clean water, and telecommunications infrastructure in the vicinity of a proposed site, ideal for:

- Due diligence prior to land purchase to allow negotiation.
- Risk assessment prior to tender.
- Assistance with site layout design to minimise impact on existing utilities, taking statutory utility infrastructure legal requirements into account.
- Detailed planning statements.
- Investment analysis.

3.0 Assumptions and Exclusions

In view of the limitations of the available information, the following assumptions have been made to produce this utility study;

- All estimated loads have been based on information provided in the Network Operators Distribution Code and other documented standards.
- The information provided within the desktop study is based on the development site area as identified on the proposed site layout plan shown in Figure 1.2 within the introduction. Any land falling outside of the provided boundary is outside of the scope of this desktop study and, should it be incorporated within the proposed development boundary, this may affect the information and recommendations provided within this desktop study.
- The desktop study has been produced based on the specification provided by the Client/Developer at the time of instruction. Any changes to the size, type, number of specification of the development (for instance the extent of EV charging provision and/or use of Low Carbon heating solutions) may affect the information and recommendations provided within this desktop study.
- In the timescales and budget costs quoted, no allowances have been made in respect to the following unless stated otherwise;
    - Wayleaves, easements, or access rights.
    - Reinforcement charges.
    - Land transfers or lease arrangements for substation requirements if applicable.
    - Abnormal off-site civils.
    - Specialist traffic management (non-standard).
    - On-site civils and builders work.
    - Seasonal Embargoes.

  It should be noted that all budgetary figures quoted are exclusive of any Value Added Tax (VAT) that may be applicable unless stated otherwise.

4.0 Terms and Definitions

ADMD	After Diversity Maximum Demand. The development demand considering diversity of usage.
ASHP	Air Source Heat Pump.
CHP	Combined Heat and Power generator.
CSEP	Controlled System Exit Point. Gas mains connection point.
DNO	Distribution Network Operator. This is the licensed electricity distributor for the geographic region.
EV	Electric Vehicle. Charging points for electric vehicles can significantly increase electricity demand of a development.
FTTP	Fibre to the Premise telecommunications connection.
GT	Gas Transporter. The GT is the licensed gas network operator for a specific geographical area.
GSHP	Ground Source Heat Pump.
ICP	Independent Connection Providers. Undertake new electrical connections, however they do take ownership of the asset.
IDNO	Independent Distribution Network Operator. Network owners and operators that are not constrained to a geographic area.
IGT	Independent Gas Transporter. A GT that is not governed by its geographic location.
NAV	New Appointment and Variation. Agreements signed by independent water network operators, not governed by geographical area, with Ofwat to adopt water infrastructure within a given boundary.
POC	Point of Connection. This is a formal document submitted by the DNO identifying the location for a new electrical connection.
PV	Photovoltaic generation.

5.0 Executive Summary

This study comprises the results of the investigation and appraisal undertaken by UCML of the existing utility infrastructure located in the vicinity of the development site, and provides an overview of the likely demand requirements to support the proposed development works along with a review of any network reconfiguration works that are currently anticipated.

The relevant sections of the study will discuss the development requirements and constraints in further detail, however UCML would highlight the following main site constraints, along with the recommended next steps to be taken;

- SP Energy Networks has confirmed there is currently sufficient capacity within the existing 11 kV HV network to supply the development. The use of the 11 kV HV POC provided will require the installation of an on-site secondary substation.
- Dŵr Cymru Welsh Water has confirmed there is currently sufficient capacity within the existing clean water distribution network to supply the development.
- SP Energy Networks has confirmed an existing substation is located on-site, near the boundary with Nant Mill Road. Review of the current site layout plan indicates the substation could be retained in situ to avoid relocation and diversionary works. Formal consultation with SP Energy Networks is recommended to confirm.
- Dŵr Cymru Welsh Water has confirmed the site is crossed by an existing 6" clean water main. Review of the current site layout plan indicates the route of the main and associated easement could be retained in situ to avoid diversionary works. Formal consultation with Dŵr Cymru Welsh Water is recommended to confirm, and below ground survey works are recommended to confirm the location, depth, and route of the main within the site boundary.
- Diversionary works may be required on the clean water network to accommodate the construction of the site entrance of Bodnant Avenue. Trial excavations at the proposed site entrance location are recommended to confirm the extent of diversionary works required.

Cost Summary

Table 5.1 below summarises the total anticipated budget costs for the required utility works.

Please refer to the relevant section of the study for further detail.

Electricity	Budget Cost
Non-Contestable Works	£10,165.48
Contestable Connection Works	£132,000.00
Diversionary Works	N/A
Disconnection Works	N/A
Total Electricity Costs	£142,165.48
Gas	**Budget Cost**
Connection Works	N/A
Diversionary Works	N/A
Disconnection Works	N/A
Total Gas Costs	£Nil
Water	**Budget Cost**
Connection Works	£127,000.00
Diversionary Works	£16,000.00
Disconnection Works	N/A
Total Water Costs	£143,000.00
Openreach	**Budget Cost**
Connection Works	£Nil
Diversionary Works	N/A
Disconnection Works	N/A
Total Openreach Costs	£Nil
Budgetary sums exclude Value Added Tax, on-site civils, and principal contractor preliminaries.	

Table 5.1 – Cost Summary Table

6.0 Electricity

6.1 Existing Electricity Network

The electricity distribution network in the vicinity of the development site is under the ownership of SP Energy Networks and is operated within the terms of its Electricity Distribution License issued by Ofgem. The local electricity distribution network in the immediate vicinity of the site comprises of underground cables and associated substations operating at Extra High Voltage (EHV), High Voltage (HV) and Low Voltage (LV).

The figure below illustrates the location of existing SPEN infrastructure which has been extracted from its network records. The cables shown in green are operated at 33,000 Volts (EHV) and those shown in red are operated at 11,000 Volts (HV), and those shown in brown are operated at LV. Please refer to the infrastructure record appended to this study for further detail.

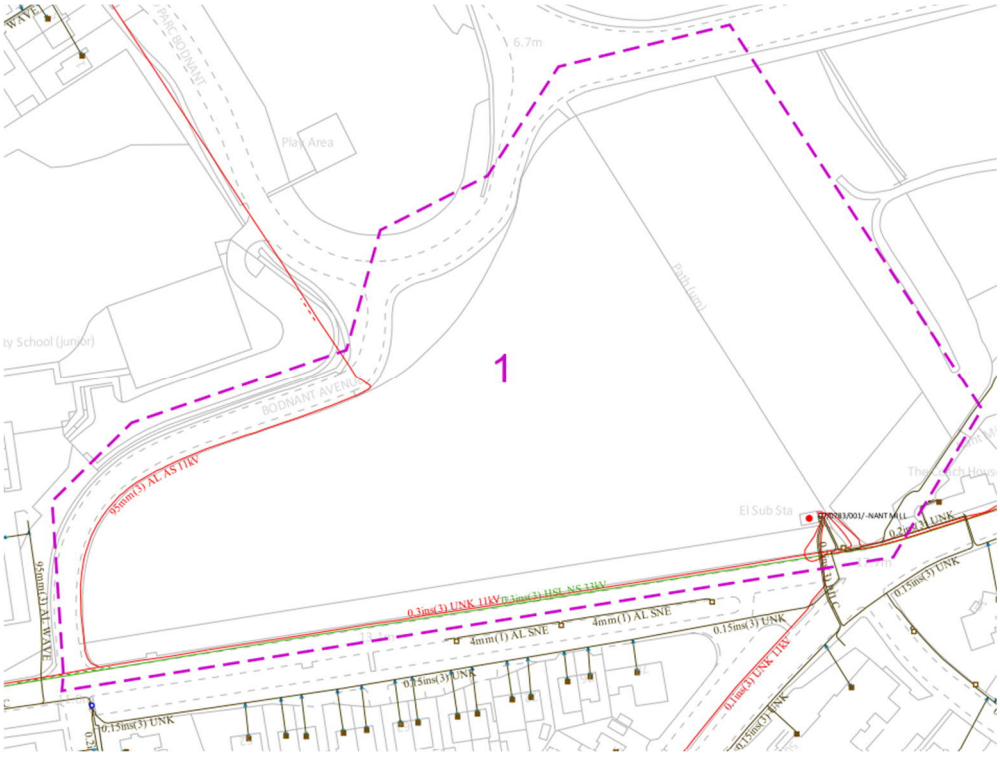
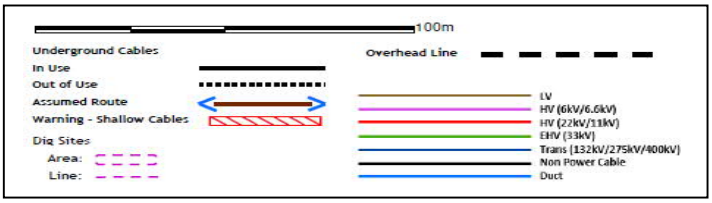


Figure 6.1 – Existing Electricity Infrastructure Plan



6.2 Connection Works

6.2.1 Non-Contestable Works

The non-contestable element of the connection works are works required to accommodate the provision of capacity for the development, which can only be undertaken by the relevant Distribution Network Operator (DNO). The non-contestable costs are covered within a Point of Connection (POC) quotation.

Based on the development information as outlined within the introduction, UCML has estimated the electrical load requirement for the proposed residential development of 62 no. dwellings to be 217 kVA, based on the use of electric heating and an allowance of 1 no. 7.4 kW rated Electric Vehicle (EV) charging point per dwelling. Based on this estimated load, UCML requested a Point of Connection quotation for the non-contestable works from SPEN.

SPEN has provided a POC quotation for a load of up to 217 kVA, confirming the development can be connected to the 11 kV HV distribution network. The POC provided is from an existing 11 kV HV cable routed to the existing substation located within the development site boundary, as indicated in Figure 6.2 below.

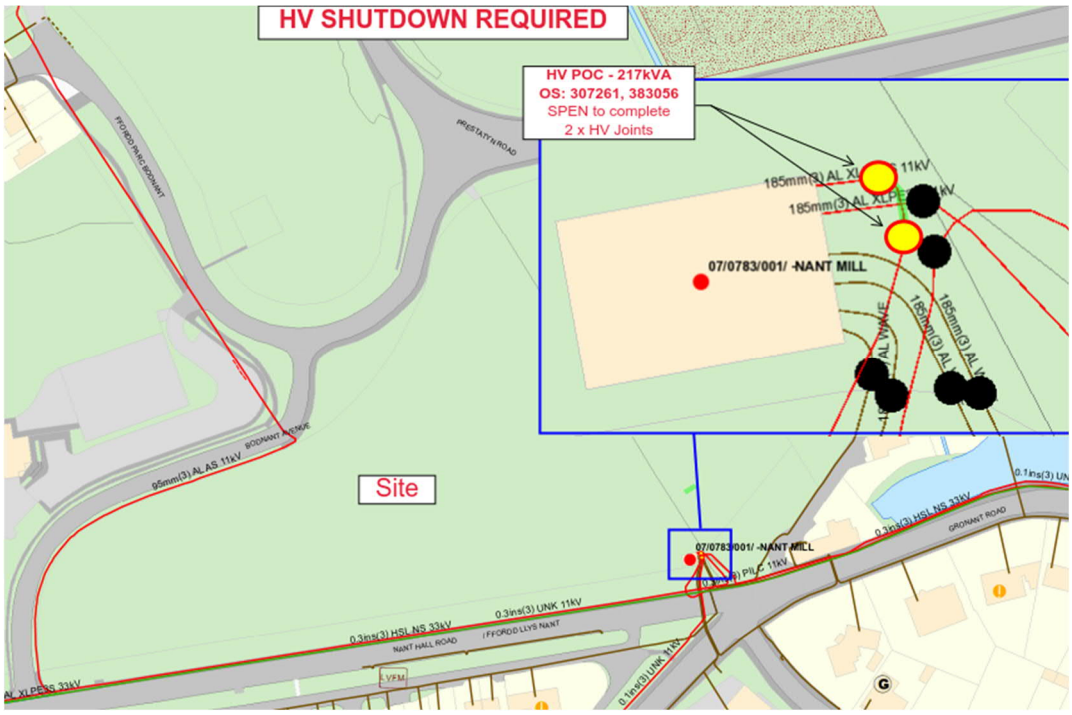


Figure 6.2 – Plan showing electricity HV Point of Connection

SPEN has advised that, based on current network availability, there is sufficient electric capacity available within the existing electricity infrastructure to serve the proposed development; therefore, no reinforcement works are currently required. However, no capacity can be reserved until payment is made for a valid SPEN non-contestable POC offer.

As part of the non-contestable works SPEN will undertake ICP design approval and inspections. Cable jointing works for the POC will typically be undertaken by a SPEN Engineer. Please refer to Section 6.2.2 for further detail on the associated contestable connection works required to utilise the provided HV POC.

The total cost and breakdown of the SPEN non-contestable POC is detailed below;

Description	Cost
Assessment Charges	£1,300.00
Design Charges	£1,040.00
Operational Work	£4,757.50
Legal Costs	£2,288.00
Inspection Charges	£780.00
Total Non-Contestable Charges	£10,165.50

Table 6.1 – Point of Connection cost breakdown

6.2.2 Contestable Works

The contestable element of the connection works are works required to construct the proposed new network for the development, which can be undertaken by the relevant DNO. Alternatively, an Independent Connection Provider (ICP) can be appointed to complete the works.

Based on the confirmed non-contestable POC provided by SPEN, the following contestable connection works will need to be undertaken to provide connections to the proposed dwellings;

- Lay HV cabling from Point of Connection to proposed substation position.
- Supply, install and commission the following within the substation housing;
  - High Voltage Ring Main Units
  - 1 no. 500kVA 11kV/433v distribution transformer
  - Low Voltage distribution board
- Lay LV mains infrastructure on-site.
- Install LV service connections to each dwelling, and connect to LV mains infrastructure.

Allow a budget cost of £132,000.00 for the contestable works. This is based on the confirmed Point of Connection being located within approximately 80 metres of the on-site secondary substation.

The cost provided is based on the developer undertaking all on-site excavation, reinstatement and civils works. Based on the location of the provided POC being from an 11 kV HV cable routed within the red line boundary as shown on the layout plan, it is assumed all excavation and reinstatement works will be classed as on-site, with HV cables routed to potential substation location in the green space adjacent to Plot 1 following the on-site footpath and road network.

The on-site civil works will include the construction of the substation concrete plinth and housing to the DNO, or appointed Independent Network Operator (IDNO), standard.

As discussed overleaf, the use of a HV POC will trigger the requirement for a secondary substation to be constructed on-site. To accommodate the construction of a secondary substation, a parcel of land of approximately 5m x 5m, along with suitable access and egress, will need to be allowed within the development boundary to accommodate the substation compound.

It should be noted that the use of an ICP to undertake the contestable connection works discussed in this section provides the opportunity to open the contestable element of the works to competitive tender, which may provide significant cost savings in comparison to the DNO undertaking the works.

If an ICP is appointed, the network can then be adopted by an Independent Distribution Network Operator (IDNO). The license of an IDNO allows for an asset value to be offered to the appointed ICP for the adoption of the constructed network. The asset value offered by the IDNO reflects the anticipated value in adopting the newly constructed network, based on the expected revenue that may be generated from the acquisition of new customers. The cost incurred by the ICP in constructing the network may be offset by any asset value offered by the IDNO, which could provide further cost savings.

6.3 Diversionary Works

SPEN infrastructure record indicates an existing secondary substation (SPEN ref. 07/0783/001/ - Nant Mill) located within the development site boundary. The substation is located in the south east of the site, near to the boundary with Nant Hall Road. Also shown are a number of 11 kV HV and LV cables routed to and from the substation compound.

Due to the cost and timescales associated with the relocation of a substation, it is generally recommended that the location of an existing substation with a site boundary is incorporated into the development design. Review of the current site layout plan indicates the substation compound could be retained in situ, and the route of existing cables to and from the compound off Nant Hall Road will be retained in green space or footpath. It is recommended that formal consultation is undertaken with SPEN at the earliest appropriate opportunity to confirm the substation can be retained in situ.

It should be noted that there is a minimum distance that needs to be maintained between a substation and the nearest domestic dwelling. For a brick built substation housing, the minimum distance is typically 3 metres. Review of the current site layout plan indicates the nearest plot to the substation, Plot 10, is located at sufficient distance.

SPEN infrastructure record indicates a 33 kV EHV cable, 11 kV HV cables, and LV cables routed within the site side footpath of Nant Hal Road. Based on review of the current site layout plan, these cables appear to be unaffected by the development proposals as no works are shown as planned within the footpath.

SPEN infrastructure record indicates an 11 kV HV cable routed within the site side footpath of Bodnant Avenue to the development site boundary, on the western side of the site. Again, based on review of the current site layout plan, these cables appear to be unaffected by the development proposals as no works are shown as planned within the footpath.

6.4 Disconnection Works

SPEN infrastructure record does not indicate any existing service cables within the development site boundary. As desktop review indicates the site is greenfield, it can be assumed none are present. No disconnection works are currently anticipated.

6.5 Conclusion – Cost & Risk Analysis

Costs relating to the reconfiguration of the existing SPEN distribution system are identified in the following table;

Detail	Cost
Non-Contestable Works	£10,165.48
Contestable Connection Works	£132,000.00
Diversionary Works	None currently anticipated
Disconnection Works	None currently anticipated
Total	£142,165.48

Table 6.2 – Electricity costs

The main risks associated with the procurement of proposals and required works are as follows;

- Some figures have been applied based on previous projects of similar size and UCML's experience, others have been provided for budgetary purposes by SPEN.

- The Point of Connection is valid for only 3 months from submission. The network capacity can only be reserved upon submission of signed acceptance and a suitable design from either an Independent Connection Provider or Independent Distribution Network Operator.

- Legal agreements corresponding with the proposed substation installation may cause time delays. To mitigate any potential negative impact on the project programme, it may be prudent to ensure solicitors representing all relevant parties start communication at the earliest opportunity.

7.0 Gas

7.1 Existing Gas Network

The local Gas Distribution Network in the vicinity of the development site is owned and operated by Wales & West Utilities under its Gas Transportation License issued by Ofgem. The gas network in the immediate vicinity of the site comprises of gas mains and apparatus operating at Low Pressure (LP).

The figure below is an extract from Wales & West Utilities statutory records and details the currently indicated position of existing infrastructure, however it may be prudent to undertake a below ground survey to ensure there are no services present which are not recorded on statutory records. Please refer to the infrastructure record appended to this study for further detail.

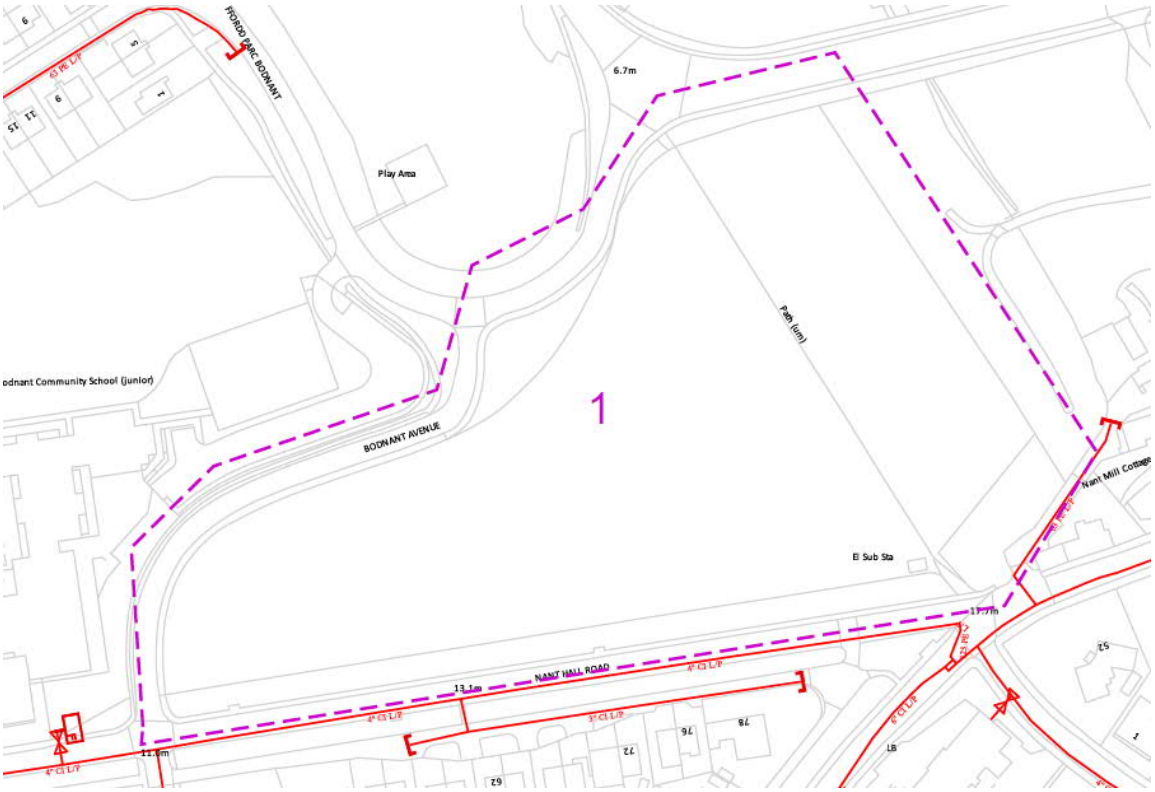
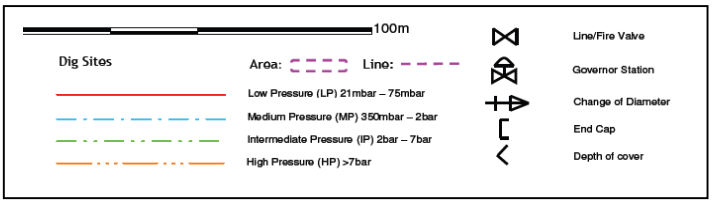


Figure 7.1 – Existing gas infrastructure plan



7.2 Connection Works

As outlined within the introduction, it is currently anticipated that the development will utilise an electrical heating strategy. Therefore, there is no current requirement for mains gas connections.

7.3 Diversionary Works

Wales & West Utilities infrastructure record indicates a 4" cast iron LP main routed within the adjacent side footpath of Nant Hall Road to the development site boundary. Based on the location of the main and the assumption no alterations will be made to the adjacent footpath as part of the development works, this main appears unaffected by the development proposals.

7.4 Disconnection Works

Wales & West Utilities do not typically indicate individual service pipes and associated apparatus on their records; however, their presence should be anticipated until proven otherwise. In this instance, as the development site is greenfield, it can be assumed none are present. No disconnection works are currently anticipated.

7.5 Conclusion – Cost & Risk Analysis

Costs relating to the reconfiguration of the existing Wales & West Utilities network are identified in the following table;

Detail	Cost
Connection Works	N/A
Diversionary Works	None currently anticipated
Disconnection Works	None currently anticipated
Total	£Nil

Table 7.1 – Gas costs

The main risks associated with the procurement of proposals and required works are as follows;

- If the development reverts to requiring mains gas connections, consultation will be required with Wales & West Utilities to confirm the availability of capacity within the local network and confirm a connection point for the development.

8.0 Water

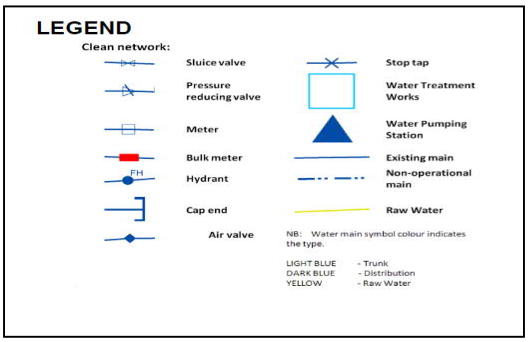
8.1 Existing Water Network

The local clean water distribution network in the vicinity of the development site is owned and operated by Dŵr Cymru Welsh Water within the terms of its statutory license issued by Ofwat. The clean water network in the immediate vicinity of the site comprises of distribution water mains and associated apparatus. Please refer to the infrastructure record appended to this study for further detail.

The figure overleaf is an extract from Dŵr Cymru Welsh Water statutory records and details the current indicated position of existing infrastructure, however it may be prudent to undertake a below ground survey to ensure there are no unknown services which are not recorded.

Please note on rare occasions 'out of area' water supply authorities have water mains crossing other water supply authority areas. This is typically trunk or raw water mains transporting water extracted from reservoirs or water courses between areas. Unless stated otherwise, UCML's utility study covers the statutory water network operator for this region as identified within the introduction only.

Figure 8.1 – Existing water infrastructure plan



8.2 Connection Works

UCML has sourced a pre-development response from Dŵr Cymru Welsh Water to establish the availability of capacity within the local distribution network, and confirm the likely connection point for the development. Dŵr Cymru Welsh Water has advised that a connection point for the development can be provided from the 6" unplasticised polyvinyl chloride main routed within the development site. Dŵr Cymru Welsh Water has also confirmed that this main currently has sufficient capacity to supply the development without the requirement for associated off-site reinforcement works. Please see Figure 8.2 below for further detail on the location of the provided point of connection.

Figure 8.2 – Proposed water connection plan

The provision of new water mains could be carried out under Section 41 of the Water Act 1991 whereby the developer may elect to pay a commuted sum amount based on projected occupancy of the units. This cost would be provided by Dŵr Cymru Welsh Water once they have prepared a mains design for the site. In advance of this, a budget cost of £127,000.00 is recommended for mains and connections.

A Phase 2 ground investigation and risk assessment will be required to precisely identify contaminated and uncontaminated ground within the site. The level of contamination on-site will determine the material used for the water mains and service pipes on-site. If the level of contamination is low, standard polyethylene pipe could be used. However, if the level of contamination on-site is determined to be high, the site will require the use of barrier pipe laid in a sterile trench. Should the use of barrier pipe be required, this will increase the cost of connections significantly. As this is generally a greenfield site, it has been anticipated that the levels of contamination may be low and so standard polyethylene pipe could be used.

The Domestic Fire Safety (Wales) Measure, which was passed by the Welsh Assembly Government in February 2011, requires the installation of domestic fire sprinkler systems within all new build residential dwellings constructed from January 2016. The responsibility for the design of the sprinkler system will rest with the developer, installer or domestic fire sprinkler system designer, and the system should be in accordance with BS 9251:2014 (Fire Sprinkler Systems for Domestic and Residential Occupancies – Code of Practice) or BS 8458:2015 (Fixed Fire Protection Systems – Residential and Domestic Watermist System – Code of Practice for Design and Installation).

Dŵr Cymru Welsh Water will be required to assess the proposed fire sprinkler system design as part of their obligation to comply with the Water Regulations to ensure they meet the national requirements for design, composition and maintenance for water fixtures and fittings. For all single dwellings requiring a combined domestic and water/fire sprinkler system, a 32mm metered connection will be provided. Any water used by domestic fire sprinklers for firefighting purposes will not incur charges, and a rebate will be made for any water used for firefighting.

Several options are available for the fire sprinkler systems installed within residential apartment blocks and multi-occupancy premises. Dŵr Cymru Welsh Water will not provide design guidance for sprinkler systems, the responsibility for the design of a suitable system for a development rests with the developer, installer, or domestic fire sprinkler system designer.

8.3 Diversionary Works

Dŵr Cymru Welsh Water infrastructure record indicates the development site is crossed by an existing 6" unplasticised polyvinyl chloride main (which, as noted in the previous section, will provide a connection point for the new development). Also indicated are a number of valves, including sluice valves and a pressure reducing valve, located near to the existing electricity substation.

Based on review of the current site layout plan, the route of the water main appears to follow the line of the proposed travel footpath and does not directly conflict with any proposed dwellings on-site. it may be possible to retain the main and valves in their current position provided the easement conditions associated with the main can be achieved. This would negate any costs associated with the diversion of the main.

Dŵr Cymru Welsh Water has confirmed the easement distance associated with the main is 6 meters in total, extending 3 metres either side from the centre point of the main. No permanent structures can be built within the easement, no significant increase or decrease in ground cover is permitted, and protection of the main will be required during construction works. It is recommended that below ground survey works, such as a Ground Penetrating Radar (GPR) survey and trial excavations, to confirm the route of the main across the site and the depth below ground. Once these survey works are completed, it is recommended that consultation with Dŵr Cymru Welsh Water is then undertaken to confirm the main can be retained in situ and for them to advise on suitable protection measures during construction.

Please note, the easement strip must been maintained as clear open space, with 24 hour access and egress along the full length and width, to ensure Dŵr Cymru Welsh Water can access their apparatus for maintenance and repair.

Dŵr Cymru Welsh Water indicates a distribution main routed within the site side footpath of Ffordd Parc Bodnant to the development site boundary, which will be affected by the construction of the proposed site entrance. Diversionary works may be required to lower the main across the site entrance location, depending on the existing depth of the main below ground level.

It is recommended that hand dug trial hole excavations are undertaken to establish the exact depth and location of the main as, should it be proven that this main is currently at a depth of 900mm or more from the proposed finished ground cover level, the requirement for diversionary works may be negated through consultation with Dŵr Cymru Welsh Water. If the apparatus is proved shallow and diversionary works required, allow a budget cost of £16,000.00 for the works. This is based on a maximum diversion distance of 20 metres, and assuming the main is no more than 160mm in diameter.

8.4 Disconnection Works

Dŵr Cymru Welsh Water do not typically indicate individual service pipes and associated apparatus on their records; however, their presence should be anticipated until proven otherwise. In this instance, as the development site is greenfield, it can be assumed none are present. No disconnection works are currently anticipated.

8.5 Conclusion – Cost & Risk Analysis

Costs relating to the reconfiguration of the existing Dŵr Cymru Welsh Water network distribution system are identified in the following table;

Detail	Cost
Connection Works	£127,000.00
Diversionary Works	£16,000.00
Disconnection Works	None currently anticipated
Total	£143,000.00

Table 8.1 – Water costs

The main risks associated with the procurement of proposals and required works are as follows;

- Some figures have been applied based on previous projects of similar size and UCML's experience, others have been provided for budgetary purposes by Dŵr Cymru Welsh Water.

- The pre-development response is valid for only 12 months from submission. The available network capacity can vary continually, due to proposed developments taking capacity from the water distribution network within the vicinity of this specific scheme.

- The developer cannot reserve any water capacity and pressure until a formal order has been placed with the relevant water Network Operator.

- Please be aware that the position of any required fire hydrants will be determined and implemented upon the advice and requirements of the Local Fire Authority.

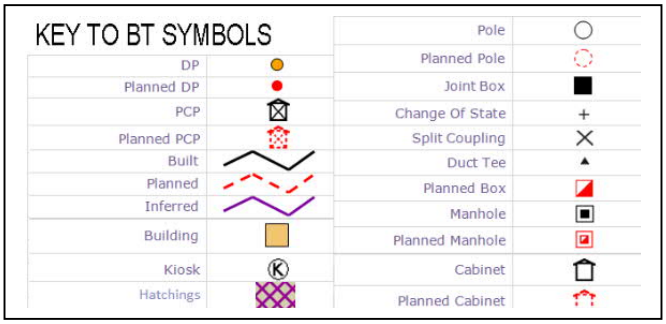
9.0 Communications

9.1 Openreach

Openreach own and operate telecommunications apparatus in the vicinity of the development site within the terms of its statutory license issued by Ofcom. The Openreach network in the immediate vicinity of the site comprises of underground cables, overhead lines, and associated apparatus. Please refer to the infrastructure record appended to this study for further detail.

The figure below is an extract from Openreach records and details the current indicated position of existing infrastructure, however it may be prudent to undertake a below ground survey to ensure there are no unknown services which are not recorded.

Figure 9.1 – Existing Openreach infrastructure



9.1.1 Connection Works

Openreach provide a Fibre to the Premise (FTTP) connection design as standard for new developments. FTTP connections will provide ultrafast broadband speeds to each dwelling and deliver a level of future proofing for broadband as the demand for speed increases. Openreach will provide an allowance of up to £3,400.00 per plot to undertake all off-site works required, however any costs incurred above this allowance will be chargeable to the developer. As the development consists of over 20 no. residential dwellings, Openreach will likely provide FTTP connections free of charge.

Openreach FTTP network is constructed as an Open Access Network, allowing multiple Internet Service Providers (ISPs) to provide services to future residents and customers utilising the same infrastructure. The installation of Open Access Networks mitigate the requirement for multiple service providers installing duplicate infrastructure within the development site.

Typically, the work undertaken by the developer as part of an Openreach FTTP network installation will consist of laying on-site duct and tubing, building all joint boxes, and providing a cable from a designated joint box to each dwelling (with cappings and covers over external entry points). Openreach will carry out all excess construction works outside of the site boundary and in the public highway.

For a FTTP installation, the developer will need to sign a contract and Wayleave agreement with Openreach. This is a legal requirement for Openreach to install and access its infrastructure. However, if the installation of an independent fibre network is being considered for the development site, exclusivity may be required and therefore the Openreach wayleave should not be signed until it is confirmed an independent third party fibre provider will not be used.

As part of the contract for the installation of Openreach connections, the developer may receive a rebate of up to £140.00 per house and £50 per flat for carrying out on-site works as detailed within the contract provided with their connection proposal. The rebate is in line with

the Home Builders Federation (HBF) rates and are payable by BT Plc through its Openreach division.

For the installation of FTTP within an individual dwelling, an Optical Network Termination (ONT) will be installed. The ONT is the Openreach demarcation point and replaces the traditional copper master socket. The Openreach ONT will sit in a wall mounted enclosure along with a Battery Backup Unit (BBU) and the associated wiring. The ONT will include an optical port which connects to the external Customer Splice Point (CSP), an Ethernet port which connects to the communications provider's router, and a telephony port to connect to the voice call network.

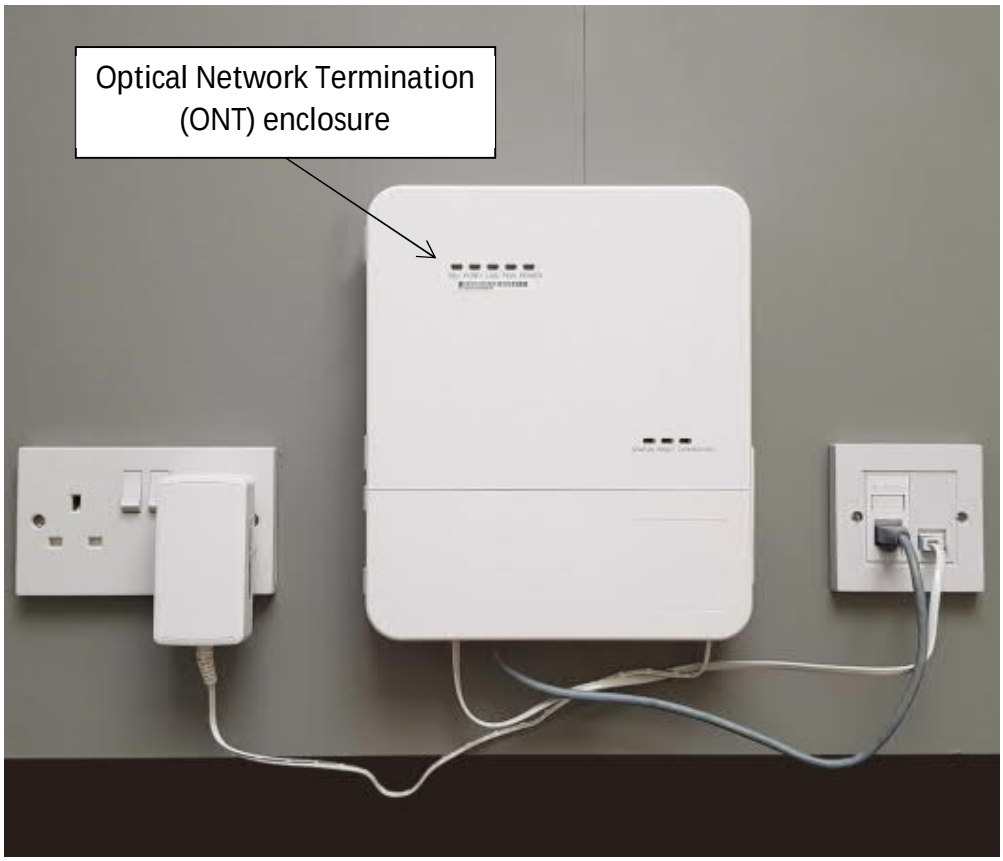


Figure 9.2 – Openreach FTTP Internal Equipment

For all sites installing Openreach Full Fibre Infrastructure, the ONT will be installed by an Openreach engineer. The ONT will be installed at the position of the incoming fibre cable. Figure 9.3 below illustrates the typical installation for the FTTP equipment in a domestic dwelling, where the ONT and associated equipment is located adjacent to the outside wall where the incoming fibre cable is located.

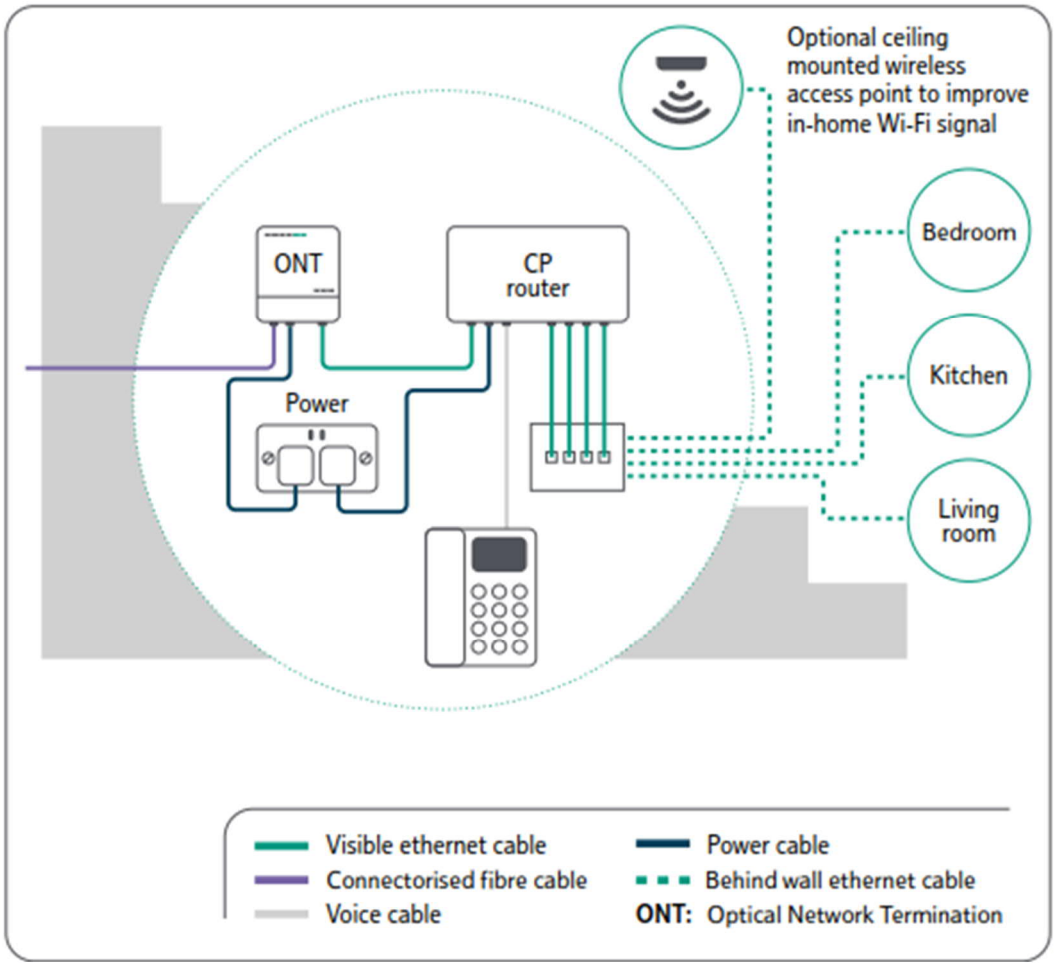


Figure 9.3 – Typical FTTP installation

9.1.2 Diversionary Works

Openreach infrastructure record indicates a section of overhead apparatus routed along the adjacent side verge of Nant Hall Road to the development site. Near to the junction with Gronant Road, a section of overhead line is shown as crossing the carriageway to supply a distribution pole located on the site side verge. Review of the current site layout plan indicates the verge where the pole is located will be retained; therefore, it is assumed the pole and associated overhead lines can be retained with no diversionary works currently anticipated.

Openreach infrastructure record indicates a section of underground duct routed within the site side verge of Bodnant Avenue, outside of the site red line boundary. The record indicates the duct route crossing the carriageway of Ffordd Parc Bodnant, and continues within the adjacent side verge. The location where the duct route crosses the carriageway appears to be in the immediate vicinity of the proposed site entrance location; however, as the apparatus is routed across the carriageway in this location it is assumed to be located at sufficient depth and the apparatus may not be affected to the extent diversionary works are required. this is assuming the level of the existing carriageway will not be altered during the entrance construction. If trial holes are undertaken at the entrance location to confirm the location and depth of the water main as discussed in Section 8, these could also prove the Openreach duct is not within the footpath at this position.

9.1.3 Disconnection Works

Openreach do not typically indicate individual service connections on their records; however, their presence should be anticipated until proven otherwise. In this instance, as the development site is greenfield, it can be assumed none are present. No disconnection works are currently anticipated.

9.1.4 Conclusion – Cost & Risk Analysis

Costs relating to the reconfiguration of the existing Openreach distribution network are identified in the following table;

Detail	Cost
Connections	£Nil
Diversions	None currently anticipated
Disconnections	None currently anticipated
Survey Fees	N/A
Total	£Nil

Table 9.1 – Openreach Costs

The main risks associated with the procurement of proposals and the required works are as follows;

- Provisional sums have been applied based on previous projects of similar size and UCML's experience.

- Openreach infrastructure records currently do not differentiate between copper and fibre optic cables, and as such the type of infrastructure within the ground cannot be determined through desktop review of their statutory infrastructure records. Please note, the presence of fibre optic cables could multiply anticipated diversion costs significantly.

10.0 Other

In addition to the statutory network operators operating within the vicinity of the development site, UCML has contacted several Independent Distribution Networks Operators (IDNOs), Independent Gas Transporters (IGTs), telecommunications providers, pipeline operators, and other third parties who own and operate apparatus nationwide to determine whether any apparatus is located within the vicinity of the development site.

The companies contacted, and their associated response, are summarised within Table 10.2 overleaf. Please refer to the key provided below for further detail on the definitions used.

Table Key	Definition
Affected	Utility apparatus is indicated as being located within the vicinity of the development site.
Not Affected	Utility apparatus is not indicated as being located within the vicinity of the development site.
No Response	No response has been received from the utility provider to date.
Desk Research	Any response determined from desktop research is indicated in this column. This indicates utility infrastructure records have been obtained in house using mapping software provided by the relevant utility provider.

Table 10.1 – Plant Enquiry Response Key

Utility	Company	Desk Research	Affected (date issued)	Not Affected (date issued)	No Response
IDNO	Leep Utilities	✓		16/08/2024	
IDNO	Utility Assets				26/09/2024
IDNO	Eclipse Power Networks Ltd			14/08/2024	
IGT	BBL Company				26/09/2024
IGT	GTC*	✓		06/08/2024	
IGT	Interconnector UK LTD				26/09/2024
Comms	Arqiva				26/09/2024
Comms	Arelion (formerly Telia Carrier)	✓		16/08/2024	
Comms	Cityfibre	✓		16/08/2024	
Comms	CA Telecom			06/08/2024	
Comms	Instalcom				26/09/2024
Comms	McNicholas (TATA)				26/09/2024
Comms	Mobile Broadband Network LTD			09/08/2024	
Comms	O'Connor Utilities**			14/08/2024	
Comms	Sky UK LTD			06/08/2024	
Comms	SOTA			12/08/2024	
Comms	Spectrum Communications				26/09/2024
Comms	Telent				26/09/2024
Comms	Verizon				26/09/2024
Comms	Vodafone				26/09/2024
Transport	National Highways			07/08/2024	
Transport	Network Rail			06/08/2024	
Other	Mastdata.com (Mobile Phone Masts)	✓		16/08/2024	

Table 10.2 – Plant Enquiry Responses

*Note GTC includes: GTC Pipelines Ltd, Independent Pipelines Ltd, Quadrant Pipelines Ltd, Electricity Network Company Ltd, Independent Power Networks Ltd, Independent Water Networks Ltd, Independent Fibre Networks Ltd, and Independent Community Heating Ltd.
** O'Connor Utilities includes: Lumen Technologies (formerly CenturyLink Communications UK Limited, Level 3, Global Crossing (Uk) Ltd, Global Crossing PEC, Fibernet UK Ltd and Fibrespan Ltd.

Optional Searches

Some utility providers are rarely confirmed to be in the vicinity of infrastructure record searches and are therefore only included within the search upon request, as the charge per enquiry is disproportionate to the number of affected responses received. Please advise UCML if you would like to include these additional searches at an additional cost. These optional searches are as follows;

Optional Searches		
IDNO	Harlaxton	Approximate cost £35 (plus VAT)
IDNO	UK Power Distribution	Cost ranges from £9 - £95 (plus VAT) subject to site size

Table 10.3 – Optional Searches

LinesearchbeforeUDig

Several asset owners are registered with LinesearchbeforeUDig (LSBUD), an online service used to review the location of utility assets in relation to a development site location. UCML has undertaken an LSBUD search for this development site, and the response is shown in Figure 10.1 below.

Affected LSBUD members **(LSBUD Members who have assets registered on LSBUD within the vicinity of your search area.)** **Do not proceed until all Members listed below have confirmed that your works can continue.**			
Asset Owner	**Phone/Email**	**Emergency Only**	**Status**
EirGrid	01244288353	01244288353	Await response
SP Energy Networks	08452734444	08000929290 / 105	Await response
Wales and West Utilities	02920278912	0800111999	Await response

List of not affected LSBUD members **(LSBUD Members who do not have assets registered on the LSBUD service within the vicinity of your search area.)**		
Angus Energy	AWE Pipeline	B & D Energy Limited
Balfour Beatty Investments Limited	BOC Limited (A Member of the Linde Group)	Box Broadband
BP Exploration Operating Company Limited	BPA	Cadent Gas
Cambridge Water	Cambridgeshire County Council Climate Change and Energy Services	CATS Pipeline c/o Wood Group PSN
Cemex	Centrica Storage Ltd	CNG Services Ltd
Concept Solutions People Ltd	ConocoPhillips (UK) Teesside Operator Ltd	D.S.Smith
Diamond Transmission Corporation	DIO (MOD Live Pipelines)	Drax Power Limited
E.ON UK CHP Limited	EDF Energy Renewables Ltd	EET Fuels
Eleclink Limited	Electricity North West Limited	Energy Assets Networks
ENI & Himor c/o Penspen Ltd	EnQuest NNS Limited	EP Langage Limited
ESB CCGT Power station (Carrington Gas Pipeline)	ESP Utilities Group	Esso Petroleum Company Limited
euNetworks Fiber UK Ltd	EXA Infrastructure	Exolum Pipeline System
Fulcrum Electricity Assets Limited	Fulcrum Pipelines Limited	Gamma
Gas Networks Ireland (UK)	Gateshead Energy Company	Gigaclear Ltd
Harbour Energy	Heathrow Airport LTD	Humbly Grove Energy
IGas Energy	INEOS FPS Pipelines	INEOS Manufacturing (Scotland and TSEP)
INOVYN ChlorVinyls Limited	INOVYN Enterprises Limited	Intergen (Coryton Energy or Spalding Energy)
Jurassic Fibre Ltd	Kensa Utilities	Last Mile
Mainline Pipelines Limited	Manchester Jetline Limited	Manx Cable Company
Marchwood Power Ltd (Gas Pipeline)	Melbourn Solar Limited	MUA Group Limited
National Gas Transmission	National Grid Electricity Distribution	National Grid Electricity Transmission
National Grid Ventures	Neos Networks	Northern Gas Networks Limited
Northumbrian Water Group	NPower CHP Pipelines	NTT Global Data Centers EMEA UK Ltd
NYnet Ltd	Ogi	Oikos Storage Limited
Ørsted	Palm Paper Ltd	Perenco UK Limited (Purbeck Southampton Pipeline)
Petroineos	Phillips 66	Portsmouth Water
Premier Transmission Ltd (SNIP)	Redundant Pipelines - LPDA	RWE - Great Yarmouth Pipeline (Bacton to Great Yarmouth Power Station)
RWEnpower (Little Barford and South Haven)	SABIC UK Petrochemicals	SAS Utility Services Ltd
Scottish and Southern Electricity Networks	Scottish Power Generation	Seabank Power Ltd
SES Water	SGN	Shell
Shell NOP	South Staffs Water	Spring Fibre Limited
Squire Energy Networks	SSE Generation Ltd	SSE Transmission
SSE Utility Solutions Limited	Storengy	Tata Communications (c/o JSM Construction Ltd)
TfL – London Underground HV Cables (Road Side Cables)	toob Limited	Total Colnbrook Pipelines
Total Finaline Pipelines	Transmission Capital	Trojan Energy Limited
UK Power Networks	Uniper UK Ltd	University of Cambridge Granta Backbone Network
Vattenfall	Veolia ES SELCHP Limited	Veolia ES Sheffield Ltd
Voneus Limited	VPI Power Limited	Welsh Power
West of Duddon Sands Transmission Ltd	West Sussex OpenNetwork (Cooperative National Infrastructure)	Westminster City Council
Zayo Group UK Ltd c/o JSM Group Ltd		

Figure 10.1 – LSBUD search result

11.0 Conclusion

Based on the information currently available for review, the existing utility infrastructure within the vicinity of the development site appears to be capable of supporting the additional demand required to provide connections for the proposed development of 62 no. residential dwellings. As discussed within the study, UCML has undertaken capacity checks with the relevant statutory network operators who have provided confirmation that the existing electricity, clean water, and telecoms services in the vicinity of the development site currently have sufficient capacity to serve the development.

Figure 11.1 below indicates the locations of the points of connection provided by the statutory utility operators in relation to this development.

Figure 11.1 – Location Plan indicating position of points of connection

Based on the information provided by the relevant network operators, no abnormal legal requirements are currently anticipated to utilise the proposed electricity or clean water connection points as they are both currently located within the development site boundary. It is assumed all mains laying works associated with utilising the provided points of connection can be completed within the development site boundary.

The connection costs provided in the main body of the report are based on individual utility connection proposals being accepted. It may be possible to undertake the connections works as part of a multi utility offering which can combine the installation of electricity, gas, water, and telecoms under a single works contract. For some sites, the appointment of a multi utility provider may be more cost-effective option for the connections.

12.0 Risk Matrix

Based upon the anticipated utility works required for this development discussed within this study, UCML has drawn up an indicative risk matrix for the development. For the risk matrix, each item is allocated a 'traffic light' score based on the anticipated risk to the development and associated timescales based on the key shown below.

Matrix Key	
	Do not envisage any major issues.
	Could cause delay that can be measured in weeks, and can also be prevented.
	Could cause delay that can be measured in months, and may be prevented.
	Could cause major delay, that may not be mitigated.

Utility	Risk
Electricity	
Connection Works – HV POC, on-site HV mains lay, installation of on-site secondary substation, on-site LV mains lay, and installation of LV service connections to each dwelling. Diversionary Works – None currently anticipated, provided existing on-site substation can be retained in situ. Disconnection Works – None currently anticipated.	
Gas	
Connection Works – None currently anticipated. Diversionary Works – None currently anticipated. Disconnection Works – None currently anticipated.	
Water	
Connection Works – On-site mains lay and installation of service connection to each dwelling. Diversionary Works – Site entrance diversion. No further works anticipated provided main crossing site can be retained in situ. Disconnection Works – None currently anticipated.	
Telecoms – Openreach	
Connection Works – FTTP network installation. Diversionary Works – None currently anticipated. Disconnection Works – None currently anticipated.	

Table 12.1 – UCML Risk Matrix

13.0 Street Works UK

Existing and new utilities are assumed to be located in accordance with the Street Works UK (formerly the National Joint Utility Group) guidelines. However, in reality, existing utilities are often not laid to these guidelines. Where new road entrances are being formed it is recommended that trial hole investigations are carried out to verify the precise position and depth of infrastructure. In some cases, if the utility infrastructures are sufficiently deep, this may enable the extent and cost of diversions to be reduced.

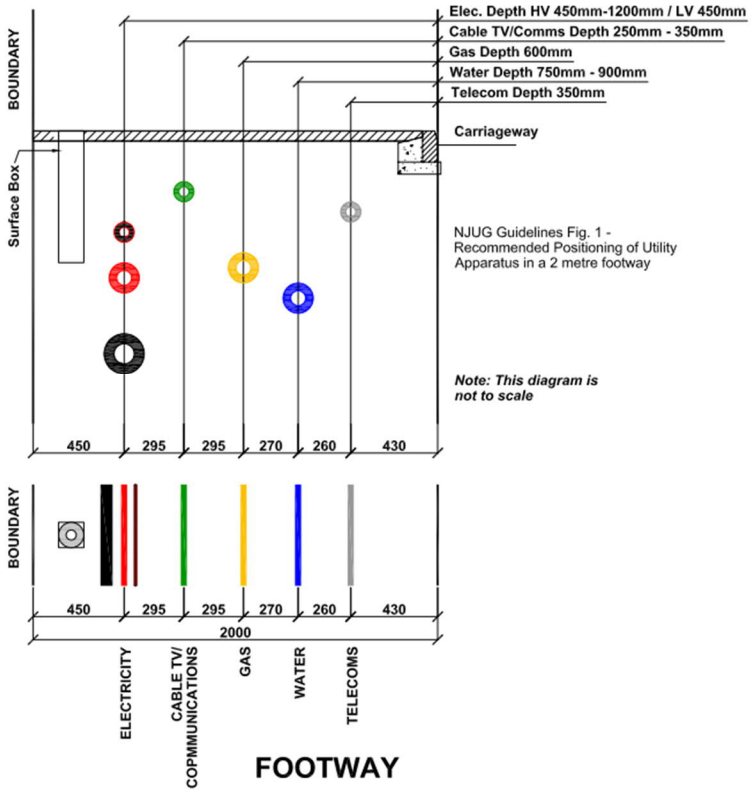


Figure 13.1 – Recommended positioning of utility apparatus in a footpath

The position and depths of underground and overhead apparatus as indicated on infrastructure records included within the utility study are approximate and may deviate from the marked route. The plan information shown is given without warranty and is derived from statutory network information provided by others. The accuracy thereof must not be relied upon in the event of any development or works without further below ground investigations taking place.

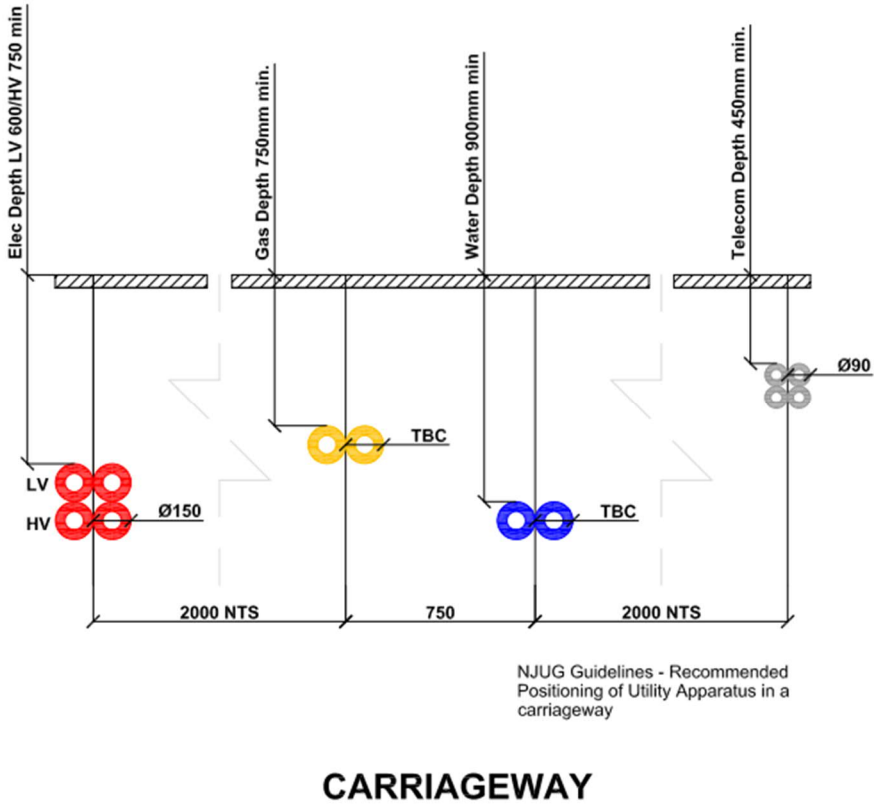


Figure 13.2 – Recommended positioning of utility apparatus in carriageway

When on-site, the contractor must use safe digging practices, in accordance with HSG 47, to verify and establish the actual position of mains, pipes, services, and any other apparatus on-site before any mechanical plant is used. The responsibility for locating the apparatus precisely before commencing any works rests entirely upon the person undertaking or directly responsible for those works.

The Contractor is to refer to the following documents before works commence within the vicinity of existing services;

- Health and Safety Guidance HSG 47 Avoiding Dangers from Underground Services.
- Health and Safety Guidance GS6 Avoiding Danger from Overhead Electric Lines.
- Street Works UK (formerly NJUG) Guidelines.
- General Safety Measures to Avoid Injury and Damage to Gas Apparatus.
- CDM Regulations 2015 (Regulation 25 – Energy Distribution Installations).

This desktop utility study covers statutory infrastructures surrounding the site. All information has been taken from the records of the statutory authorities and although this information is the most accurate available it may be prudent to undertake trial excavations in strategic locations to definitively determine the depth and location of infrastructure. Utility Providers Networks are constantly under review and subject to applications from other parties and the capacities and loads currently available may be subject to change.

The costs provided are advised as a predicted worst-case scenario of the foreseeable works. However, as these are only budget figures the actual costs entailed will not be determined until detailed proposals are received from the owners of the infrastructure.

Prepared by;
Joanne Blackburn BA (Hons) – Associate Director
Utilities Connections Management Ltd.

Checked by;
Ryan Elliman BEng (Hons) MIET – Senior Technical Engineer
Utilities Connections Management Ltd.

14.0 Further UCML Services

Pre-Construction Utility Consultancy

UCML's Pre-Construction Utility Consultancy service deals with the obtaining of capacity checks as well as disconnection, diversion, connection, service alteration and temporary supply quotations. These include electricity, gas, clean water, and telecom supplies for all forms of residential, commercial, and industrial developments. Use of our pre-construction consultancy services can result in;

- Considerable cost savings.
- Reduced overheads.
- Reduced timescales.
- Reduced delays.
- Reduced time expenditure.
- Removal of provisional sums from tender submissions.

The services provided by UCML's Pre-Construction Utility Consultancy service includes;

- Review of proposed meter positions to ensure technical and regulatory viability.
- Application for:
  - Existing statutory infrastructure records.
  - Disconnection quotations including meter removals where required.
  - Statutory infrastructure diversion quotations.
  - Temporary building supplies.
  - New connections quotations.
  - Legal searches including easement, wayleaves, and Land Registry title searches.
- Technical review of all quotations received including technical and commercial comparison across all competing quotes.
- Submission of successful quotations for acceptance.
- Single point of contact for project administration, and an assigned Technical Engineer to each scheme.

Delivery Coordination

UCML's Delivery Coordination service deals with the coordination of disconnections, diversions, connections, service alterations, capacity checks and temporary supply installations for all forms of residential, commercial, and industrial developments. Use of our Delivery Coordination service can result in:

- Improved program planning accuracy.
- Reduced time expenditure.
- Reduced abortive visit charges.
- Reduced delivery timescales and as a result less delays.

The services provided by UCML's Delivery Coordination service includes;

- Coordination of statutory connections from quotation acceptance to completion.
- Assigned Project Coordinator to the scheme to provide a single point of contact for site staff and attend site meetings and design team meetings as required.
- Provision of a site pack including existing and proposed drawings and relevant technical information relating to dimensions and layout of metering enclosures.
- Coordination of legal agreements required including wayleaves, easements, and adoption agreements.

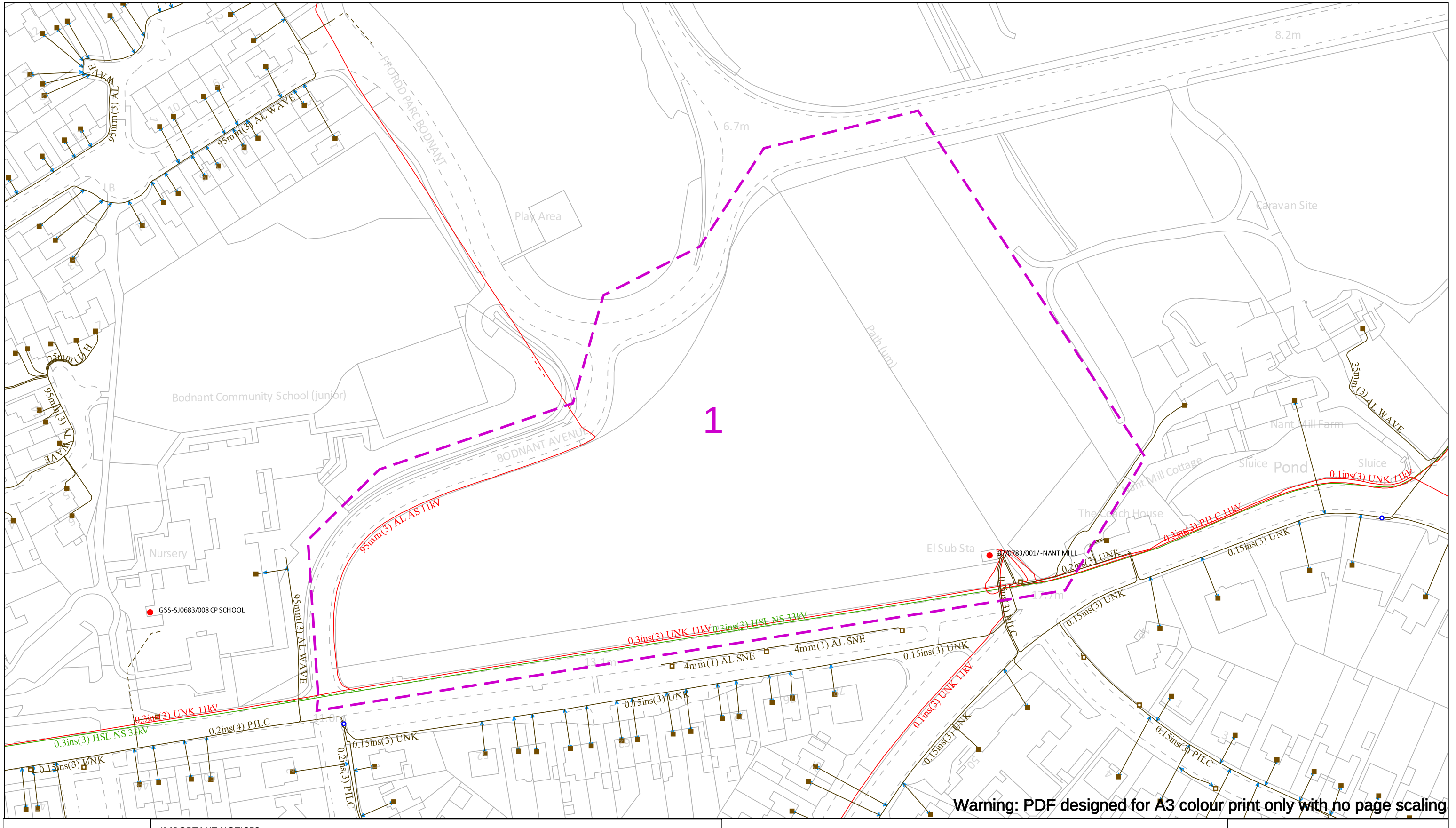
Appendices

Appendix 1 – SP Energy Networks Infrastructure Plan

Appendix 2 – Wales & West Utilities Infrastructure Plan

Appendix 3 – Dŵr Cymru Welsh Water Infrastructure Plan

Appendix 4 – Openreach Infrastructure Plan



Warning: PDF designed for A3 colour print only with no page scaling

Date Requested: 06/08/2024
Job Reference: 34302038
Site Location: 307198 383098
Requested by:
Miss Megan Wright
Your Scheme/Reference:
Bodnant Avenue

Scale: 1:1250 (When plotted at A3)

IMPORTANT NOTICES

- This information shown on this plan is indicative only and its accuracy cannot be guaranteed.
- The plan only shows assets owned by SP Energy Networks.
- Positions and depths of cables may have altered since being recorded. A line on a plan may represent more than one cable. Normally electric cables are laid at depths between 450mm and 1m but depths may have changed if land surface levels have since altered.
- The plan may not show, or may inaccurately show, individual property services and services to street lighting installations. Underground services may be found in roads, footpaths and on sites. Always assume that they are present for each property, lamp column and street sign etc and treat any services found anywhere as live.
- You must use safe digging practices in accordance with HS(G)47 to establish the actual position of mains cables, services and other apparatus before any mechanical excavation is used.
- Where overhead lines cross your site, you must comply with the requirements of Health & Safety Executive guidance as laid down in GS6, Avoidance of Danger from Overhead Electric Lines.
- Any works that fall within **5m** of any 132kv or Transmission cables, or within **15m** of any 132kV or Transmission OHL's, please contact our General Enquiries Team **0845 273 4444 / 0330 10 10 444** for further safety advice.
- In the event of an emergency or for further assistance contact **0800-092-9290 (Central & Southern Scotland) or 0800-001-5400 (Merseyside, Cheshire & North Wales) or by dialling 105**
- It is your responsibility to ensure this information is provided to all persons working near our plant.

100m

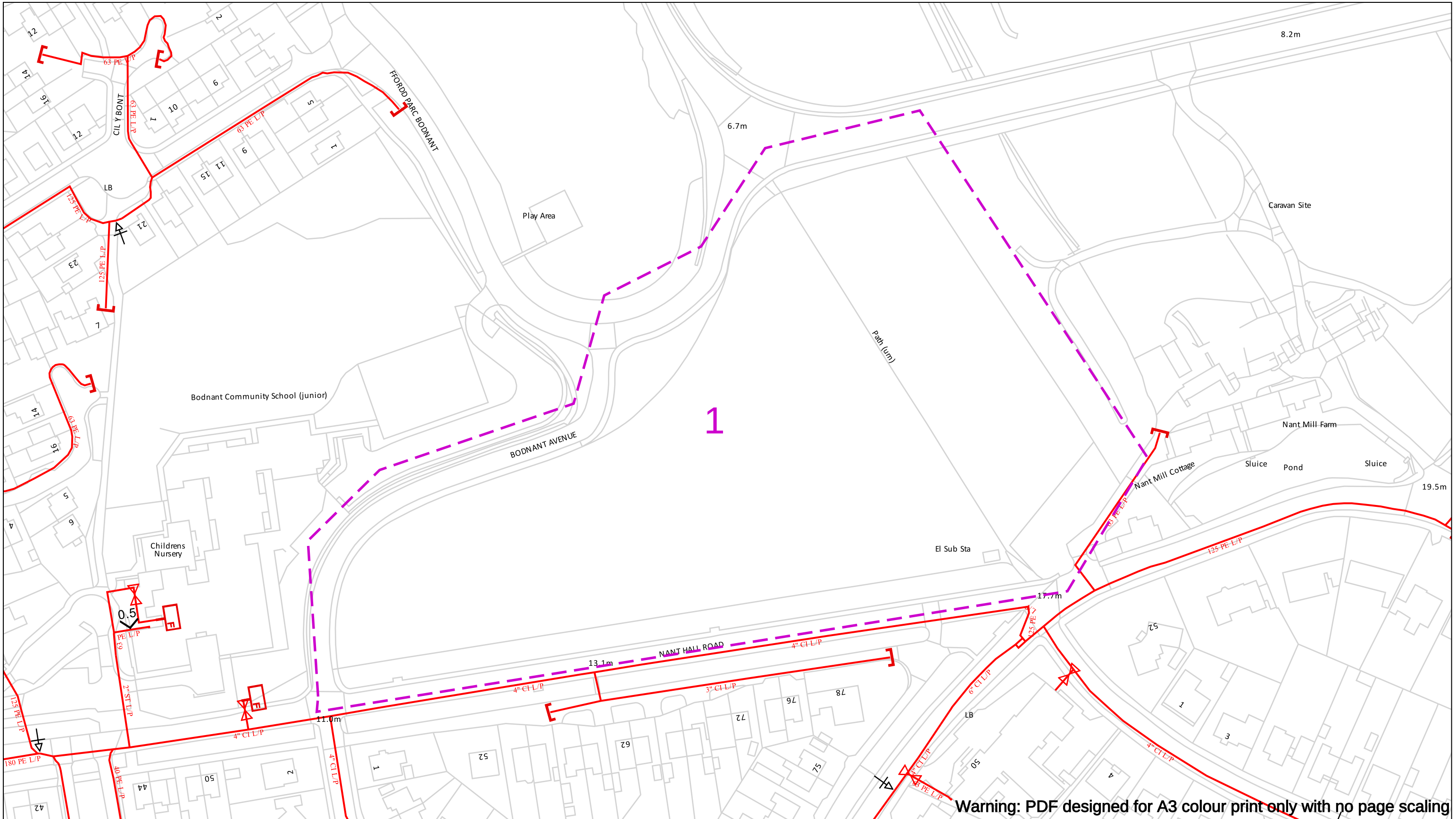
Underground Cables
In Use
Out of Use
Assumed Route
Warning - Shallow Cables

Overhead Line

Dig Sites
Area:
Line:

LV
HV (6kV/6.6kV)
HV (22kV/11kV)
EHV (33kV)
Trans (132kV/275kV/400kV)
Non Power Cable
Duct

SP ENERGY NETWORKS



Warning: PDF designed for A3 colour print only with no page scaling

Contact Us
Mapping Enquiries: 02920 278 912
General Enquiries: 0800 912 2999

Date Requested: 06/08/2024
Job Reference: 34302038
Site Location: 307198 383098
Requested by:
Miss Megan Wright
Your Scheme/Reference: Bodnant Avenue

Scale: 1:1250 (When plotted at A3)

IMPORTANT NOTICES

- This information is given as a guide only and its accuracy cannot be guaranteed
- The plan only shows those pipes owned by Wales & West Utilities (WWU) as its role as a licensed Gas Transporter
- Service pipes, valves, syphons, stub connections etc. may not be shown but their presence should be anticipated
- You must use safe digging practices in accordance with HS(G)47 to establish the actual position of mains, services and other apparatus before any mechanical excavation is used
- It is your responsibility to ensure this information is provided to all persons working near our plant
- If in doubt call the WWU dig team on 02920 278912

In case of an emergency call 0800 111 999

100m

Dig Sites

Area: Line:

- Low Pressure (LP) 21mbar – 75mbar
- Medium Pressure (MP) 350mbar – 2bar
- Intermediate Pressure (IP) 2bar – 7bar
- High Pressure (HP) >7bar

- Line/Fire Valve
- Governor Station
- Change of Diameter
- End Cap
- Depth of cover

WALES&WEST UTILITIES

Smell gas? Call the Gas Emergency Service on 0800 111 999.

Dial before you dig

Dial Call 029 2027 8912 before you start work.

Investigate Before you dig, make sure you know what's below.

Go ahead Done your research? Now you can dig safely.

We need 10 days' notice

Dŵr Cymru
Welsh Water

Bodnant Avenue, Prestatyn, LL19 9LP

N
W E
S

LEGEND

Clean network:

- Sluice valve
- Pressure reducing valve
- Meter
- Bulk meter
- Hydrant (FH)
- Cap end
- Air valve
- Stop tap
- Water Treatment Works
- Water Pumping Station
- Existing main
- Non-operational main
- Raw Water

NB: Water main symbol colour indicates the type.

LIGHT BLUE - Trunk
DARK BLUE - Distribution
YELLOW - Raw Water

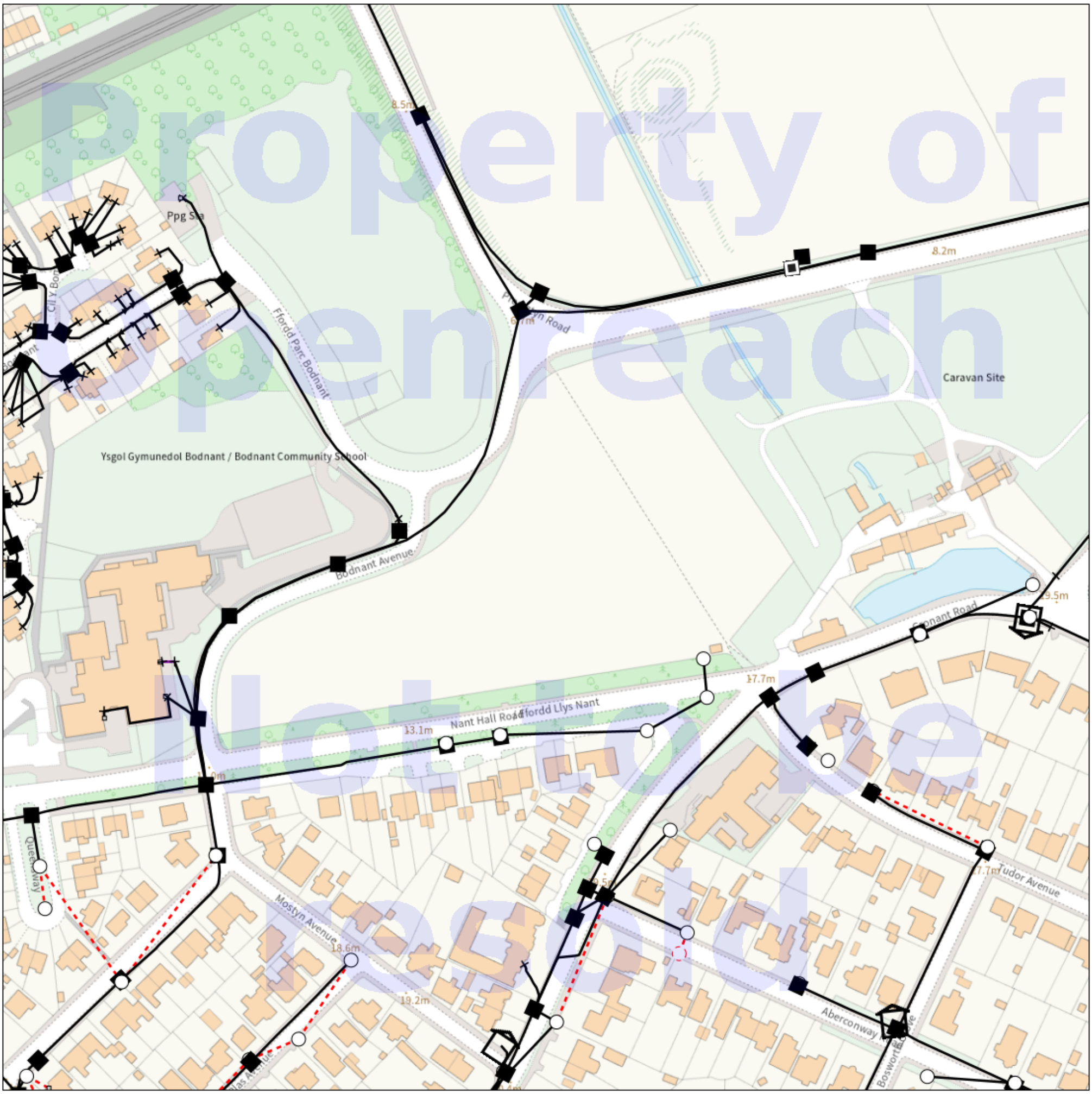
Notes:

Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases pipe material (other than Asbestos Cement or Pitch Fibre) may be found to be asbestos cement (AC) or Pitch Fibre (PF) . It is therefore advisable that the possible presence of AC or PF pipes be anticipated and considered as part of any risk assessment prior to excavation

EXACT LOCATIONS OF ALL APPARATUS TO BE DETERMINED ON SITE.

Map Ref:	307178,383100
Map scale:	1:1500
Printed by:	Tyrieque Golding
Printed on:	08 Aug 2024

Maps on Demand Plant Information Reply



IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy. It should not be relied upon in the event of excavations or other works being made newar to BT apparatus which may exist at various depths and may deviate from the marked route.

openreach

CLICK BEFORE YOU DIG

FOR PROFESSIONAL FREE ON SITE ASSISTANCE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS INCLUDING LOCATE AND MARKING SERVICE

email cbyd@openreach.co.uk

ADVANCE NOTICE REQUIRED
(Office hours: Monday - Friday 08.00 to 17.00)
www.openreach.co.uk/cbyd

Accidents happen

If you do damage any Openreach equipment please let us know by calling 0800 023 2023 (opt 1 + opt 1) and we can get it fixed ASAP

KEY TO BT SYMBOLS

	Planned	Live
PCP		
Pole		
Box		
Manhole		
Cabinet		

Change Of State	+
Split Coupling	×
Duct Tee	▲
Building	
Kiosk	K
Hatchings	
Built	
Planned	
Inferred	
Duct	

Other proposed plant is shown using dashed lines.
BT Symbols not listed above may be disregarded.
Existing BT Plant may not be recorded.
Information valid at time of preparation. Maps are only valid for 90 days after the date of publication.

	Pending Add	In Place	Pending Remove	Not In Use
Power Cable				
Power Duct				N/A

BT Ref : BBR10030F
Map Reference : (centre) SJ0717883100
Easting/Northing : (centre) 307178,383100
Scale : 1:500
Issued : 06/08/2024 10:03:48

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk