

Planning Report

Drainage & Utilities

Assessment

Strathmore Centre

Document information

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Assessment information

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Introduction

Drainage & Utilities Assessment

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About the scheme

The development proposals are for the construction of 2 blocks for residential purposes and a further building at the south of the site for the relocation of the Scamps nurseury. The residential blocks will provide 30 apartments varying in size from 1-bedroom apartments to 3-bedroom apartments, providing accommodation for 2 to 5 persons. The proposals also include for new amenity space and parking. The site currently consists of mixed-use developments, with the existing Scamps Nurseury to the north of the site, bound by Strathmore Road.

The OS grid reference for the site is X (Easting) 515137, Y (Northings) 171770, and the closest post code is TW11 8UH. The scheme is located in the London Borough of Richmond upon Thames and is required to obtain planning consent from the local planning authority, Richmond Borough Council.

Aim of this study

Eight Associates has been appointed to carry out an assessment of drainage and utilities services that may be affected by the Strathmore Centre development site.

The report assesses the likely demand from the Strathmore Centre development and implications for the relevant drainage and utilities services which may affect the development, including electricity, gas, water, foul water drainage, surface water drainage and telecommunications.

Data on drainage and utilities services has been obtained with a Utilities Essentials report, provided by Technics Group Ltd and based on provision of data by the relevant local drainage and utilities services providers. The Utilities Essentials report is included in Appendix A.

This report is based on information available at the time of preparation. Existing drainage and utilities services may have new third-party connections made to them at any time in the future. The advice given within this report are therefore subject to change and supplies cannot be confirmed and verified until formal applications to the drainage and utilities services providers have been accepted. This report is based on information supplied by drainage and utilities services companies, which has not been independently verified and for which Eight Associates cannot provide an explicit warranty as to its accuracy.

Estimates for drainage disposal and utilities supply demands have been based on information provided at the time of request, unless otherwise stated. Estimates for electricity, gas and water demand do not take into account reduction in load requirements, which may be achieved by the provision of water efficiency, energy efficiency and low and zero carbon technologies, in accordance with sustainability requirements. The demand estimates provided in this report are therefore expected to be conservative and should be developed and superseded by the detailed mechanical, electrical and drainage design for the development.

Introduction

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Consultation responses

The Utilities Essentials report, provided by Technics Group Ltd, includes consultation responses and supporting data provided by the relevant local drainage and utilities services providers. A summary of consultation responses and outcomes is given in Figure 1. Where drainage and utilities services are reported to be affected by works at the development site, the details and guidance in the corresponding pages of the Utilities Essentials report (Appendix A) should be read.

Utility Company	Responses	Outcome
Electricity		
UK Power Networks	4	Affected
Gas		
Southern Gas Networks	6	Affected
National Grid UK	1	Not Affected
Telecoms/Cable		
BT Openreach	1	Affected
Water and Sewers		
Thames Water	1	Affected

Figure 1: Summary of consultation responses.

Site Overview

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Site topography

A topographical survey of the site has been undertaken reference; '18120LS living-architects 1003/X02' and is shown in Figure 2.



Figure 2: Topographical plan of development site.

Site Overview

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Development proposals

The development proposals are for the construction of 2 blocks for residential purposes and a further building at the south of the site for the relocation of the existing Scamps Nursey. The residential blocks will provide 30 apartments varying in size from 1-bedroom apartments to 3-bedroom apartments, providing accommodation for 2 to 5 persons. The proposals also include for new amenity space and parking (Figure 3).



Figure 3: Proposed development site plan.

Foul Water Drainage Drainage & Utilities Assessment Strathmore Centre

Existing network

The Utilities Essentials report from Technics Group Ltd, includes one consultation response related to foul water drainage, provided by Thames Water. The Thames Water Asset Location Search Sewer Map (Figure 4 and Appendix A, page 83 of 97) indicates that there are no existing public foul water sewers within the site boundary.

The Thames Water map identifies a 225mm diameter foul water sewer located one road east of the proposed development within Strathmore Road. This sewer serves the existing buildings on Strathmore Road, before draining south, connecting the Thames Water manhole 1801, 2702 and 2602. Alternatively, to the east of the most northerly point of the site there is a foul water sewer on the Stanley Road intersection which contains Thames Water manhole 0802.

The topographical survey plan for the site, reference; '18120LS living-architects 1003/X02', does document the presence of inspection chambers, drainage channels, gulleys and road gulleys on the site but it has not been confirmed whether these features are for foul, surface water or combined sewerage.



Figure 4: Thames Water Asset Location Search Sewer Map.

Foul Water Drainage Drainage & Utilities Assessment Strathmore Centre

Demand assessment

The foul water discharge requirements for the new dwellings have been estimated based on the guidance in Sewers for Adoption 7th Edition, which recommends a design peak flow rate based of 4,000 litres/dwelling/day, or 0.05 litres/dwelling/sec. For the 30 dwellings, this equates to approximately 120,000 litres/day or 1.5 litres/sec.

The foul water discharge requirements for the Scamps Nursery building have been estimated based on a design peak flow rate based of 1,000 litres/person/day, or 0.01 litres/person/sec. For the total building, this equates to approximately 20,000 litres/day or 0.23 litres/sec.

Proposed strategy

There are buildings and drainage infrastructure present on the existing site. It is not currently confirmed whether there is a connection from the existing site to the local Thames Water foul water sewer. However, this is deemed to be likely, in order to serve the existing building.

It is anticipated that foul water from the proposed development will be discharged to the Thames Water 225mm diameter foul water sewer located east of the proposed development within Strathmore Road or to the connection on Stanley Road.

A developer enquiry should be made to Thames Water, to verify that there is sufficient capacity in the local foul water sewer, to receive the predicted foul water discharge from the development.

Once capacity has been verified and the design of foul water drainage has been undertaken, an application should be made to Thames Water, to secure approval to connect and discharge to the sewer.

It is recommended that a detailed survey should be undertaken to verify and establish the exact location of foul water sewers reported by Thames Water, prior to the commencement of site works.

Surface Water Drainage Drainage & Utilities Assessment Strathmore Centre

Existing network

The Utilities Essentials report from Technics Group Ltd, includes one consultation response related to surface water drainage, provided by Thames Water. The Thames Water Asset Location Search Sewer Map (Figure 2 and Appendix A, page 83 of 97) indicates that there are no existing surface water sewers within the site boundary.

The Thames Water map identifies a 225mm diameter surface water sewer located north of the proposed development, within Strathmore Road. The sewer within Strathmore Road serves the existing buildings on Simpson Road, before draining west, connecting the Thames Water manhole 0704. draining south, connecting the manhole 9008 and 9905.

The topographical survey plan for the site, reference; '18120LS living-architects 1003/X02', does not document the presence of any surface water drainage features in the existing site.

Demand assessment

Surface water drainage peak flow rates and volumes will be calculated with preliminary hydraulic modelling for the site. These results will be detailed in the SuDS Strategy report for Strathmore Centre, produced by Eight Associates in January 2020.

Proposed strategy

A preliminary strategy for surface water drainage has been produced and is detailed within the SuDS Strategy report for Simpson Road. The strategy will be developed in accordance with the sustainable drainage hierarchy and proposes the use of specific SuDS components within the drainage network.

A developer enquiry should be made to Thames Water, to verify that there is sufficient capacity in the local surface water sewer, to receive the predicted surface water discharge from the development.

Once capacity has been verified and the design of surface water drainage has been undertaken, an application should be made to Thames Water, to secure approval to connect and discharge to the sewer, if required.

It is recommended that a detailed survey should be undertaken to verify and establish the exact location of surface water sewers reported by Thames Water, prior to the commencement of site works.

Water Supply Drainage & Utilities Assessment Strathmore Centre

Existing network

The Utilities Essentials report from Technics Group Ltd, includes one consultation response related to water supply, provided by Thames Water. The Thames Water Asset Location Search Water Map (Figure 5 and Appendix A, page 89 of 97) indicates that there is an existing Thames Water pipe within the site boundary; a 4-inch distribution main near the northern boundary.

There is a 4-inch diameter distribution main present to the east of the site, within Strathmore Road. To the west of the site, within Stanley Road, there is a 4-inch diameter distribution main.



Figure 5: Thames Water Asset Location Search Water Map.

Water Supply Drainage & Utilities Assessment Strathmore Centre

Existing network (continued)

The topographical survey plan for the site, reference; '18120LS living-architects 1003/X02', does not document the presence of any other water pipes in the existing site.

Demand assessment

The water consumption of the new dwellings is subject to the performance requirements detailed in Building Regulations Part G, which includes a target for each dwelling to achieve 125 litres per person per day (l/person/day). The London Borough of Richmond has a planning policy requirement for new dwellings to achieve 105 l/person/day.

However, to conservatively assess peak demand for water supply, including during extended dry periods, a benchmark based on the maximum simultaneous use of water-consuming sanitaryware and appliances has been applied for the development (Table 1). The total peak demand for the residential development is estimated to be 15.6 litres per second, whilst Scamps Nursery has an estimated peak demand of 1.9 litres per second. Note that no allowance is included in these estimates for alternative water supplies, such as rainwater harvesting, or use of water-efficient sanitaryware and appliances. This is therefore considered to be a conservative estimate.

Table 1: Peak water demand estimates.

Building use	No. of units	Peak demand benchmark (litres/sec/unit)	Diversity ratio	Total peak demand (litres/sec)
Residential units	30	0.6	0.7	15.6
Nursey	1	1.9	1.0	1.9
Notes	–	<i>Based on feasible simultaneous consumption of taps, dishwashers, washing machines, WCs, showers and baths, benchmarked from previous projects.</i>	–	–

Water Supply Drainage & Utilities Assessment Strathmore Centre

Proposed strategy

Connections from new developments are typically made to distribution mains. Trunk mains carry water from a source of supply to a treatment plant or reservoir, from one treatment plant or reservoir to another, or carry water in bulk to smaller water mains used for supplying individual customers. Connections from domestic developments are not typically made to trunk mains. As the Scamps Nursery is a small-scale development, it is expected that the distribution mains should serve the nursery as well.

It is anticipated that connection to either the 4-inch diameter distribution main north of the site within Strathmore Road, or the 4-inch diameter distribution main to the west of the site, within Stanley Road, may be viable.

An application should be made to Thames Water, to secure approval to connect to the local water distribution mains.

It is recommended that a detailed survey should be undertaken to verify and establish the exact location of water distribution mains reported by Thames Water, prior to the commencement of site works.

Electricity Supply Drainage & Utilities Assessment Strathmore Centre

Existing network

The Utilities Essentials report from Technics Group Ltd, includes consultation responses from the following companies in relation to electricity supply:

- UK Power Networks (UKPN) – confirmed there is plant in the vicinity of the development site.

UK Power Networks (UPKN) Search Map (Figure 6 and Appendix A, pages 9 to 18 of 97) indicates that there are existing UKPN electrical distribution lines and plant within the site boundary.

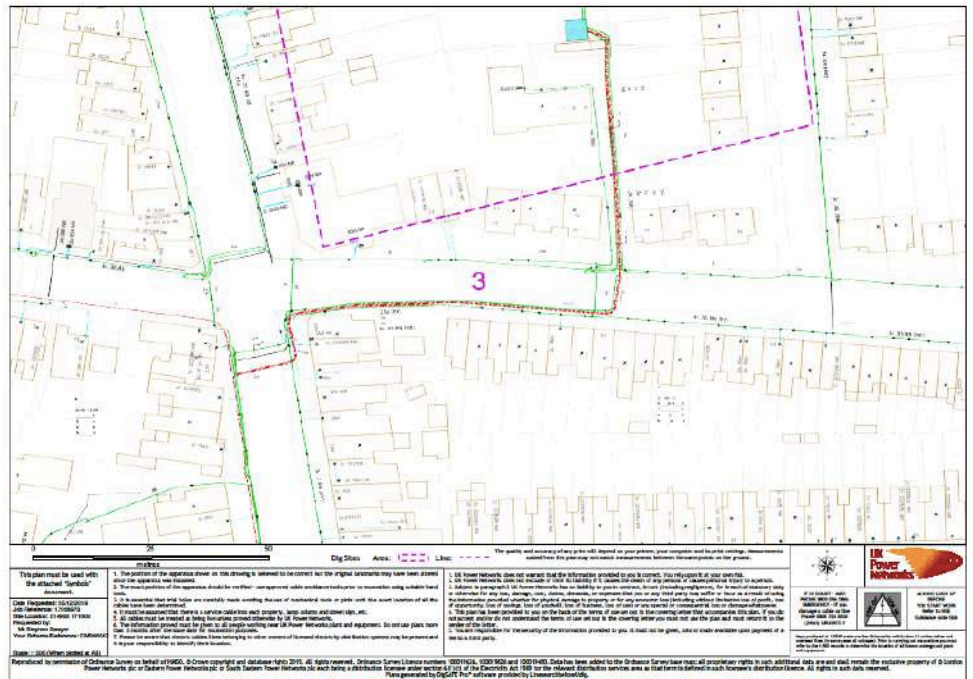


Figure 6: UK Power Networks Search Map for tile 3, covering south of Strathmore Centre site.

Low voltage (LV) plant

LV plant includes all electrical plant under 1,000V. There is an electrical substation located within the site boundary, at the south of the site. The substation serves a number of LV distribution lines from Strathmore Road and Shacklegate Lane, including LV and 11kV underground cables.

Electricity Supply Drainage & Utilities Assessment Strathmore Centre

Existing network (continued)

High voltage (HV) plant

HV plant includes all electrical plant between 1,000V and 11,000V. There is no HV plant confirmed as being present on, or in the vicinity of, the development site. It should be noted that National Grid (UK) has confirmed that there are underground cables present within the site boundary (at the east side) but the voltage has not been reported, so this could be HV plant.

Extra high voltage (EHV) plant

EHV plant includes all electrical plant over 11,000V. There is no EHV plant confirmed as being present on, or in the vicinity of, the development site. It should be noted that National Grid (UK) has confirmed that there are underground cables present within the site boundary (at the east side) but the voltage has not been reported, so this could be EHV plant.

Demand assessment

Hourly peak electricity demand has been estimated on the basis of a benchmark of 36.9kW per dwelling. A total peak instantaneous demand of approximately 983.7kVA can be expected for the total of 30 dwellings (Table 2). Moreover, the peak benchmark for the nursery has been calculated as 36.7kW/unit and a total peak instantaneous demand of approximately 33kVA. This figure does not account for the potential reduction in load requirements, which may be achieved by the provision of energy efficiency and low and zero carbon technologies. This is therefore considered to be a conservative estimate.

Table 2: Peak electrical demand estimates.

Building use	No. of units	Peak demand benchmark (kW/unit)	Diversity ratio	Total peak demand (kW)	Power factor	Total peak demand (kVA)
Residential	30	36.9	0.8	885.6	0.9	983.7
Nursery	1	36.7	–	36.7	0.9	33.0
Notes	–	<i>Based on gas central heating and natural ventilation, using BSRIA Rule of Thumb 5th Edition and benchmarking from previous projects.</i>	<i>Conservative assumption, based on diversity from 30 dwellings.</i>	–	<i>Conservative assumption, benchmarked from previous projects.</i>	–

Electricity Supply Drainage & Utilities Assessment Strathmore Centre

Proposed strategy

A separate detailed energy strategy should be developed for the Strathmore Centre development. For the purposes of this report, assumptions have been made based on the drawings that heating and hot water is provided by boilers connected to the gas mains and natural ventilation for both the residential units and the nursery.

It is anticipated that the electrical demand for the proposed development will be met with LV plant. As there is an existing electrical substation located within the Strathmore Centre site boundary, the preferred approach would be to connect to the existing electrical substation.

An application should be made to UKPN, to secure approval to make a new LV plant connection to the existing electrical substation.

It is recommended that a detailed survey should be undertaken to verify and establish the exact location of all electrical distribution mains and plant, prior to the commencement of site works.

Note that all electrical plant and distribution lines should be assumed to be live unless the relevant utilities provider i.e. UKPN, SSE or National Grid (UK), proves otherwise and provides confirmation to the effect in writing.

Gas Supply Drainage & Utilities Assessment Strathmore Centre

Existing network

The Utilities Essentials report from Technics Group Ltd, includes consultation responses from the following companies in relation to gas supply:

- Scotia Gas Network (SGN) – confirmed low pressure mains to north of the site.
- Cadent Gas – confirmed there low or medium pressure pipes and associated equipment.

The SGN Map (Figure 7 and Appendix A, pages 45) indicates that there is an existing low-pressure mains close to the site northern site boundary in Strathmore Road.

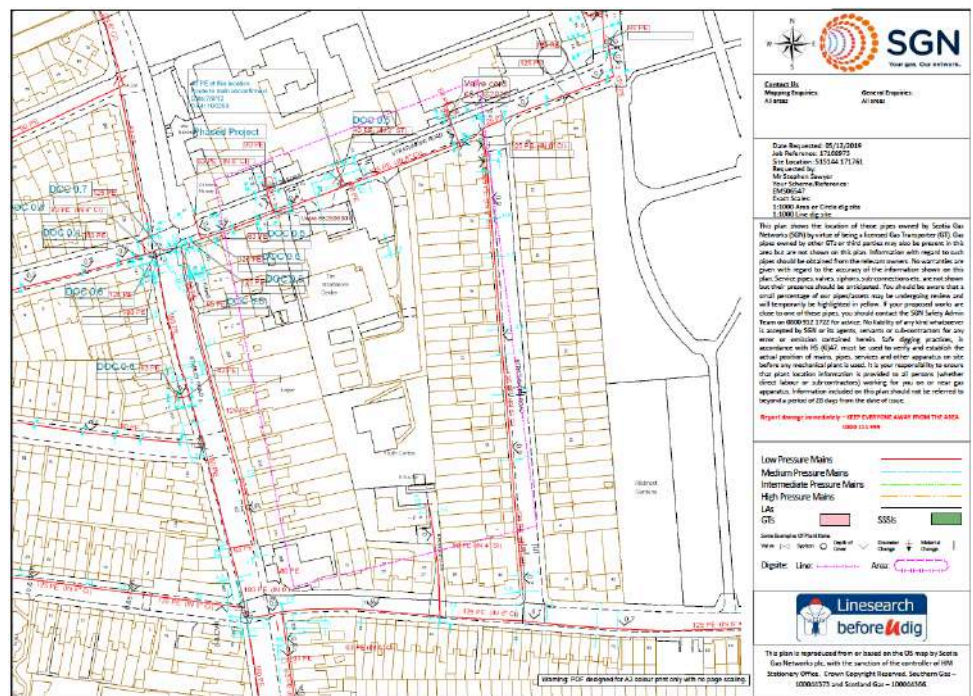


Figure 7: SGN Search Map.

Gas Supply Drainage & Utilities Assessment Strathmore Centre

Demand assessment

Hourly peak gas demand has been estimated on the basis of 37.2kW per dwelling, on the basis of each dwelling using a gas-fired boiler for space and water heating, and gas-fired oven and hobs for cooking. A peak instantaneous gas demand of approximately 891.6kW or 25.2m³ of natural gas can be expected for the total of 30 dwellings. A peak instantaneous gas demand of approximately 37.2kW or 1.1m³ of natural gas can be expected for the Scamps Nursery development. This figure does not account for the potential reduction in gas demand requirements, which may be achieved by the provision of energy efficiency measures or the provision of alternative electrical heating and cooking systems. This is therefore considered to be a conservative estimate.

Table 3: Peak gas demand estimates.

Building use	No. of units	Demand benchmark (kW/unit)	Diversity ratio	Total peak demand (kW)	Gas calorific value (kWh/m ³)	Total peak demand (m ³ /hour)
Residential	30	37.2	0.8	891.6	39.3	25.2
Nursery	1	37.2	1.0	37.2	39.3	1.1
Notes	–	<i>Based on gas central heating, oven and hobs, using BSRIA Rule of Thumb 5th Edition and benchmarking from previous projects.</i>	<i>Conservative assumption, based on no diversity in peak demand from 9 dwellings.</i>	–	<i>Typical calorific value reported by UK gas suppliers.</i>	–

Proposed strategy

A separate detailed energy strategy should be developed for the Strathmore Centre development. For the purposes of this report, assumptions have been made based on the drawings that heating and hot water is provided by boilers connected to the gas mains and natural ventilation for both the residential units and the nursery.

As there is no existing gas substation located within the Strathmore Centre site boundary, the preferred approach to meet the gas demand for the proposed development will be supplied via the low-pressure mains to north of the site.

An application should be made to SGN, to secure approval to make a new connection to the low-pressure gas mains within Strathmore Road.

It is recommended that a detailed survey should be undertaken to verify and establish the exact location of all gas plant, prior to the commencement of site works.

Telecommunications Drainage & Utilities Assessment Strathmore Centre

Existing network

The Utilities Essentials report from Technics Group Ltd, includes one consultation response related to telecommunications, provided by BT Openreach. The BT Openreach Map (Figure 8 and Appendix A, page 77) indicates that there is existing BT Openreach connection, within the site boundary at the north of the site and a pole just to the south of the site.

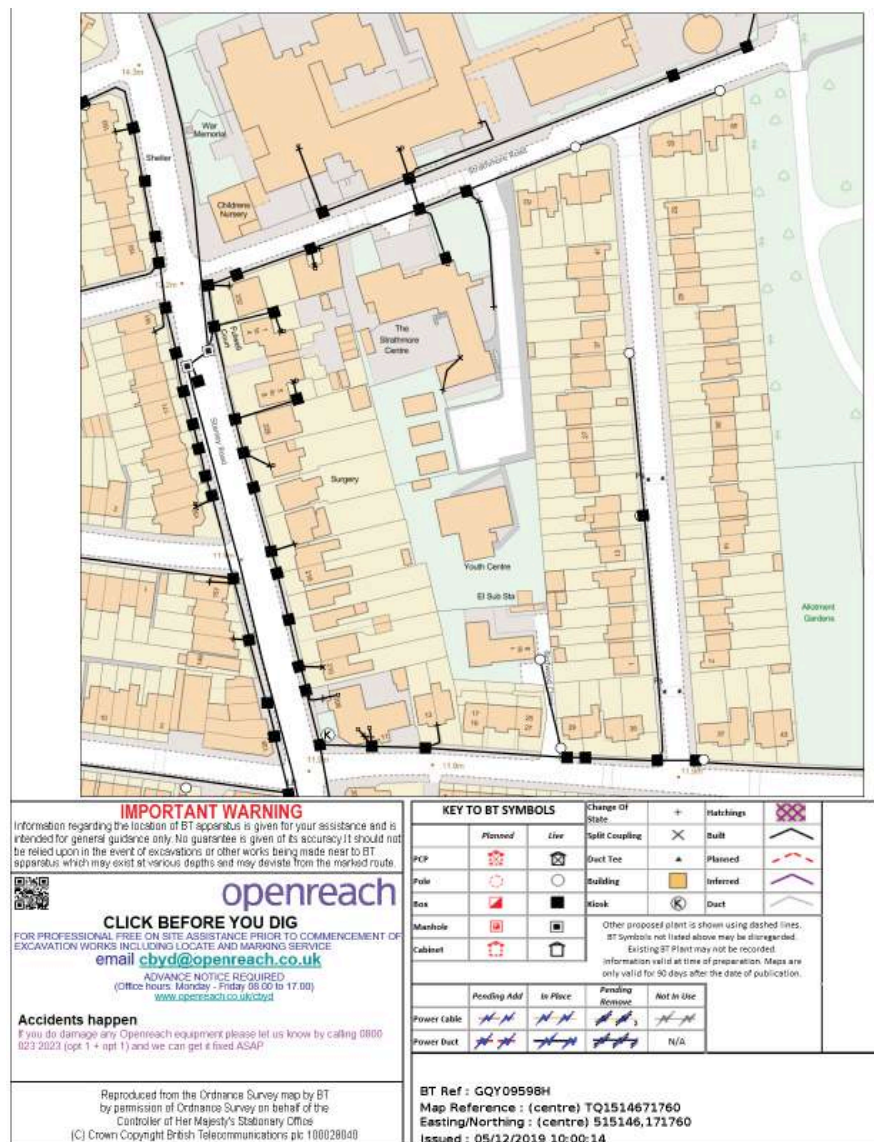


Figure 8: BT Openreach Search Map.

Telecommunications Drainage & Utilities Assessment Strathmore Centre

Existing network (continued)

Note that there are other potential telecommunications providers that were not consulted as part of the Utilities Essentials report, which may have plant on or near the site. These companies should be consulted prior to the development of detailed design.

As no telecommunications plant could be observed above ground, from available internet photography and Google Street View, it is assumed that all telecommunications plant is located within the existing building to the north of the site.

Proposed strategy

It is anticipated that telecommunications for the proposed development will be supplied with a connection to BT Openreach, or another telecommunications services provider. If a connection to BT Openreach is sought, it would be preferable to seek a connection via the existing at the north of the site to serve the residential areas and the nursery.

There are numerous telecommunications providers that have confirmed that they supply the TW11 8UH post code area, including Vodafone, Virgin Media, TalkTalk, Plusnet, Now Broadband and Sky, with superfast fibre optic broadband available from many providers for the area. It is anticipated that there should not be a problem in finding a suitable telecommunications provider for the development to connect to.

It is recommended that a detailed survey should be undertaken to verify and establish the exact location of all telecommunications plant, prior to the commencement of site works.

Conclusions

Drainage & Utilities Assessment

Strathmore Centre

Conclusions

This report assesses the likely demand from the Strathmore Centre development and implications for the relevant drainage and utilities services which may affect the development, including electricity, gas, water, foul water drainage, surface water drainage and telecommunications. The report considers both the residential areas and nursery.

There is electricity, gas, water, foul water drainage, surface water drainage and telecommunications plant present, either on, or close to the development site, at the east of the site. The current development proposals (see Figure 2) are designed to minimise implications for the existing drainage and utilities services on the site, including the electrical substation, which is present within the site. It is considered that the proposed development would make use of the electrical substation present on the site, mitigating the need for diversionary works to the plant. However, the specific development guidance issued by the drainage and utilities services providers must be adhered to, and all providers should be consulted with the detailed development design, prior to commencement of works on-site.

The relevant drainage and utilities services providers must be consulted prior to the commencement of works on-site, to verify that there is sufficient capacity within the drainage and utilities networks to accept the connection from the development and to secure formal approval for the development to connect.

Estimates for drainage disposal and utilities supply demands have been based on information provided at the time of request, unless otherwise stated. Estimates for electricity, gas and water demand do not take into account reduction in load requirements, which may be achieved by the provision of water efficiency, energy efficiency and low and zero carbon technologies, in accordance with sustainability requirements. The demand estimates provided in this report are therefore expected to be conservative and should be developed and superseded by the detailed mechanical, electrical and drainage design for the development.

It is recommended that a detailed survey of the site should be undertaken to verify and establish the exact location of all existing drainage and utilities services, prior to the commencement of site works.

This report is based on information available at the time of preparation. Existing drainage and utilities services may have new third-party connections made to them at any time in the future. The advice given within this report are therefore subject to change and supplies cannot be confirmed and verified until formal applications to the drainage and utilities services providers have been accepted. This report is based on information supplied by drainage and utilities services companies, which has not been independently verified and for which Eight Associates cannot provide an explicit warranty as to its accuracy.

Appendix A: Utilities Search Report

Drainage & Utilities Assessment

Strathmore Centre

reports by **emapsite**[™]



Better reports and data for site investigation

Essentials Utility Search Report

For the following location:

Strathmore Centre, Strathmore Road, Teddington,
Greater London, TW11 8UH

Client:

Ben Shirbini

Co-ordinates:

515146.429,171760.994

Reference:

EMS06547/estl_4458

Search Date:

03/12/2019

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Thank you for your Utility Search Report order. You have selected one of several report options developed to suit the specific needs of our different customers. The range comprises:

Utility Essentials

The Utility Essentials report gives visibility of the 5 key services – Gas, Electric, Water, Sewage and British Telecom, supplied for areas of up to 25 hectares. The Essentials report is ideal for remote sites where only the main utilities providers are likely to be present or projects where the aim is merely to check the availability of the main utilities e.g. in the planning stages of a new development. All available information is collated and delivered as a single report in 5 working days with any outstanding information being delivered as soon as it is available.

Utility Premium

The Utility Premium report provides comprehensive information about all services affecting your site, including: Gas and Oil Pipelines; mains Water and Sewerage; Telecoms and fibre-optic cables; and transportation networks. This report is ideal when comprehensive information is required for your site, ensuring you are managing your risk and avoiding expensive delays. Supplied for areas of up to 25 hectares, all available information is gathered, collated and supplied as a single report within 10 working days, with any outstanding information being delivered as soon as it is available. Please note, a search of Vtesse Networks Ltd is not included in this report. If you require a Vtesse Networks Ltd search this is available through our Utility Singles Telecoms report.

Utility Fast-track

The Utility Fast-track report delivers all the information of a Premium report (Gas and Oil Pipelines; mains Water and Sewerage; Telecoms and fibre-optic cables; and transportation networks) but with all available supplier responses being collated in a report and delivered to you within 5 working days, with any outstanding information being delivered as soon as it is available. Please note, a search of Vtesse Networks Ltd is not included in this report. If you require a Vtesse Networks Ltd search this is available through our Utility Singles Telecoms report.

Utility Singles

Our Utility Singles reports enable you to request data for a single utility type. You can order Gas, Water & Sewerage, Electricity or Telecoms as an individual search. This is a cost-effective way to obtain relevant information if you only need to check the availability/position of a particular utility in order to plan a new development or make changes to an existing development. Supplied for areas of up to 25 hectares*, all available information is gathered, collated and supplied as a single report within 10 working days, with any outstanding information being delivered as soon as it is available.

*Telecom report with Vtesse is limited to a maximum radius of 250m.

UTILITY REPORT CONTENT & INFORMATION

1 Purpose of Utilities Report

The Utilities Report is intended to be for project planning and feasibility only. It is not suitable to be used for construction or excavation purposes. The existence of utilities on the plans does not imply that they are suitable in size, capacity, type or location for the project purpose. The Utility Companies should be contacted directly for clarification in this regard.

2 Compilation of the Utilities Report

The Utilities Report is a compilation of Utility Company record plans. These are obtained via application to the Utility Companies following a geographic search to determine which Companies are in a given area. The data is provided by the Utility Companies in a variety of formats including faxed plans, pdf files, digital drawing files and paper drawings. They are all converted to pdf files for inclusion in the report. The quality of the plans therefore varies. A quality assured process is followed for each report. This requires that it is checked at different stages during the process before being subjected to a final assessment prior to issue.

3 Limitations and Accuracy of the data

Each Utility Company has its own disclaimer statement in respect of the information they provide. They do not guarantee or provide a warranty for the data. The Utility Company disclaimers should be referred to when considering the accuracy and completeness of the data. Generally the plans provided are for guidance only and are not guaranteed to be up to date or to be a complete record of the Utility Company plant in a given area.

Some Utility Companies only show main utilities. Therefore service pipes or cables may not be shown on the plans but they may be present on the site.

Some Utility Companies state that the utilities may deviate from the route and position shown on the plans.

Due to the time delay between installation of, or repair or upgrading of utilities and the subsequent updating of the Utility Companies plans, it should be noted that there could be utilities present that are not shown on the plans.

The user shall make further enquires and investigations to satisfy himself as to the adequacy of the plans and position of the utilities. The exact position of the utilities should be verified by the use of suitable detecting devices and safe digging practices in accordance with HS(G)47. Further advice on the location of the utilities should be requested from the owner.

4 Completeness

Whilst every effort is made to locate all Utility Companies in a given area, due to the sensitive or restrictive nature of certain sites, the existence of redundant utilities, the emergence of new companies and the combining of, takeover or sale of existing Companies, we cannot guarantee to provide details on all utilities in a given area.

5 Date

Due to the Utility Companies plans being regularly changed and updated, the Utility Report is only valid at the time of production.

6 Liability

For the reasons given in 1 – 5 above neither emapsite Ltd nor Technics Group Limited (trading name of Subtechnics Limited) can accept any liability for or offer any guarantees for the report or the content. No representation is made by either emapsite Ltd and/or Technics Group Limited as to the accuracy, completeness, sufficiency or otherwise of this report.

7 Copyright

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8 Assignment

The Utility Report cannot be assigned to any other party without the prior written consent of Technics Group Limited.

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The Terms and Conditions should be read in conjunction with the 'Report Content & Information' sheet. The content of the 'Report Content & Information' sheet forms part of the Terms and Conditions.

1. Disbursements

- 1.1. Several Utility Companies charge for either searching to determine if they have any plant or for providing plans. These charges are included in the cost of Utility Essentials, Utility Premium and Utility Fast-track Reports, and are not charged as extra. Utility Singles Reports do not include disbursement charges and these will be charged as extra to the client at cost. The client will be made aware of any applicable charges prior to finalisation of purchase.
- 1.2. The Utility Companies that make a charge or the charges themselves may be changed or updated without notification to the client.

2. Turnaround times

- 2.1. Whilst every effort is made to produce the reports as quickly as possible we are reliant on the Utility Companies to provide us with the plans and/or data. Depending on the product purchased, generally reports are completed within approximately 5 to 15 working days.
- 2.2. No guarantees can be made regarding the time taken to complete the report.

3. Limitation of Liability

- 3.1 Technics Group Ltd (trading name of Subtechnics Limited) and/or emapsite Ltd will make all reasonable endeavors to provide the Utility Report within the stated time period and shall not be liable for any delay arising because of any act, omission or delay of any Utility Company.
- 3.2 The Utility Companies have no liability to Technics Group Ltd and/or emapsite Ltd in relation to the provision of information, plans and/or data or the omission of or to provide such information, plans or data. Therefore Technics Group Ltd and/or emapsite Ltd shall have no liability to a Client for the information, plans and data contained in a Utilities Report.
- 3.3 Technics Group Ltd and/or emapsite Ltd shall have no liability in relation to any Utilities Report for loss or damage arising in relation to loss of profits, loss of business, loss of use, costs, damages, charges or expenses.

4. Cancellation Policy

- 4.1. We are unable to cancel the order once finalised.

5. Force Majeure

Technics Group Ltd and/or emapsite Ltd will have no liability to the Client if it is prevented from or delayed in performing its obligations in connection with producing the Utilities Report by any act, event, omission, accident or incident beyond its reasonable control. These include but are not limited to:- any form of industrial dispute, strike or lock-out, breakdown or failure of a utility service or transport network, act of God, war, riot, civil commotion, malicious damage, accident, incident, breakdown of plant, machinery or electronic system, fire or flood.

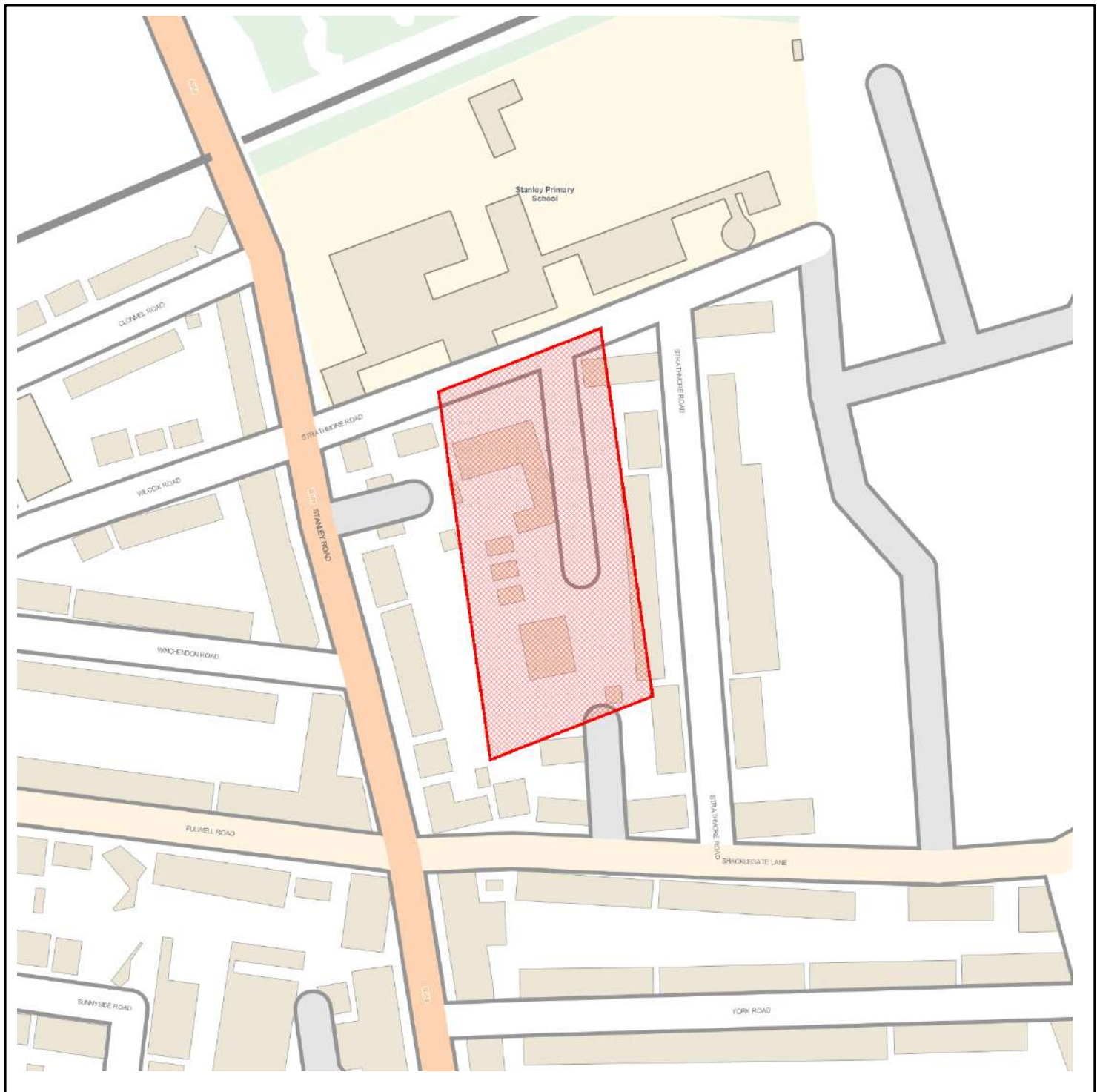
6. Governing Law

The Governing Law and Jurisdiction of these Terms and Conditions, any Contract or Agreement are governed by and construed in accordance with the laws of England and Wales. The courts of England and Wales shall have non-exclusive jurisdiction to settle any dispute or claim that arises out of or in connection with these Terms and Conditions, any Contract or Agreement.

Site Location Plan

Our Ref EMS06547/estl_4458

Grid Reference OSGB: 515146.429,171760.994



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Produced by the Ordnance Survey National Geographic Database and incorporating surveyed revision available at the date of production.

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The representation of a road, track or path is no evidence of a right of way.

The representation of features as lines is no evidence of a property boundary.

Utility Company Underground Services Results Schedule

Your Ref: estl_4458

Our Ref: EMS06547

Address: Strathmore Centre, Strathmore Road, Teddington, Greater London, TW1

Grid Reference: 515146.429,171760.994

Post code: TW11 8UH

Author: Stephen Sawyer

Search Date: 03/12/2019

Utility Company	Responses	Outcome
Electricity		
UK Power Networks	4	Affected
Gas		
Southern Gas Networks	6	Affected
National Grid UK	1	Not Affected
Telecoms/Cable		
BT Openreach	1	Affected
Water and Sewers		
Thames Water	1	Affected

Electricity

Our Ref: 17168973 Your Ref: EMS06547

Thursday, 05 December 2019

Stephen Sawyer
Technics House Merrow Business Park
Guildford
Surrey
GU4 7WA

Dear Stephen Sawyer

Thank you for contacting us regarding UK Power Networks equipment at the above site. I have enclosed a copy of our records which show the electrical lines and/or electrical plant. I hope you find the information useful.

I have also enclosed a fact sheet which contains important information regarding the use of our plans and working around our equipment. Safety around our equipment is our number one priority so please ensure you have completed all workplace risk assessments before you begin any works.

Should your excavation affect our Extra High Voltage equipment (6.6 KV, 22 KV, 33 KV or 132 KV), please contact us to obtain a copy of the primary route drawings and associated cross sections.

If you have any further queries do not hesitate to contact us.

Plan Provision
0800 056 5866



This information is made available to you on the terms set out below. If you do not accept the terms of use set out in this fact sheet please do not use the plans and return them to UK Power Networks.

1. UK Power Networks does not warrant that the information provided to you is correct. You rely upon it at your own risk.
2. UK Power Networks does not exclude or limit its liability if it causes the death of any person or causes personal injury to a person where such death or personal injury is caused by its negligence.
3. Subject to paragraph 2 UK Power Networks has no liability to you in contract, in tort (including negligence), for breach of statutory duty or otherwise how for any loss, damage, costs, claims, demands, or expenses that you or any third party may suffer or incur as a result of using the information provided whether for physical damage to property or for any economic loss (including without limitation loss of profit, loss of opportunity, loss of savings, loss of goodwill, loss of business, loss of use) or any special or consequential loss or damage whatsoever.
4. The information about UK Power Networks electrical plant and/or electric lines provided to you belongs to and remains the property of UK Power Networks. You must not alter it in any respect.
5. The information provided to you about the electrical plant and/or electric lines depicted on the plans may NOT be a complete record of such apparatus belonging to UK Power Networks. The information provided relates to electric lines and/or electrical plant belonging to UK Power Networks that it believes to be present but the plans are not definitive: other electric lines and/or electrical plant may be present and that may or may not belong to UK Power Networks.
6. Other apparatus not belonging to UK Power Networks is not shown on the plan. It is your responsibility to make your own enquiries elsewhere to discover whether apparatus belonging to others is present. It would be prudent to assume that other apparatus is present.
7. You are responsible for ensuring that the information made available to you is passed to those acting on your behalf and that all such persons are made aware of the contents of this letter.
8. Because the information provided to you may not be accurate, you are recommended to ascertain the presence of UK Power Networks electric lines and/or electrical plant by the digging of trial holes. Trial holes should be dug by hand only.

Excavations must be carried out in line with the Health and Safety Executive guidance document HSG 47. We will not undertake this work. A copy of HSG 47 can be obtained from the Health and Safety Executives website.

All electric lines discovered must be considered LIVE and DANGEROUS at all times and must not be cut, resited, suspended, bent or interfered with unless specially authorised by UK Power Networks.

The electric line and electrical plant belonging to UK Power Networks remains so even when made dead and abandoned and any such electric line and/or electrical plant exposed shall be reported to UK Power Networks.

Where your works are likely to affect our electric lines and/or electrical plant an estimate of the price of any protective /diversionary works can be prepared by UK Power Networks Branch at Metropolitan House, Darkes Lane, Potters Bar, Herts. , EN6 1AG, telephone no. 0845 2340040



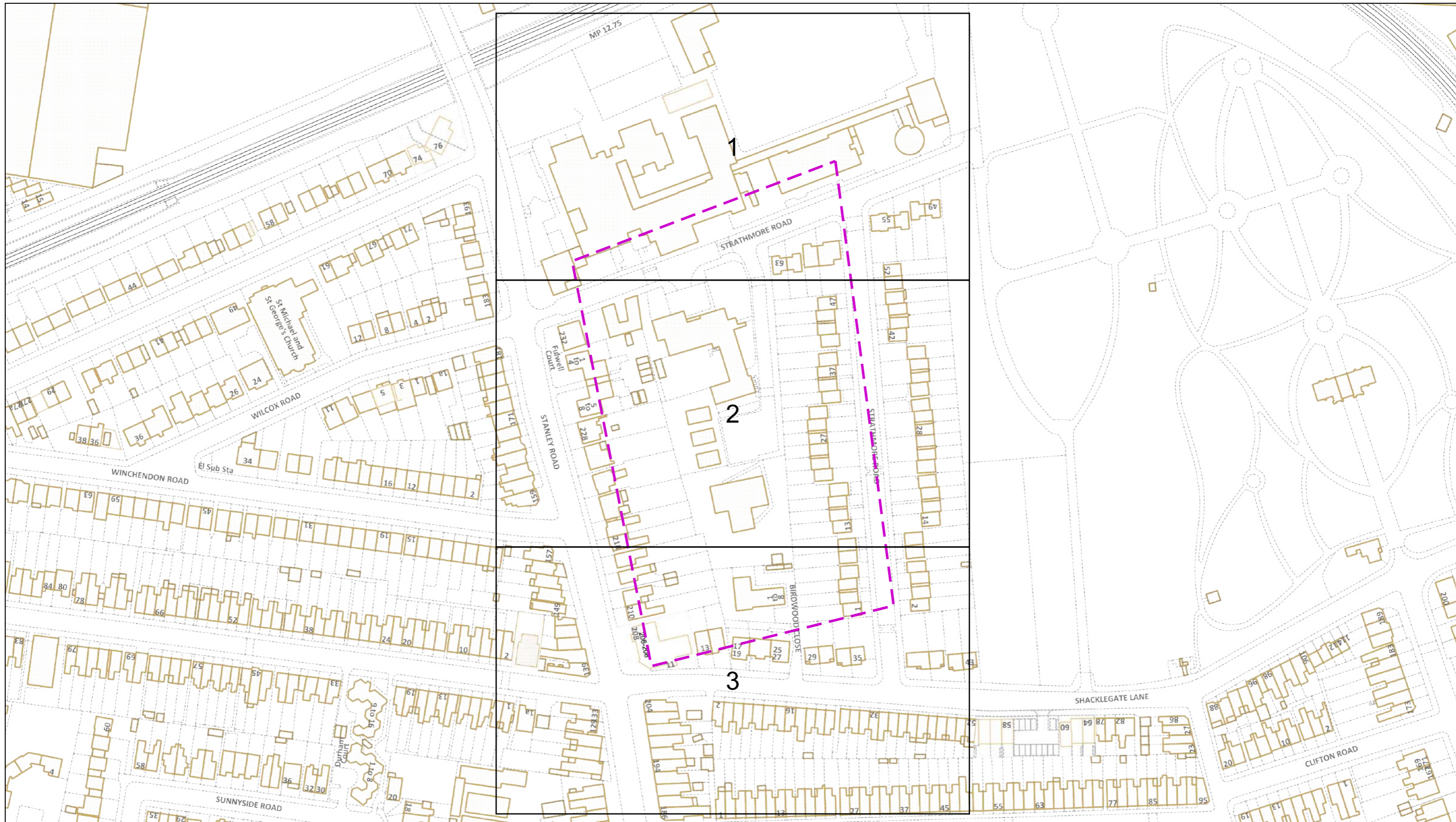
- 9 Any work near to any overhead electricity lines must be carried out by you in accordance with the Health and Safety Executive guidance document GS6 and the Electricity at Work Regulations.

The GS6 Recommendations may be purchased from HSE Books or downloaded from the Energy Networks Association's website.

If given a reasonable period of prior notice UK Power Networks will attend on site without charge to advise how and where "goal posts" should be erected. If you wish to use this service, in the first instance please telephone: 0845 6014516 between 08:30 and 17:00 Monday to Friday.

10. You are responsible for the security of the information provided to you. It must not be given, sold or made available upon payment of a fee to a third party.
11. If in carrying out work on land in, on, under or over which is installed an electric line and/or electrical plant that belongs to UK Power Networks you and/or anyone working on your behalf damages (however slightly) that apparatus you must inform immediately UK Power Networks by our emergency 24 hour three digit telephone number **105** providing;
- your name, address and telephone number;
 - the date, time and place at which such damage was caused;
 - a description of the electric line and/or electrical plant to which damage was caused;
 - the name of the person whom it appears to you is responsible for that damage;
 - the nature of the damage.
12. The expression "UK Power Networks" includes UK Power Networks (EPN) plc, UK Power Networks (LPN) plc, UK Power Networks (SEPN) plc, UK Power Networks and any of their successors and predecessors in title.





Dig Sites Area: Line:

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This plan must be used with the attached 'Symbols' document.
 Date Requested: 05/12/2019
 Job Reference: 17168973
 Site Location: 514933 171603
 Requested by:
 Mr Stephen Sawyer
 Your Scheme/Reference: EMS06547
 Scale: 1:1538 (When plotted at A3)

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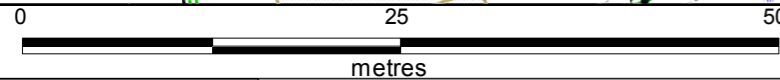
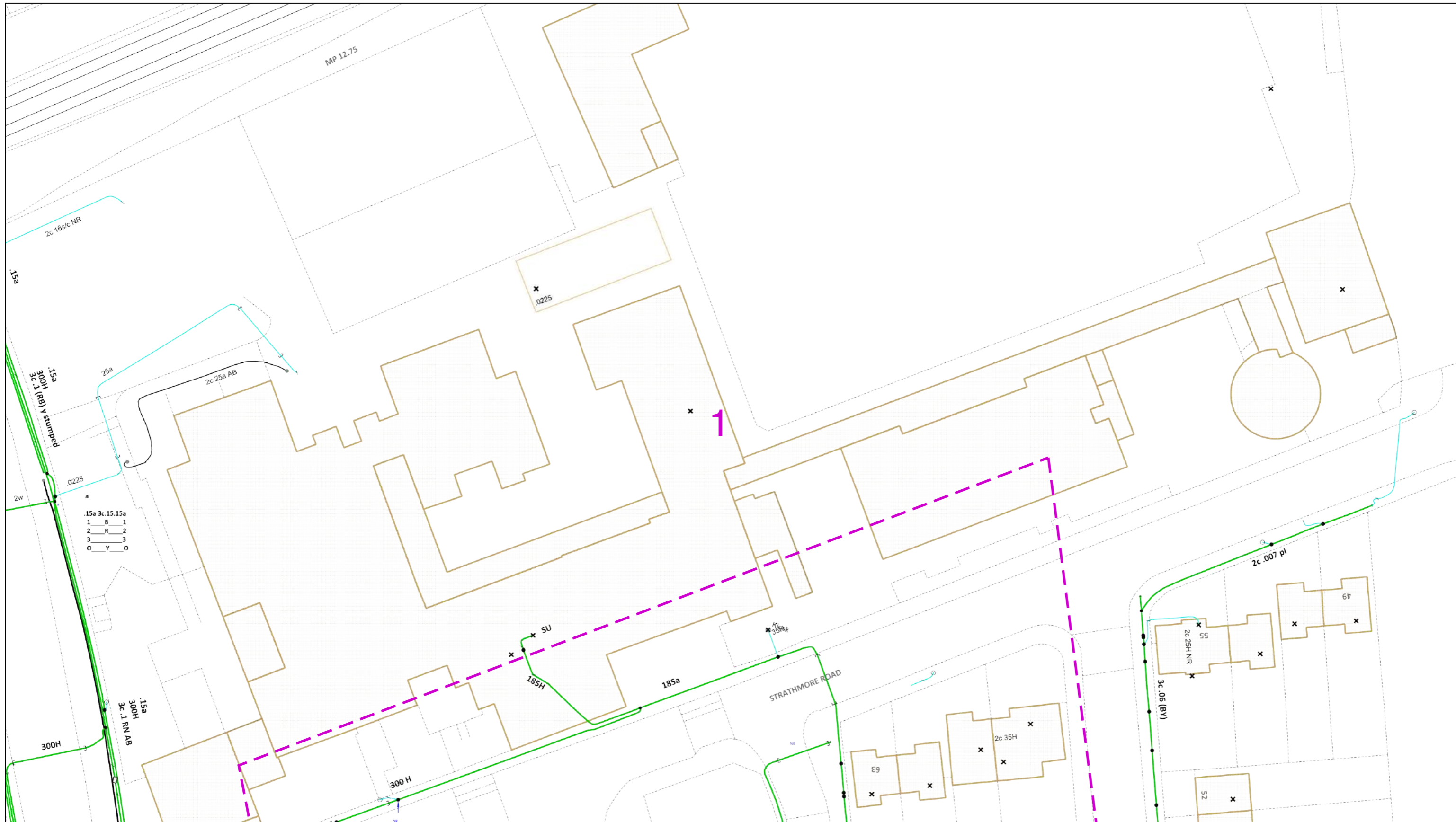
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3. Subject to paragraph 2 UK Power Networks has no liability to you in contract, in tort (including negligence), for breach of statutory duty or otherwise for any loss, damage, cost, claims, demands, or expenses that you or any third party may suffer or incur as a result of using the information provided whether for physical damage to property or for any economic loss (including without limitation loss of profit, loss of opportunity, loss of savings, loss of goodwill, loss of business, loss of use) or any special or consequential loss or damage whatsoever.
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IF IN DOUBT - ASK!
 PHONE 0800 056 5866
 EMERGENCY - If you
 damage a cable or line
 Phone 0800 783 8838
 (24hrs) URGENTLY

ALWAYS LOOK UP
 BEFORE
 YOU START WORK
 Refer to HSE
 Guidance note GS6

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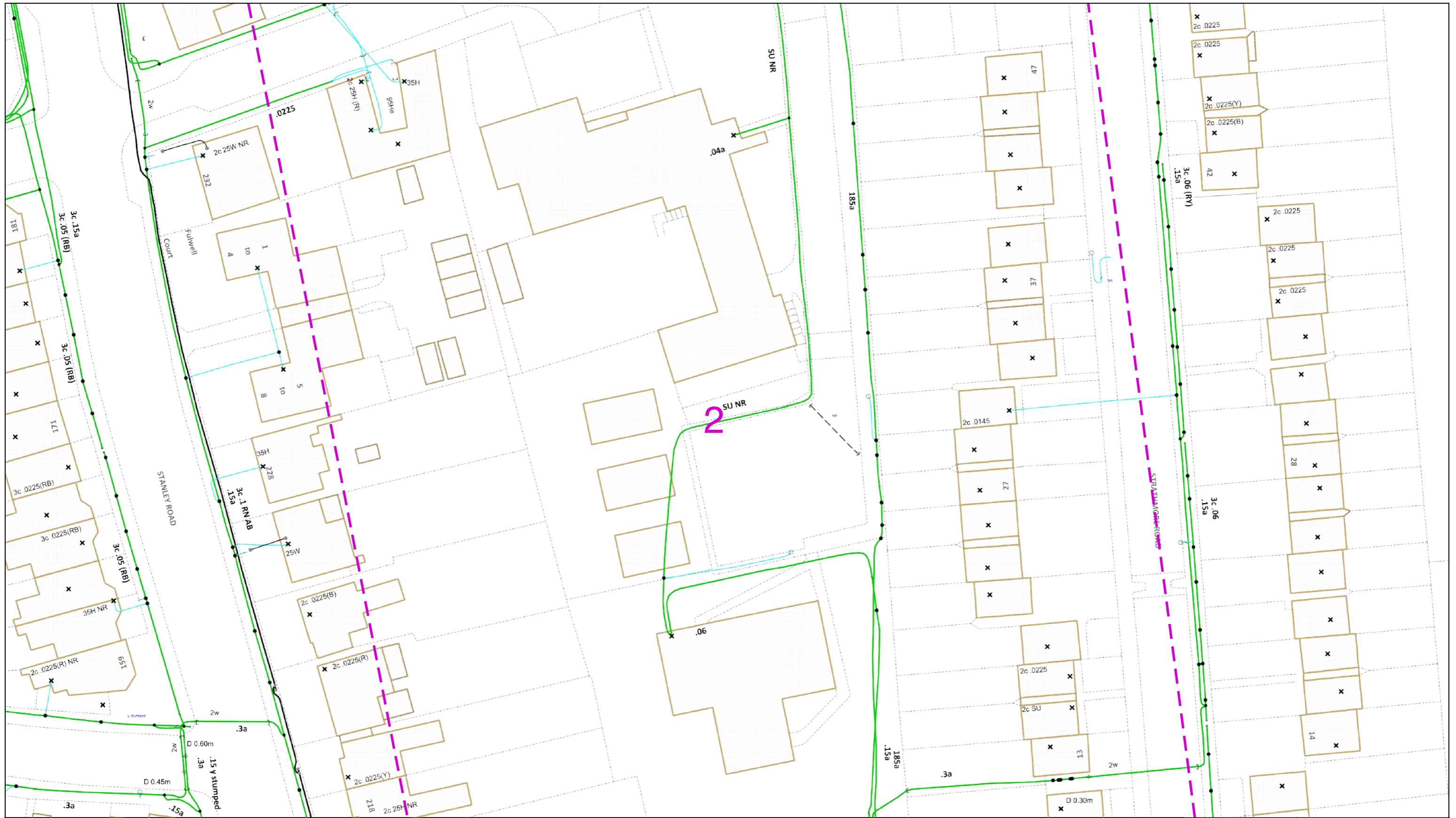


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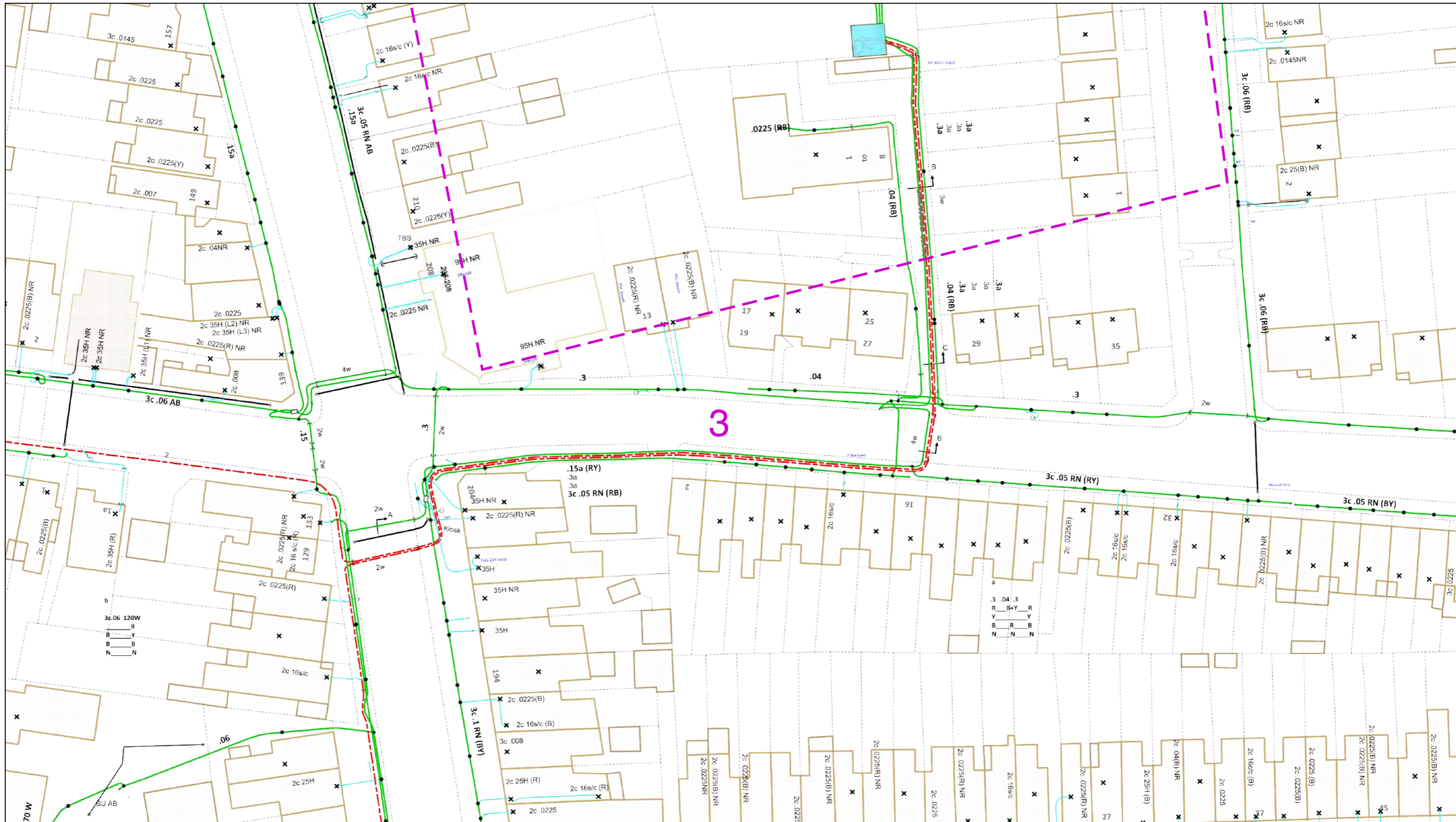
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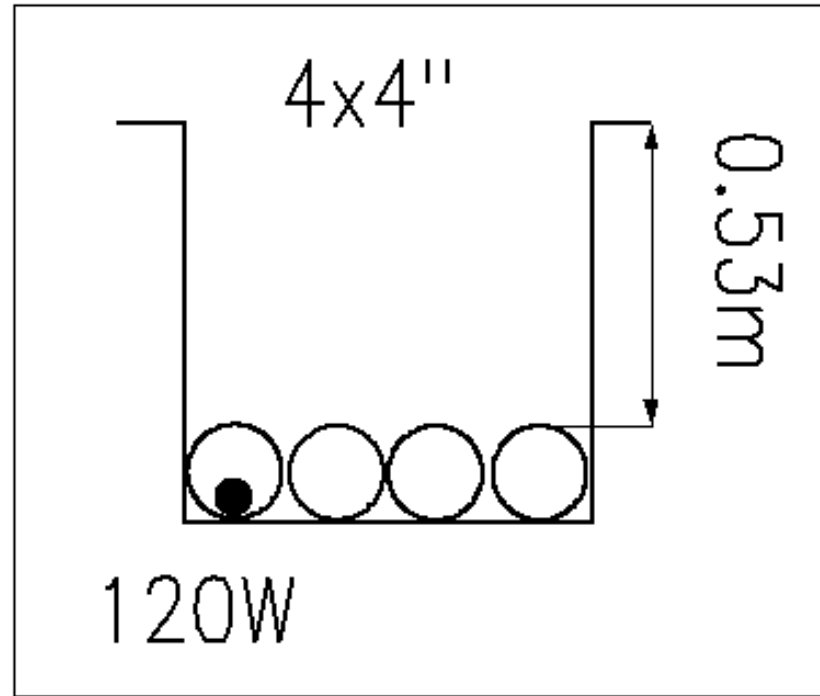
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Cross Section : A



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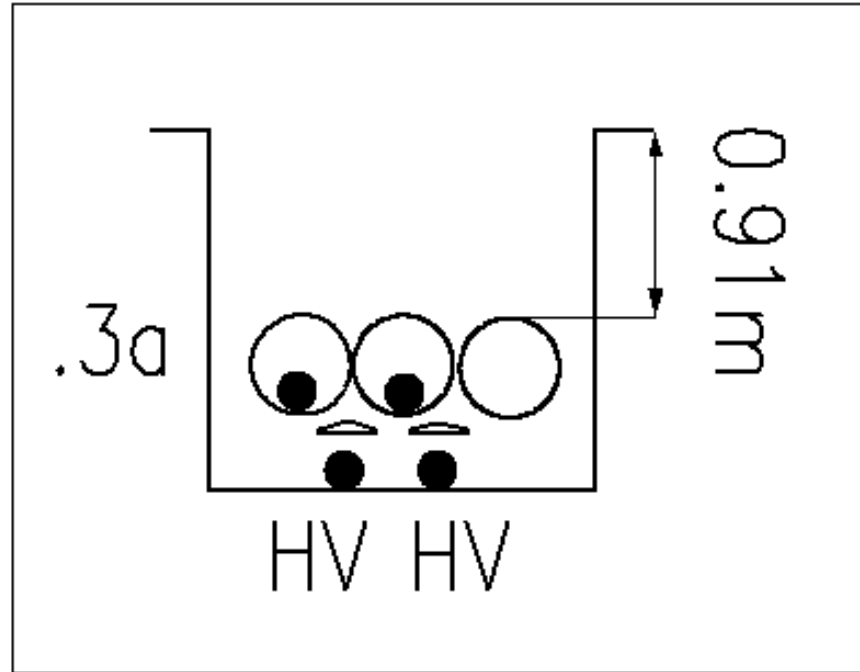
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Cross Section : B



Cross Section B

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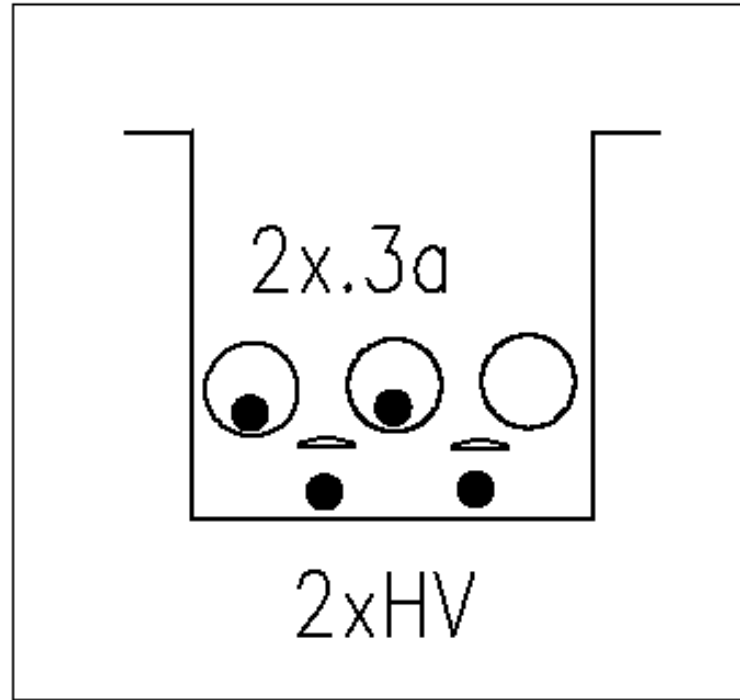
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Cross Section : C

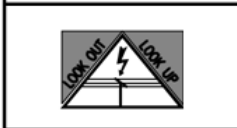


Cross Section C

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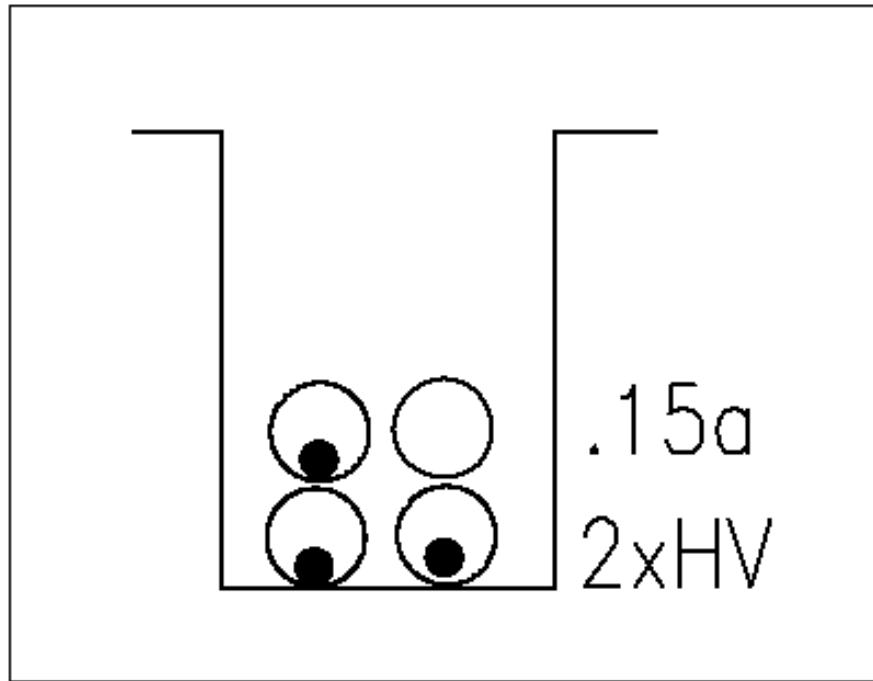
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Cross Section : B

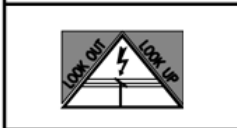


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 3. Subject to paragraph 2 UK Power Networks has no liability to you in contract, in tort (including negligence), for breach of statutory duty or otherwise for any loss, damage, cost, claims, demands, or expenses that you or any third party may suffer or incur as a result of using the information provided whether for physical damage to property or for any economic loss (including without limitation loss of profit, loss of opportunity, loss of savings, loss of goodwill, loss of business, loss of use) or any special or consequential loss or damage whatsoever.
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 5. You are responsible for the security of the information provided to you. It must not be given, sold or made available upon payment of a fee to a third party.

IF IN DOUBT - ASK! PHONE
 0800 056 5866
**EMERGENCY - If you damage
 a cable or line
 Phone 0800 783 8838 (24hrs)
 URGENTLY**



**ALWAYS LOOK UP BEFORE
 YOU START WORK**
 Refer to HSE Guidance note GS6

Maps produced at 1:2500 scale are Geo-Schematics which show LV mains cables and overhead lines (in some cases all voltages). Prior to carrying out excavations you must refer to the 1:500 records to determine the location of all known underground plant and equipment.



Network Records NetMAP Symbols Booklet - East of England

This symbol booklet is intended as a general guide only - some local variations of these symbols may be found.

Version 1.2

Released October 2010

Always check with your local Network Records office or the UK Power Networks server to ensure that you are using the most up to date copy of this booklet - Tel: 08000 565866.

Index:-

Page no:	Contents:
1	Guidance notes.
2	The area covered by this guide.
3	<u>1:500 view</u>
4	Scenery.
7	Scenery (UK Power Networks use only).
8	Primary distribution cables (EHV).
9	Secondary distribution cables (HV/LV).
10	Service cables/terminations.
11	Cable ducts.
13	EHV/HV/LV sites.
14	Mains joints.
15	Service joints.
17	Cross sections.
17	Common abbreviations/terminology (all views).
19	<u>1:2500 (LV) & 1:10000 (HV) network views (UK Power Networks use only).</u>
20	General.
22	1:2500 scale LV network.
22	1:10000 scale HV network.
23	<u>LV network diagram view (UK Power Networks use only).</u>
24	Overhead lines.
24	Underground cables.
25	Joints.
26	Substations/pole transformers.

Guidance notes.

Important notice:

If you do not understand the NetMAP record that you are using, please contact the UK Power Networks Network Records team for guidance
Tel: 08000 565866.

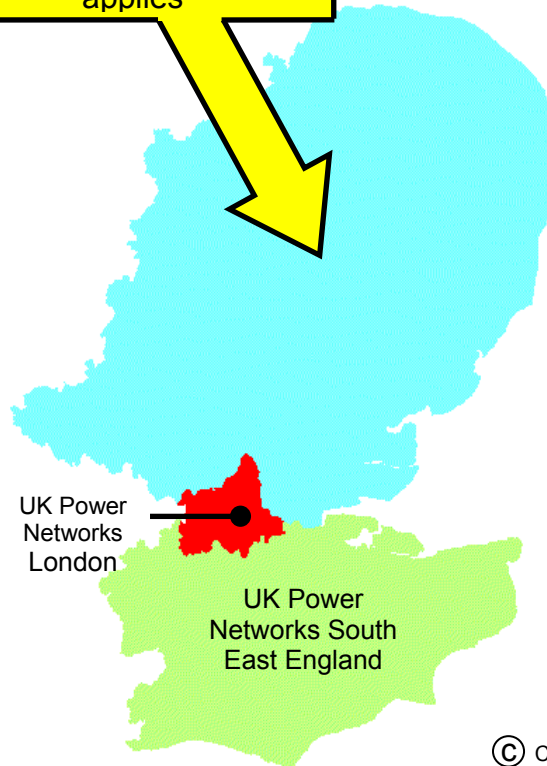
- The position of apparatus shown on NetMAP is believed to be correct, but the original landmarks may have altered since the apparatus was installed.
- It must be assumed that there is at least one service to each property, lamp column, street sign etc.
- All cables must be treated as live, unless proven otherwise by an authorised UK Power Networks representative.
- Third party cables are not usually shown. In cases of doubt, please telephone 08000 565866.
- When two or more maps are supplied for the same area, the maps must be read in conjunction with each other and with this symbol document.
- All LV cables are assumed to be 4 core, and all HV cables assumed to be 3 core unless otherwise stated.



**Plan Provision Team
Fore Hamlet
Ipswich
Suffolk IP3 8AA
Tel: 08000 565866**

The area covered by this guide:











**UK Power Networks
East of England.**
This is the only area
where this document
applies










© Crown Copyright

1:500 view - underground network

Scenery








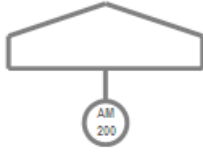
NetMAP system	Scanned image	Description
		100 metre Ordnance Survey grid line (on O/S based maps only.)
		Property fence line
		Building line
		Kerb line
		Electrical Boundary

Scenery - for UK Power Networks use only - boxed in red

NetMAP system	Scanned image	Description
 Inset Network – Contact xxxx IDNO for further information	Not applicable	Area of inset network - not the asset of UK Power Networks (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Proposed Cross Rail route (only visible to UK Power Networks and their immediate contractors)
	Not applicable	High pressure pipelines in the general vicinity (only visible to UK Power Networks and their immediate contractors)
<p>Note: Pipelines are only viewable on NetMAP by UK Power Networks staff and their immediate contractors. Do not carry out any excavation without consent from the relevant agency - legally protected high pressure petroleum products pipeline route in the general vicinity - consult www.linewatch.co.uk for contacts and guidance. Pipeline contact numbers can also be found on the intranet – out of hours, contact our Control Centre.</p>		
	Not applicable	Water - surface water (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Water - Source Protection Zone 1 (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Water - Source Protection Zone 2 (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Water - Source Protection Zone 3 (only visible to UK Power Networks and their immediate contractors)









section continued on next page

Scenery for UK Power Networks use only - boxed in red





NetMAP system	Scanned image	Description
	Not applicable	Historical - Scheduled Monuments (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Historical - Parks and Gardens (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Historical - Areas of Archaeological Potential (AAP) (only visible to E UK Power Networks and their Immediate contractors)
	Not applicable	Nature - Ramsar Wetlands of International Importance (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Nature - Special Area of Conservation (SAC) (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Nature - Special Protected Area (SPA) (only visible to UK Power Networks and their immediate contractors)
		Nature - Site of Special and Scientific Interest (SSSI) (only visible to UK Power Networks and their immediate contractors)

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Scenery for UK Power Networks use only - boxed in red

NetMAP system	Scanned image	Description
	Not applicable	Nature - Local Nature Reserve (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Nature - National Nature Reserve (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Nature - Area of Outstanding Natural Beauty (AONB) (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Nature - National Park (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Fluid filled cables - very high sensitivity (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Fluid filled cables - high sensitivity (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Fluid filled cables - medium sensitivity (only visible to UK Power Networks and their immediate contractors)
	Not applicable	Fluid filled cables - low sensitivity (only visible to UK Power Networks and their immediate contractors)

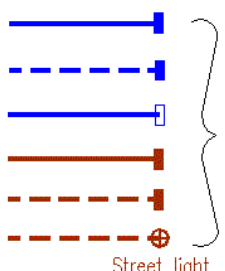
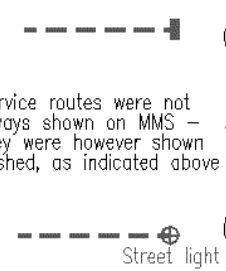
Primary distribution cables (1:500 view)

NetMAP system	Scanned image	Description
		Over 33kV and up to 132kV
		Over 11kV and up to 33kV

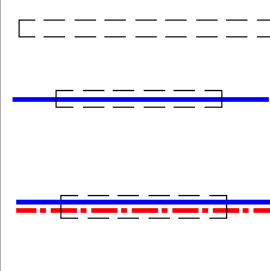
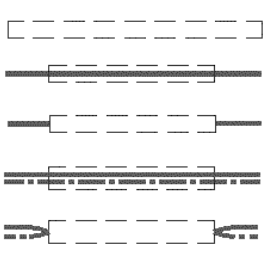
Secondary distribution cables (1:500 view)

NetMAP system	Scanned image	Description
		Over 230/400V and up to 11kV (HV) cable route
		230/400V (LV) cable route
		Pilot cable route
<small>(Only shown this way if independent from HV cable route)</small> Abandoned cables are shown and labelled as such when applicable		

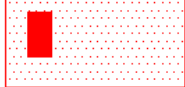
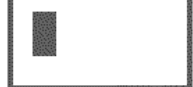



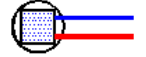
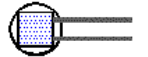
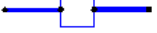













Service cables and terminations (1:500 view)

NetMAP system	Scanned image	Description
	 <p>Service routes were not always shown on MMS – they were however shown dashed, as indicated above</p>	<p>3 phase service with termination</p> <p>3 phase service with termination (unknown route)</p> <p>3 phase service with multi-head termination</p> <p>Single phase service with termination</p> <p>Single phase service with termination (route unknown)</p> <p>Street lighting cable and termination</p>

Cable ducts (1:500 view)




NetMAP system	Scanned image	Description
		<p>Empty duct</p> <p>Cable(s) in duct(s)</p> <p>Cable(s) in duct(s) (on some raster maps)</p> <p>Multiple cables in ducts</p> <p>Multiple cables in ducts (on some raster maps)</p>

EHV, HV and LV sites (1:500 view)

NetMAP system	Scanned image	Description
<p>COLCHESTER GRID</p> 	<p>COLCHESTER GRID</p> 	Primary substation
<p>HIGH STREET</p> 	<p>HIGH STREET</p>  <p>HIGH STREET</p> 	Secondary substation
		Pad mounted substation
		Link box - 2 way
		Link box - 4 way (6 way etc shown similarly)
		Feeder pillar - 4 way (6 way etc shown similarly)
<p>CHURCH RD</p> 	<p>CHURCH RD</p> 	Pole transformer
		Poles on underground records
		H pole, any voltage
		Service turret (solid type)

section continued on next page

EHV, HV and LV sites continued (1:500 view)

NetMAP system	Scanned image	Description
<p>No NetMAP equivalent</p>  <p>CAUTION Missing Information</p>		Service turret (with link facility on LV main)
<p>Contaminated Land refer to SHE 01 016</p> 	<p>No equivalent</p>	Missing data in or near this location
	<p>Not applicable</p>	Contaminated land reference

Mains joints (1:500 view)

NetMAP system	Scanned image	Description
(voltage indicated by colour/line-style)		
		Straight joint
		Crutch joint
		Straight crutch joint
		Pot end
		Pot end – an one of several cables – single line representation
		Branch joint/pot end – (humpty back joint, back to back joint, bull nose joint or stub joint)
		Sleeve repair or repair joint
		Cut end
		Capped end
		Tee joint
	NetMAP/vector only	Sicame joint box

Service joints (1:500 view)

NetMAP system	Scanned image	Description
Please note that 3 phase services are shown blue, and single phase services are shown brown		
		Straight joint
		Service joint to main
		Pot end

Cross sections (1:500 view)

NetMAP system	Scanned image	Description
		<p>Single line representational plan view with NetMAP equivalent (please note the use of separate line for each voltage on the raster/MMS data)</p>
<p>(found within NetMAP section world or supplementary sheet)</p>	<p>(always found on a supplementary sheet)</p>	<p>Cross sectional view of above</p>
		<p>Section arrow with old/new numbering system – points in direction section is viewed</p>
<ul style="list-style-type: none"> ● 185Ew ● 35Ec ● HV3005 	<ul style="list-style-type: none"> ● 185Ew ● 35Ec ● HV3005 	<p>LV/3 phase service cable</p> <p>Single phase service cable with size annotation</p> <p>HV cable – 3 core with route number annotation</p>

section continued on next page

Cross sections continued (1:500 view)

NetMAP system	Scanned image	Description
		<p>HV cable – modern EPR, Plam and Triplex with route number annotation</p>
		<p>Pilot cable</p>
		<p>33kV cable</p>
		<p>132kV cable</p>
		<p>Single duct</p>
		<p>6 way duct formation – irrespective of duct type and material, all are displayed similarly</p>
		<p>Protective slab</p>
		<p>Tiles</p>
		<p>Concrete slabs</p>
		<p>33kV fibre warning board</p>
		<p>Steel plate</p>
		<p>Plastic tile tape</p>
		<p>Timber</p>

Common abbreviations and terminology (all views)

Abbrev.	Description	Abbrev.	Description
1c	Single core	Cut out or C/O	Meter/main fuse position
1ph	Single phase	cx	Triplex (copper)
2c	Two core	DE	Direct earth
3c	Three core	DSTA	Double steel tape armoured
3ph	Three phase	Ea	Alpex cable
ABC	Aerial bunched (bundled) conductor (modern LV overhead line)	EFI	Earth fault passage indicator
ABI	Air break isolator (no fuses)	EHV	Extra high voltage (11,001 Volts and over)
ABSD	Air break switch disconnecter	ELCB	Earth leakage circuit breaker
ACCS	Aluminium concentric copper sheathed	ELT	Earth leakage trip
Al	Aluminium	EPR	Ethylene propylene rubber
AR	Auto recloser	Ew	Waveform cable
ASL	Automatic sectionalising links	E/W	Earthenware duct or earth wire
ax	Triplex (aluminium) 2 x 22mm AL PVC (example) Duplex 3 x 22mm AL PVC (example) Triplex	Fdr or Feeder	LV or HV cable fed by or feeding a substation
CB	Circuit breaker	F/G	Fuse gear
c/c	Concentric cores	F/P	Feeder pillar
ccc	Compact covered conductor	GRP	Fibreglass substation
CCT	Circuit	GVR	Gas vacuum recloser or pole mounted circuit breaker
CNE	Combined neutral and earth	HV	High voltage (1,001-11,000 Volts incl)
Cross phased	The core colour may be different to originating transformer phasing	HYBRID	Modern plastic cable with mixed conductor material (Al/Cu)
CS	Consac	Insulation	Electrically protective material surrounding a conductor
CSE	Cable sheath earth	Insulator	Porcelain or glass overhead line support (on poles)
Cu	Copper	ITC	Instrument traced cable or ITC - cable traced electronically using Cable Avoidance Tool (CAT) or similar

section continued on next page

Common abbreviations and terminology continued (all views)

Abbrev.	Description	Abbrev.	Description
Jumper	Connecting lead between open points, section points and overhead plant	PICAS	Paper insulated corrugated aluminium sheath armoured
kV	Kilovolt (or 1,000 Volts) – unit of electrical pressure	PILC	Paper insulated lead covered
kW	Kilowatt (1,000 Watts) – unit of electrical power	PILSTA	Paper insulated lead covered steel tape armoured cable
kVA	Kilovolt Amps or power	PL	Plain lead or public lighting
Link box or LB	Means of connecting LV feeders together using links or fuses	PME	Protected multiple earth or CNE
LSF	Low smoke & fume	PMT	Pole mounted transformer
LV	Low voltage (up to 1,000 Volts incl)	PMR	Pole mounted recloser (generic term for OYT/GVR)
LV Pillar	Low voltage fuse distribution board	PT	Pole transformer
Neutral	Return path of live cable	PVC	Polyvinyl chloride
O/H or OHL	Overhead line	RMU	Ring main unit
OYS	Oil filled pole mounted sectionaliser	RN	Reduced neutral
OYT	Oil filled pole mounted recloser	s/c	Split concentric or single core
PC400	Pole mounted LV fuse unit	S/L	Street light
PE	Pot end or potential end – joint on cable end	S/S	Substation
Phase	Usually the core colour of a cable (caution – may be cross phased) – Red, Yellow, Blue on old cables, or L1, L2, L3 on new cables, for example	STA	Steel tape armoured
		SWA	Steel wire armoured
		T1 or T2 etc	Substation TX setup where more than one TX exists
		T/F or TX	Transformer
		Volts	Unit of electrical pressure
		Watts	Unit of electrical power
		XLPE	Cross linked polyethylene

1:2500 & 1:10000 view - overhead networks - for UK Power Networks use only - boxed in red

General

NetMAP system	Scanned image	Description
		H pole
		Pole

1:2500 scale LV network

NetMAP system	Scanned image	Description
No NetMAP equivalent		132kV cable route
No NetMAP equivalent		33/22kV cable route
No NetMAP equivalent		11kV underground cable
		132kV overhead line
		33kV overhead line dots mark pole position
		11kV overhead line – dots mark pole position
		Dual construction – dots mark pole position
		LV overhead line – dots mark pole position
No NetMAP equivalent		LV underground cable
		Pole and stay
		Pole and strut
		Voltage regulator
		Static balancer
		Example of struts and stays
		Flying stay
		Earthed pole in PME system
261	261	Pole number
		Ground type substation
S.P.	S.P.	Section pole
S.L.	S.L.	Street light

section continued on next page

1:2500 scale LV network continued

NetMAP system	Scanned image	Description
O.R. Stay	O.R. Stay	Outrigger stay
Ext. Brkt	Ext. Brkt	Extension bracket
P. Box	P. Box	Pole box
N.E.	N.E.	Neutral and earth
O.R. Brkt	O.R. Brkt	Outrigger bracket

1:10000 scale HV network

NetMAP system	Scanned image	Description
		132kV overhead line
		33kV overhead line dots mark pole position
		11kV overhead line – dots mark pole position
		11kV overhead line – dual circuit – dots mark pole position
		11kV underground cable and EHV
		Pylon HV or EHV
		Grid line tower
		Stay
		Ground type substation
		Pole type transformer
		Live line taps
		Switchgear – all types
		Fuse gear
		Auto recloser – live line connected

The above circular substation/switchgear symbols may be found that contain different combinations of apparatus (see last example)

LV network diagram view-for UK Power Networks use only-boxed in red





Overhead lines

NetMAP system	Description
- - - - -	Unknown
- - - - -	Al
- - - - -	Cu
- - - - -	ABC
—	Pole link


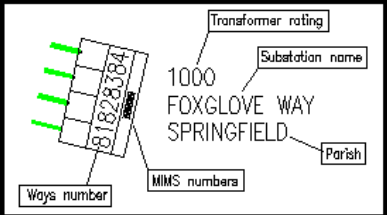
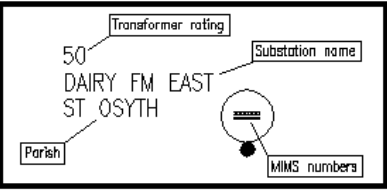

Underground cables (LV network diagram view)

NetMAP system	Description
—	Unknown
—	Al
—	Cu
—	CC
—	TCC
—	Ea
—	Ec
—	Ecx
—	Ew
—	LSF
—	Other

Joints (LV network diagram view)

NetMAP system	Description
	Pot end or Sicame Box
	Straight joint
	Crutch joint
	3 phase termination

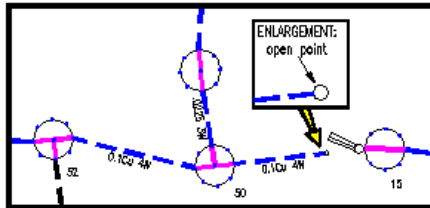
Substations/pole transformers (LV network diagram view)

NetMAP system	Description
<p>There are many substation combinations – these are merely a sample of configurations that can be found.</p> 	<p>2 way substation</p> <p>4 way substation</p> <p>4 way twin busbar substation</p> <p>10 way back to back substation</p> <p>Pole transformer (normal)</p> <p>Pole transformer 2 way</p> <p>Pole transformer 3 way</p>
	<p>Substation with rating, name, Parish and MIMS identifying number</p>
	<p>Pole transformer with rating, name, Parish and MIMS identifying number</p>
	<p>Intermediate pole</p> <p>Section pole</p> <p>Overhead fuse</p>
section continued on next page	

Substations/pole transformers cont'd (LV network diagram view)

NetMAP system

Description



Overview – the purple lines through the section poles are pole links – these indicate how the network is linked together



2 way link box



3 way link box



4 way link box



4 way double busbar link box



4 way BICC link box



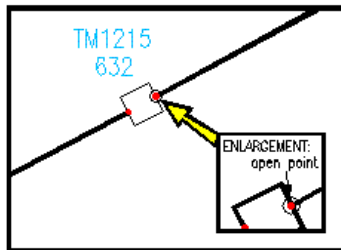
5 way link box



6 way link box



6 way double busbar link box



A two way link box with identification number, connected to a cable with an open point



Feeder pillars – these range from 2 ways through to 9 ways – a 9 way and a 2 way are shown as examples





Think
before you...



DIG UNDER GROUND



THINK . . .

Every year people are killed or seriously injured in incidents involving underground electricity cables.



THE DANGER

Underground cables carry a powerful electrical charge which can be conducted through machinery and equipment with fatal consequences. Anyone working close to live underground cables should take time to read this simple safety leaflet and identify the precautions they should be taking.



WHO IS AT RISK?

People in construction, demolition, agriculture, infrastructure or anywhere else where excavation is taking place. That is why it is vital everyone working on or visiting a working site is fully aware of the hazards and the steps that must be taken to avoid them.



HOW INCIDENTS HAPPEN

Sadly, accidents where excavators, breakers or other tools make contact with power cables are not uncommon. Where equipment or machinery is used near underground cables the risk must be considered and controlled in the interests of everyone.

THINK AHEAD

Get the basics right. Familiarise yourself with the site. Mark the route of underground cables running across the site on all plans circulated to staff. Find out if the work could be carried out away from the cables, or avoided all together.

UK Power Networks is committed to safety and actively encourages anyone undertaking work to contact us in advance for advice and free cable locating maps.

These will help you avoid our underground cables during your work, which is vital for your safety as well as ensuring we can provide a reliable supply of electricity.

For free maps and advice call **0800 056 5866** or write to:

Plan Provision

UK Power Networks

Fore Hamlet

Ipswich

IP3 8AA

plans@ukpowernetworks.co.uk

We can advise you on what steps to take if essential work is necessary close to underground cables and help ensure safe working practises are implemented.

Good management reduces the risk of accidents. With proper planning and control, workers should not come into contact with underground cables.

If excavation work forms a part of your day-to-day activities obtain a copy of the Health & Safety Executive's Guidance Note "Avoiding Danger from Underground Services" HSG47, which is free to download from the HSE's website - **www.hse.gov.uk/pubns/priced/hsg47.pdf**



WHAT TO DO

- **Have cable drawings and records on site**, know how to read them and check them before starting work. Be aware that not all cables may be shown on the records.
- **Look around for anything in the vicinity** that would have an electricity service, such as street lights, CCTV cameras, phone boxes, etc. as well as the more obvious things like houses and industrial units.
- **Always** use a cable avoidance tool (CAT) to survey the entire site before digging commences. Once found, mark cable positions with spray paint or similar. Do not forget to use encroachment lines as well.
- **Dig trial holes**, by hand, alongside the indicated route of the cables(s).
- Use spades and shovels with **insulated handles** in preference to forks and picks.
- **Make sure everyone** on site, including visitors, **understand the risks**.
- If there is a **cable encased in concrete** contact **UK Power Networks to agree a safe method of work**. This may mean making the cable dead.
- Before demolishing a building **make sure that supplies are disconnected**, preferably well clear of the work area.
For guidance on how to arrange a disconnection visit www.ukpowernetworks.co.uk – Our Services
- Have the **emergency contact telephone number** easily available on site.



WHAT NOT TO DO

- Never allow anyone near a damaged or suspected damaged cable or joint.
- Do not handle or attempt to alter the position of a cable or joint.
- Never assume that cables run in straight lines, they may be deflected around underground obstacles.
- Do not use mechanical excavator or powered digging tool within the vicinity of known cables.
- Never knock a road pin, or forcibly throw a spiked digging tool into the ground, without checking what is below the surface.





IF A CABLE IS DAMAGED

Notify UK Power Networks immediately:

London 0800 028 0247

East of England 0800 783 8838

South East 0800 783 8866

Call the emergency services if anyone is injured. Anyone who has received an electrical shock should go to hospital as damage may have occurred to the heart.

Always **treat the cable(s) as live** even if they are not sparking. Cables can be re-energised at any time without warning.

Never remove anything that is stuck **in a cable**.

Keep everyone well away from the area of the damage.

Do NOT attempt to remove anything that is in contact with the cable.



PLAN IT OUT

**CHECK IT OUT BEFORE
YOU DIG UNDER GROUND**





DANGER OF DEATH

THINK BEFORE
YOU DIG

Call the network operator

0800 587 3243

www.ukpowernetworks.co.uk

If you are unsure of your network operator then please
visit www.energynetworks.org

Gas



Our Ref: 17168973 Your Ref: EMS06547

Thursday, 05 December 2019

Stephen Sawyer
Technics House Merrow Business Park
Guildford
Surrey
GU4 7WA

Dear Stephen Sawyer

Thank you for your enquiry dated Thursday, 05 December 2019

Please find an extract from our mains records for your proposed work area, any SGN assets are described in the map legend. **On some occasions blank maps may be sent to you, this is due to your proposed work being in a no gas area but within our operational boundaries.**

This mains record only shows the pipes owned by SGN in our role as a Licensed Gas Transporter (GT). Please note that privately owned gas pipes or pipes owned by other GTs may be present in this area and information regarding those pipes needs to be requested from the owners. If we know of any other pipes in the area we will note them on the plans as a shaded area and/or a series of x's.

The information shown on this plan is given without obligation or warranty and the accuracy cannot be guaranteed. Service pipes, valves, siphons, stub connections etc. are not shown but their presence should be anticipated. Your attention is drawn to the information and disclaimer on these plans. The information included on the plan is only valid for 28 days.

On the mains record you may see the low/medium/intermediate pressure gas main near your site. There should be no mechanical excavations taking place above or within 0.5m of a low/medium pressure system or above or within 3.0m of an intermediate pressure system. You should, where required confirm the position using hand dug trial holes.

A colour copy of these plans and the gas safety advice booklet enclosed should be passed to the senior person on site in order to prevent damage to our plant and potential direct or consequential costs to your organisation.

Safe digging practices in accordance with HSE publication HSG47 "Avoiding Danger from Underground Services" must be used to verify and establish the actual position of the mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all relevant people (direct labour or contractors) working for you on or near gas pipes.

It must be stressed that both direct and consequential damage to gas plant can be dangerous for your employees and the general public and repairs to any such damage will incur a charge to you or the organisation carrying out work on your behalf. Your works should be carried out in such a manner that we are able to gain access to our apparatus throughout the duration of your operations.

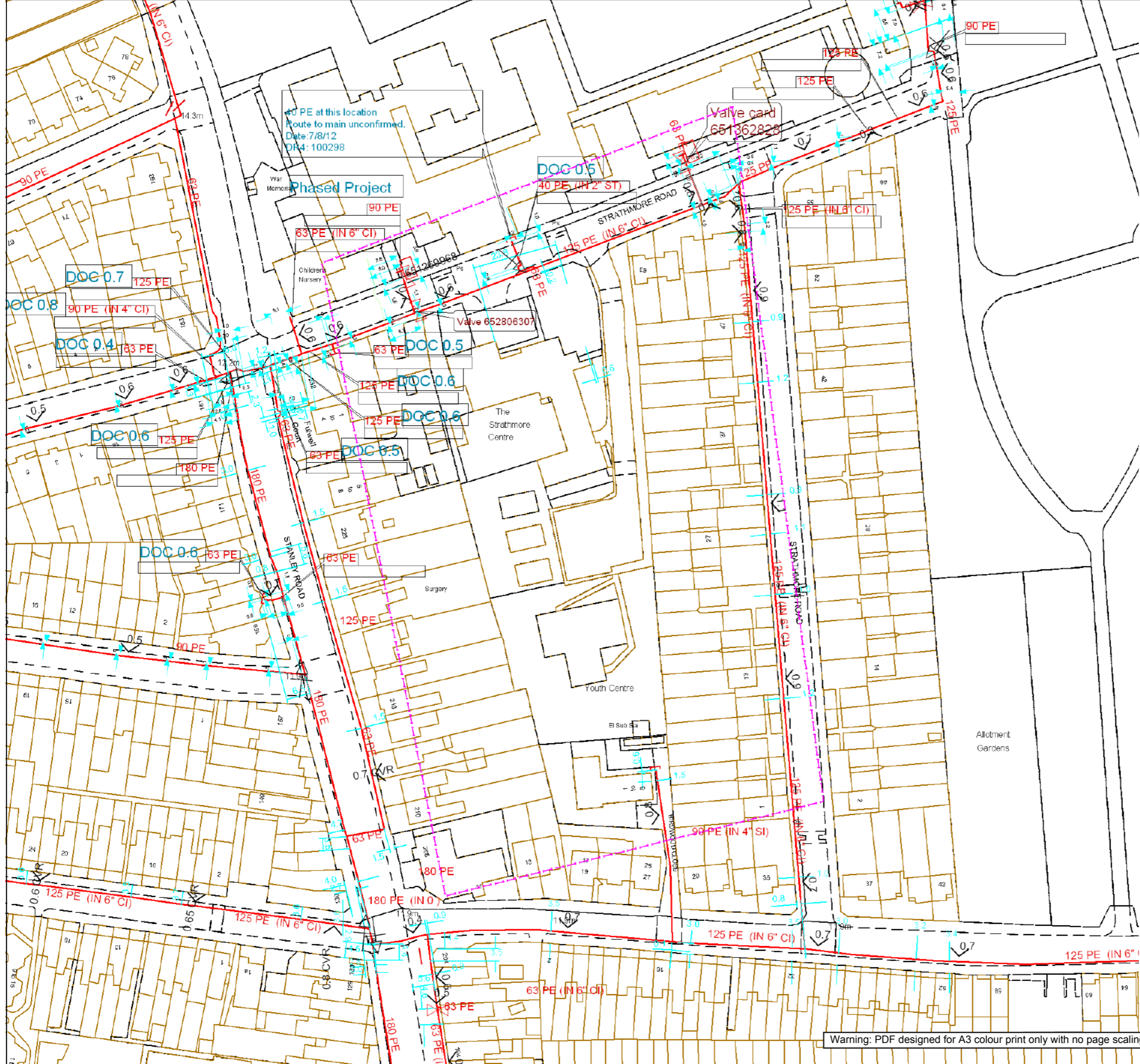
If you require any further information please do not hesitate to contact us.

Yours sincerely,
The Safety Admin Team
For more information, visit our Dig Safely pages on sgn.co.uk
Tel: 0800 912 1722

Smell gas?
Call 0800 111 999

SGN is a brand name of Scotia Gas Networks Limited
Registered in England & Wales No. 04958135
Registered Office: St Lawrence House | Station Approach | Horley | Surrey RH6 9HJ

Authorised and regulated by the Financial Conduct Authority



Contact Us
Mapping Enquiries: All areas
General Enquiries: All areas

Date Requested: 05/12/2019
 Job Reference: 17168973
 Site Location: 515144 171761
 Requested by:
 Mr Stephen Sawyer
 Your Scheme/Reference:
 EMS06547
 Exact Scales:
 1:1000 Area or Circle dig site
 1:1000 Line dig site

This plan shows the location of those pipes owned by Scotia Gas Networks (SGN) by virtue of being a licensed Gas Transporter (GT). Gas pipes owned by other GTs or third parties may also be present in this area but are not shown on this plan. Information with regard to such pipes should be obtained from the relevant owners. No warranties are given with regard to the accuracy of the information shown on this plan. Service pipes, valves, siphons, sub-connections etc. are not shown but their presence should be anticipated. You should be aware that a small percentage of our pipes/assets may be undergoing review and will temporarily be highlighted in yellow. If your proposed works are close to one of these pipes, you should contact the SGN Safety Admin Team on 0800 912 1722 for advice. No liability of any kind whatsoever is accepted by SGN or its agents, servants or sub-contractors for any error or omission contained herein. Safe digging practices, in accordance with HS (G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that plant location information is provided to all persons (whether direct labour or sub-contractors) working for you on or near gas apparatus. Information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA
 0800 111 999

Low Pressure Mains

Medium Pressure Mains

Intermediate Pressure Mains

High Pressure Mains

LAs

GTs

SSSIs







































Some Examples Of Plant Items
 Valve Syphon Depth of Cover Diameter Change Material Change

Digsite: Line: Area:



This plan is reproduced from or based on the OS map by Scotia Gas Networks plc, with the sanction of the controller of HM Stationery Office. Crown Copyright Reserved. Southern Gas – 100044373 and Scotland Gas – 100044366.

Map Symbols

						
VALVE OPEN	VALVE CLOSED	GOVERNOR	END CLOSURE	SYPHON	REDUCER	TEE
						
TEST POINT	CATHODIC PROTECTION	GENERAL REFERENCE	FLOW MEASURE	DIP POINT	MONO ETHYLENE GLYCOL	OILING POINT
						
FLOW STOP	PRESSURE MEASUREMENT	STAND PIPE	OFFICIAL MINISTRY RECORD	PURGE POINT	GAS CONDITIONER	DRAIN POINT
						
SKETCH BUBBLE	DEPTH OF COVER	METER	MATERIAL CHANGE	LP MAINS	MP MAINS	IP MAINS
						
PIG TRAP	CROSSOVER CONNECTION	CHANGE OF DIAMETER	PIPE JOINT	LHP MAINS	HISTORY DATA	SSSI
						
				GTs	CONTACT ZONE	LTS



SGN

Your gas. Our network.

Know what's below

Protecting you and your family

Protecting you and your family

Are you planning on carrying out any home improvements such as building a conservatory, an extension, a new pond, decking, concreting, landscaping, fencing or planting trees in your garden? You must make sure you have drawings/maps showing any pipes or cables around your home. To obtain copies of our gas drawings/maps please visit our **Dig safely** pages on sgn.co.uk and follow the link to our online system.

This service is free of charge.

Our Dig safely page is also where you'll find advice on any protective measures you may need to take before you start work, whether you're planning on doing it yourself or hiring a professional.

Damaging gas pipes is dangerous and could lead to a fire or an explosion. It could also cause large-scale loss of gas supply to the local community and is potentially very expensive.



Responsibilities

It's the responsibility of whoever is doing the work to make sure they've complied with the relevant legislation and Health and Safety Executive (HSE) guidance.

In practice, this means anyone carrying out work must obtain a copy of any available colour drawings showing the position of buried utilities for reference before and during the project.

Non-recording of service pipes >

Individual service pipes are not normally recorded on gas network drawings. This is accepted practice and reinforced by guidance given in Design, construction and installation of service pipes – approved code of practice, published by the HSE, and IGE/TD/4 – Gas Services, published by the Institute of Gas Engineers and Managers.

What you need to do when planning a conservatory or house extension, landscaping, fencing or any other groundworks

It's the responsibility of whoever is undertaking the work to check with utility companies before the work starts.

If you're planning any building or digging work remember that gas pipes, power cables, water pipes and sewers all run underground and could be right beneath your feet. Construction or excavation work can damage underground services or prevent further maintenance.

Remember that obtaining planning permission or a building warrant from your local authority doesn't normally involve consultation with utility companies so you should get in touch with them when you start planning your project. This will help keep everyone safe.

Please visit our **Dig safely** pages on sgn.co.uk for more information and our online mapping system.



< Service entry



Gas services/work in gardens

If you're going to be carrying out work around your home, or a third party is carrying out work on your behalf and you have requested a map from us, **your own gas service may not be marked**. The simplest way to understand the location of your gas service is to know where it enters your house, as pictured.

Your gas service pipe usually takes the shortest route to the gas main, as shown on the sample network map/drawing above.

If you're unsure and need further help, please contact us and we'll arrange for a Plant Protection officer to contact you.



Any damage, however minor, must be reported to the National Gas Emergency Service

Planting a tree or landscaping your garden

Tree roots can damage utilities.

If you're planting trees or shrubs, make sure you consider the type of plant, root type and their location in relation to buried gas pipes to avoid any damage. We may need access to repair and maintain our pipes and equipment in the future, and we reserve the right to remove any tree or bush if we need to.

What happens if you damage a pipe?

If you damage a gas pipe:

- Call the National Gas Emergency Service on 0800 111 999 immediately
- **DON'T** attempt to make repairs yourself
- **DON'T** handle or attempt to alter the position of the exposed pipe

Damaging a gas pipe can result in:

- Major fire/explosion leading to death or serious injury
- Asphyxiation due to gas exposure leading to death or serious injury
- Loss of gas supply to individuals or communities
- Financial costs to you for repair and remedial work
- Enforcement action by the HSE

We will recover all reasonable costs incurred in repairing damaged gas pipes.

Delivering gas safely, reliably and efficiently

Your safety is our top priority

We manage the network that distributes natural and green gas to over 5.9 million customers in Scotland and the south of England.

We own and operate 74,000km of gas mains, and associated plant and equipment. We're committed to delivering gas safely, reliably and efficiently to every one of our customers.

Accidental damage to our pipes could put you or members of the public at risk.



Service entry



All our engineers and contractors carry a photo ID card with our company logo on it. Don't be afraid to check with our Security team on **0800 015 5170** that the person on your property is supposed to be there.



Meter box

Help

If you're planning any work on or around your property and you need more information, you'll find everything you need on our Dig Safely pages.



sgn.co.uk



0800 912 1722

Smell gas? 0800 111 999

Follow these six steps if you smell gas:



DO open windows and doors to help ventilate the gas



DO turn off the gas supply at the meter and make sure any gas appliances are turned off



DO call the National Gas Emergency number on 0800 111 999. Lines are open 24 hours a day, 365 days a year



DON'T smoke or use any naked flames



DON'T touch any electrical switches. Turning a switch on or off could ignite a gas leak



DON'T enter a cellar if you smell gas, even if your gas meter is located in the cellar



SGN

Your gas. Our network.

Dig safely

Measures to avoid injury
and damage to gas pipes



The following protective and precautionary measures MUST be taken when working in the vicinity of gas mains and services.

It is the responsibility of the property owner or company carrying out the work to make sure they've complied with the relevant legislation and Health and Safety Executive (HSE) guidance, eg HS(G)47. In practice, this means that whoever is carrying out the work MUST obtain gas mains location information and/or maps showing the indicative position of the gas network before any work takes place.

To avoid injury to yourself, your employees, colleagues and the general public you MUST suitably mark the position of the pipes on site.

HS(G)47 outlines best practice that should be followed to ensure you work safely:

1. Plan the work, obtain maps.
2. Detecting, identifying and marking underground services.
3. Safe excavation and safe digging practices.

In addition to the requirements under the Health and Safety At Work etc. Act 1974 to prevent injuries to employees and others (not employed), it is an offence under regulation 15 of the Pipelines Safety Regulations 1996 to cause damage to a pipeline (which includes gas mains and services as well as higher pressure pipelines) so as to give rise to a danger to persons.

You MUST make sure that current full colour copies of our maps are issued to all relevant personnel on site and they're aware of the presence and location of our gas mains and services prior to any excavation.

In a gas emergency

If you cause a gas leak or suspect a main or service pipe or equipment is leaking, you **MUST** take the following emergency actions immediately:

- Ask people to move away from the area of the gas escape.
- Call **0800 111 999** immediately.

1. Don't attempt to repair the escape or stop the leakage.
2. As gas may enter buildings, ask people in the surrounding premises to leave until it's safe for them to return.
3. Stop anyone going near the immediate vicinity of the gas escape.
4. Prohibit smoking and extinguish all naked flames.
5. Don't use mobile phones or other ignition sources.
6. Assist our representatives and other emergency services such as the police, ambulance, and fire service as requested.

Additional reference material

- SGN guidance for Safe Working in the Vicinity of Pipelines & Associated Installations operating >7barg. Applicable for HP only.
- HS(G)47 **Avoiding Danger from Underground Services** available from hse.gov.uk
- NJUG **Utilities Guidance on Positioning and Colour Coding of Apparatus** available from njug.org.uk





Making an enquiry for gas mains or services maps

Please visit our **Dig safely** pages on sgn.co.uk for plant protection information and links to our online mapping system and other associated information and guidance.

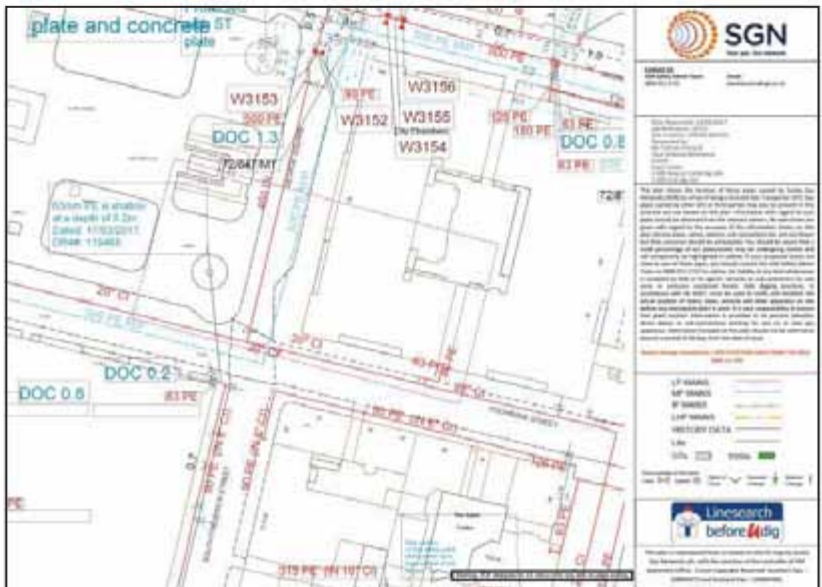
Our simple and easy to use online mapping system is available 24/7, 365 days a year.

You'll need to register/log in and provide a few details about your site location and the work you'll be carrying out. We'll respond immediately by email.

What you're likely to be sent

You'll be sent an email with a map. This will be an extract from our gas mains record, showing your site and any of our gas pipes as well as relevant safety information.

We always send out safety information, however we may forward your enquiry on to a local plant protection officer or a pipelines engineer to make direct contact with you depending on the work location.



Example of a gas map

Note: Service pipes are not shown on our maps

When working near our gas mains and services

Safe system of work

To satisfy ourselves that work in the vicinity of our gas mains is being carried out safely, we may ask for a copy of your risk assessment and/or method statement paperwork.

Where work falls under the Construction (Design and Management) Regulations 2015 reference to our gas mains and services MUST be made within your site Health and Safety file.

Financial

Every reasonable precaution MUST be taken to avoid personal injury or damage to our gas network at all times.

If we incur any costs to repair direct or consequential damage or divert any gas main or service, you'll be recharged in full.

HSE

Any damage to our gas mains or services will be subject to legislative reporting responsibilities to the Health and Safety Executive under Reporting of Injuries, Diseases & Dangerous Occurrences Regulations 2013, Gas Safety Management Regulations 1996, and the Pipelines Safety Regulations 1996.

Minimum safe working distances

Depending on the activity being undertaken and the gas mains or services you are working within the vicinity of, there are different safe distances that MUST be adhered to. SGN plant protection officers or pipeline engineers will inform you of these if required.

Surface boxes and manholes

Do not bury or move our surface boxes. Free access MUST be maintained during and after your work. No manhole cover or other structure can be built over, around or under a gas main, and no work is to be carried out that results in a reduction or increase in cover or protection without prior written agreement.

Deep excavations

Adequate protection, approved by us, MUST be applied for any deep excavations in the vicinity of our gas mains and services that may affect its security and integrity. Ground movement around gas mains MUST be prevented. We MUST be contacted if a sewer trench or any other water authority is to be constructed at greater than 1.5 metres depth near a buried gas main or service pipe. You MUST give us detailed drawings showing the line and width of the proposed sewer or other trench, together with the soil group classification of the area concerned.



Crossing our mains or services

The placing of heavy construction plant, equipment, materials or the passage of heavy vehicles over our gas mains is prohibited unless specifically agreed protective measures (ie the construction of reinforced crossing points) have been carried out. This is particularly important where reductions in side support or ground cover are planned. You **MUST NOT** carry out any work in servitudes/easements without our prior written consent.

Exposed plant

Where excavations in the vicinity of our gas mains affect its support, the plant **MUST** be adequately supported and protected in consultation with us and to our satisfaction. It **MUST** be protected from impact, restraints and thrust blocks, and supports **MUST NOT** be removed without our agreement.

Hot work

One of our representatives should be present when welding or other hot work involving naked flames is being carried out near our gas mains, as there's potential for heat damage to plastic pipeline/coatings.

Backfilling

Concrete backfill should not be placed closer than 300mm to our mains. No concrete or hard material should be placed under or adjacent to any of our gas mains. Shuttering **MUST** be constructed to maintain the stated clearances and prevent fresh concrete encasing our mains or services. Material used for backfill around our gas mains **MUST** conform to the following:

- If sand, it **MUST** be well-graded in accordance with BS EN 12620:2002.
- It **MUST NOT** contain any sharp particles (stones, bricks, lumps or corrosive materials).
- Foamed concrete **MUST NOT** be used.
- It **MUST** be laid to a minimum depth of 250mm above the crown of the gas main.

Note: Power ramming **MUST NOT** take place until a 300mm hand rammed layer has been completed over the crown of the main.

Access





Free access to our sites, mains and services, including temporary structures and spoil heaps **MUST** be available at all times.





Mechanical excavation

Mechanical excavators (including breaker attachments) MUST NOT be used within the following distances from the confirmed location of our gas mains and services shown on our gas maps without prior agreement:

Type of mains and services	Gas map identification	Hand excavation required inside	Pipe pressure indication shown on map
Low Pressure (LP)	0 - 75mbar	0.5 metres	
Medium Pressure (MP)	75mbar to 2 bar	0.5 metres	
Intermediate Pressure (IP)	2 - 7 bar	3.0 metres	
High Pressure (HP)	Above 7 bar	You must seek approval from us prior to any work	

Major accident hazard pipelines

High pressure pipeline

No work is to take place near an HP pipeline until it is agreed with us. After agreement and before any work does take place, the location of our pipeline **MUST** be marked up and its position confirmed by digging trial holes with our personnel in attendance.



Pipeline markers

High pressure

We will be involved in any work taking place near high pressure pipelines. We will provide you with additional information that you **MUST** familiarise yourself with before carrying out any work.

The default method of excavating near high pressure gas pipelines MUST always be by hand.



Wind turbines

The UK Onshore Pipelines Operations Association (UKOPA) has identified the appropriate exclusion zone (distance from the base of the wind turbine mast to the edge of the pipeline) as 1.5 times the turbine height. Contact MUST be made with us during the planning stages of a wind turbine or wind farm.



Tree planting

If trees or shrubs are to be planted in the vicinity of our gas mains and services, the selection of tree or shrub type and how it's planted **MUST** be considered carefully. This is to avoid root damage to buried mains or services, and to ensure our subsequent excavations for main repair and maintenance won't damage the trees or shrubs.

Written approval from us **MUST** be obtained before any tree planting is carried out on a servitude/easement. Any approval we grant to plant trees

The following trees and those of similar size (deciduous or evergreen) **MUST NOT** be planted within 6m of the centre line of the main: ash, beech, birch, most conifers, elm, maple, lime, horse chestnut, oak, and sycamore. Apple and pear trees are also included in this category.

Dwarf apple stocks may be planted up to 3m of the centre line of the main.



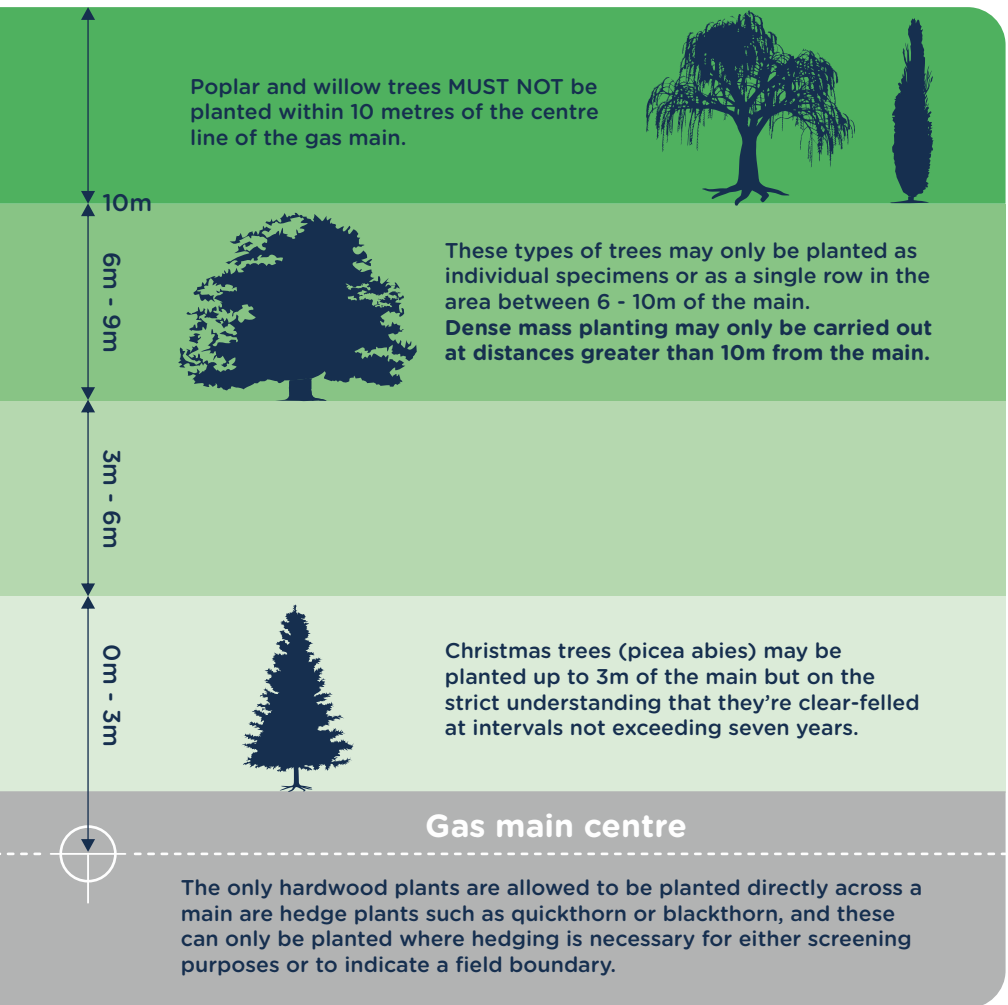
In cases where screening is required, the following are shallow rooting and may be planted close to the gas mains and services: blackthorn, broom, cotoneaster, elder, hazel, laurel, quickthorn, privet, snowberry and most ornamental shrubs.

Gas main centre

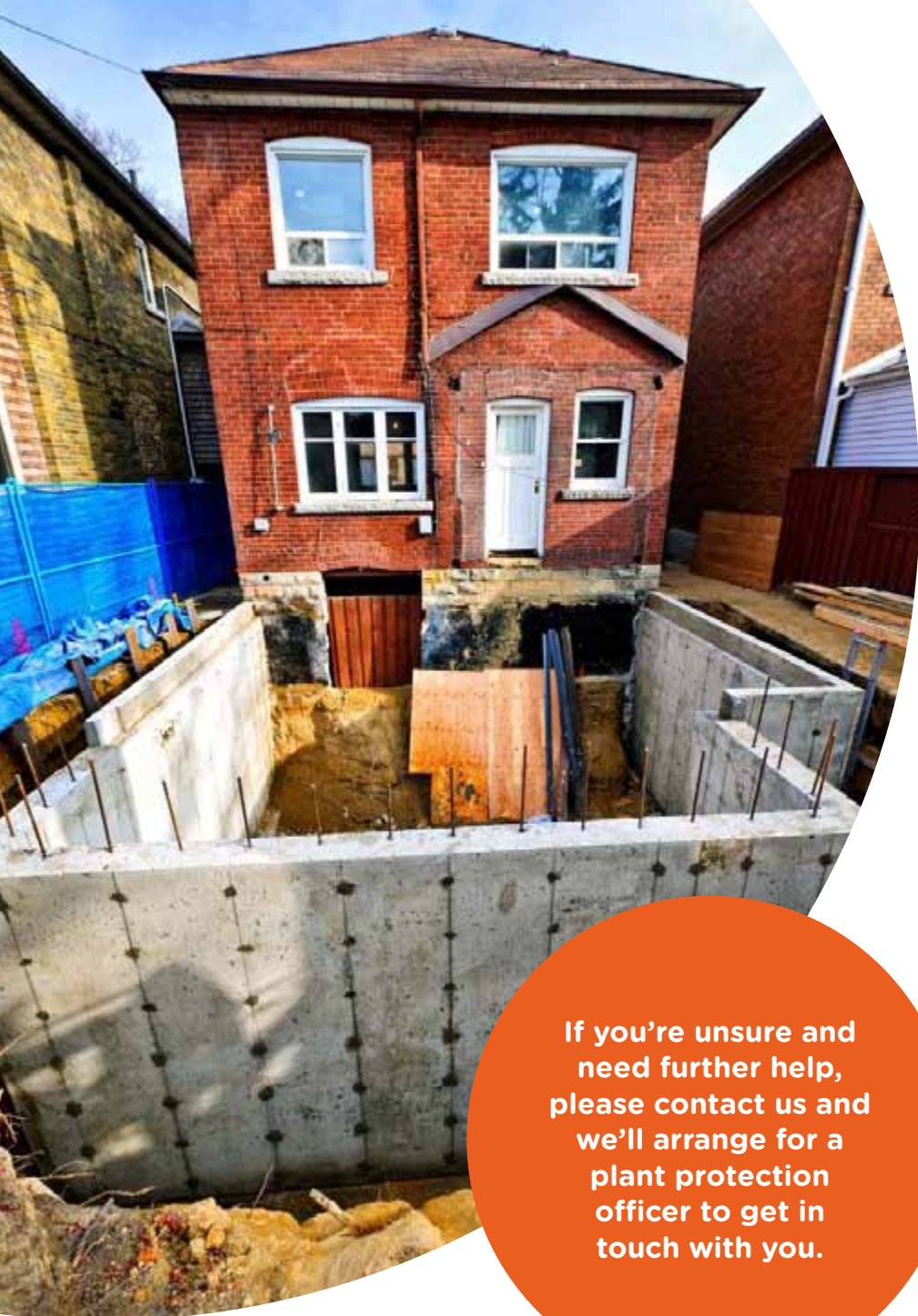
Raspberries, gooseberries and blackcurrants may be planted on the gas main, but a four metre strip, centred on the main, **MUST** be left clear at all times.

on a servitude/easement will be subject to us retaining the right to remove any tree, which in our opinion may become a danger to our mains in the future.

The written consent to plant trees will state what area may be planted and also the type of tree. The diagram details the specific species and the distances they MUST be planted from gas mains or services. You MUST contact us for further information.



Note: For further guidance, please refer to NJUG 10.

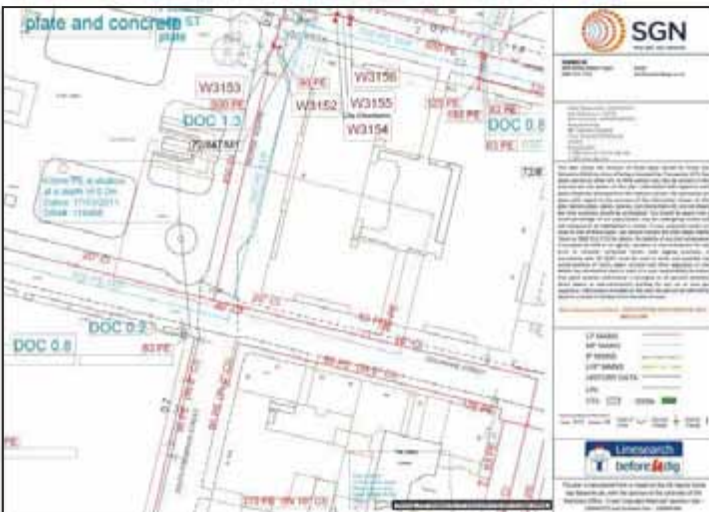


If you're unsure and need further help, please contact us and we'll arrange for a plant protection officer to get in touch with you.

Gas services/work in gardens

If you're going to be carrying out work around your home, or a third party is carrying out work on your behalf, we may send you a site map of our gas mains and services but your own gas service won't be marked.

The simplest way to understand the location of your gas service is to know where it enters your house.



< Your gas service pipe usually takes the shortest route to the gas main, as shown on the sample network map/drawing.



We provide a free plant location enquiry service and we're always happy to help.



Visit our **Dig safely** pages on [sgn.co.uk](https://www.sgn.co.uk)



0800 912 1722 *

*All calls are recorded and may be monitored

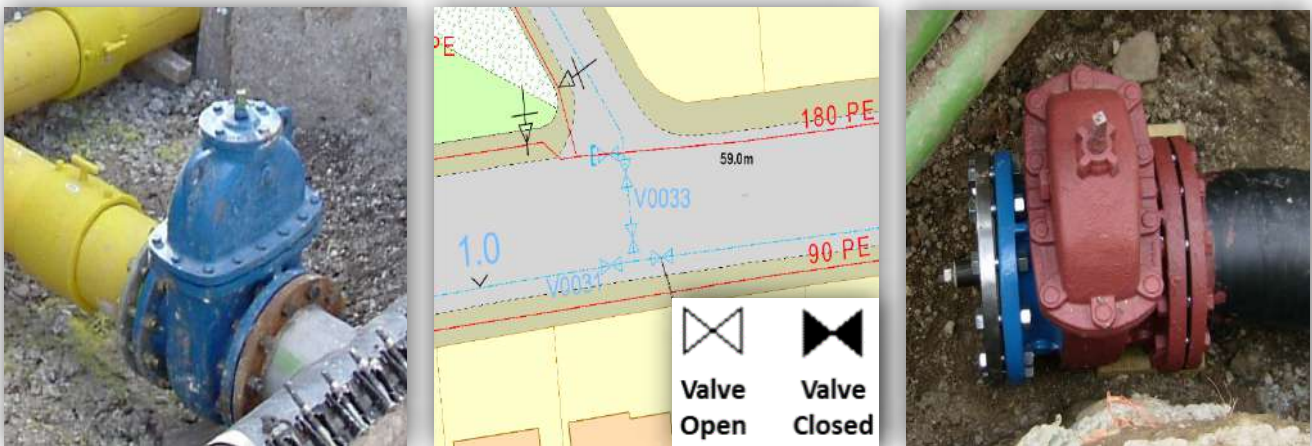
Guidance when undertaking work near gas valves in our network areas

SGN manages the network that distributes gas to 5.8 million homes and businesses across Scotland and the south of England.

Due to a manufacturing issue, we are currently replacing or upgrading certain valve types that are at risk of bolt failure. In extreme cases, this can lead to gas escapes. This is a safety hazard and we have produced this guide to ensure you undertake adequate safety precautions when working near gas valves.

Identifying gas valves

The images below are an illustration of typical gas valves. Please note, valves come in various colours, shapes and sizes, and you may come across a valve that looks different to those found in the images.



What should you do?

When planning to work in our network areas, please observe the following points:

1. You must contact us before starting any work activity within **3.0m** of a gas valve identified on our maps.
2. If an unexpected gas valve is exposed you must immediately stop excavation works and report this to us.
3. To protect yourself against the risks associated with exposing a valve, we advise that you contact us when in doubt.

Contact details

If you require further information or need assistance please contact us:

Safety Admin Team: **0800 912 1722**
plantlocation@sgn.co.uk

Valve enquiries will be forwarded to a local engineer who will provide further safety information.

Stephen Sawyer
Technics Group
Technics House
Guildford
Guildford
Surrey
GU4 7WA

Plant Protection
Cadent
Block 1; Floor 1
Brick Kiln Street
Hinckley
LE10 0NA
E-mail: plantprotection@cadentgas.com
Telephone: +44 (0)800 688588

National Gas Emergency Number:
0800 111 999*

National Grid Electricity Emergency Number:
0800 40 40 90*

* Available 24 hours, 7 days/week.
Calls may be recorded and monitored.

www.cadentgas.com

Date: 04/12/2019

Our Ref: XX_GE4A_3SWX_619051

Your Ref: EMS06547

RE: Proposed Works, Strathmore Centre, Strathmore Road, Teddington, Greater London

Thank you for your enquiry which was received on 04/12/2019.
Please note this response and any attached map(s) are valid for 28 days.

An assessment has been carried out with respect to Cadent Gas Limited, National Grid Electricity Transmission plc's and National Grid Gas Transmission plc's apparatus. Please note it does not cover the items listed in the section "Your Responsibilities and Obligations", including gas service pipes and related apparatus.

For details of Network areas please see the Cadent website (<http://cadentgas.com/Digging-safely/Dial-before-you-dig>) or the enclosed documentation.

As your works are at a "proposed" stage, any maps and guidance provided are for information purposes only. This is not approval to commence work. You must submit a "Scheduled Works" enquiry at the earliest opportunity and failure to do this may lead to disruption to your plans and works. Plant Protection will endeavour to provide an initial assessment within 14 days of receipt of a Scheduled Works enquiry and dependent on the outcome of this, further consultation may be required.

In any event, for safety and legal reasons, works must not be carried out until a Scheduled Works enquiry has been completed and final response received.

Your Responsibilities and Obligations

The "Assessment" Section below outlines the detailed requirements that must be followed when planning or undertaking your scheduled activities at this location.

It is your responsibility to ensure that the information you have submitted is accurate and that all relevant documents including links are provided to all persons (either direct labour or contractors) working for you near Cadent and/or National Grid's apparatus, e.g. as contained within the Construction (Design and Management) Regulations.

This assessment solely relates to Cadent Gas Limited, National Grid Electricity Transmission plc (NGET) and National Grid Gas Transmission plc (NGGT) and apparatus. This assessment does **NOT** include:

- Cadent and/or National Grid's legal interest (easements or wayleaves) in the land which restricts activity in proximity to Cadent and/or National Grid's assets in private land. You must obtain details of any such restrictions from the landowner in the first instance and if in doubt contact Plant Protection.
- Gas service pipes and related apparatus
- Recently installed apparatus
- Apparatus owned by other organisations, e.g. other gas distribution operators, local electricity companies, other utilities, etc.

It is **YOUR** responsibility to take into account whether the items listed above may be present and if they could be affected by your proposed activities. Further "Essential Guidance" in respect of these items can be found on either the [National Grid](#) or [Cadent](#) website.

This communication does not constitute any formal agreement or consent for any proposed development work; either generally or with regard to Cadent and/or National Grid's easements or wayleaves nor any planning or building regulations applications.

Cadent Gas Limited, NGGT and NGET or their agents, servants or contractors do not accept any liability for any losses arising under or in connection with this information. This limit on liability applies to all and any claims in contract, tort (including negligence), misrepresentation (excluding fraudulent misrepresentation), breach of statutory duty or otherwise. This limit on liability does not exclude or restrict liability where prohibited by the law nor does it supersede the express terms of any related agreements.

If you require further assistance please contact the Plant Protection team via e-mail ([click here](#)) or via the contact details at the top of this response.

Yours faithfully

Plant Protection Team

ASSESSMENT

Affected Apparatus

The apparatus that has been identified as being in the vicinity of your proposed works is:

Low or Medium pressure (below 2 bar) gas pipes and associated equipment. (As a result it is highly likely that there are gas services and associated apparatus in the vicinity)

Requirements

BEFORE carrying out any work you must:

Carefully read these requirements including the attached guidance documents and maps showing the location of apparatus.

Contact the landowner and ensure any proposed works in private land do not infringe Cadent and/or National Grid's legal rights (i.e. easements or wayleaves). If the works are in the road or footpath the relevant local authority should be contacted.

Ensure that all persons, including direct labour and contractors, working for you on or near Cadent and/or National Grid's apparatus follow the requirements of the HSE Guidance Notes HSG47 - 'Avoiding Danger from Underground Services' and GS6 – 'Avoidance of danger from overhead electric power lines'. This guidance can be downloaded free of charge at <http://www.hse.gov.uk>

In line with the above guidance, verify and establish the actual position of mains, pipes, cables, services and other apparatus on site before any activities are undertaken.

GUIDANCE

Excavating Safely - Avoiding injury when working near gas pipes:

http://www.nationalgrid.com/NR/rdonlyres/2D2EEA97-B213-459C-9A26-18361C6E0B0D/25249/Digsafe_leaflet3e2finalamends061207.pdf

Standard Guidance

Essential Guidance document:

<http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=8589934982>

General Guidance document:

<http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=35103>

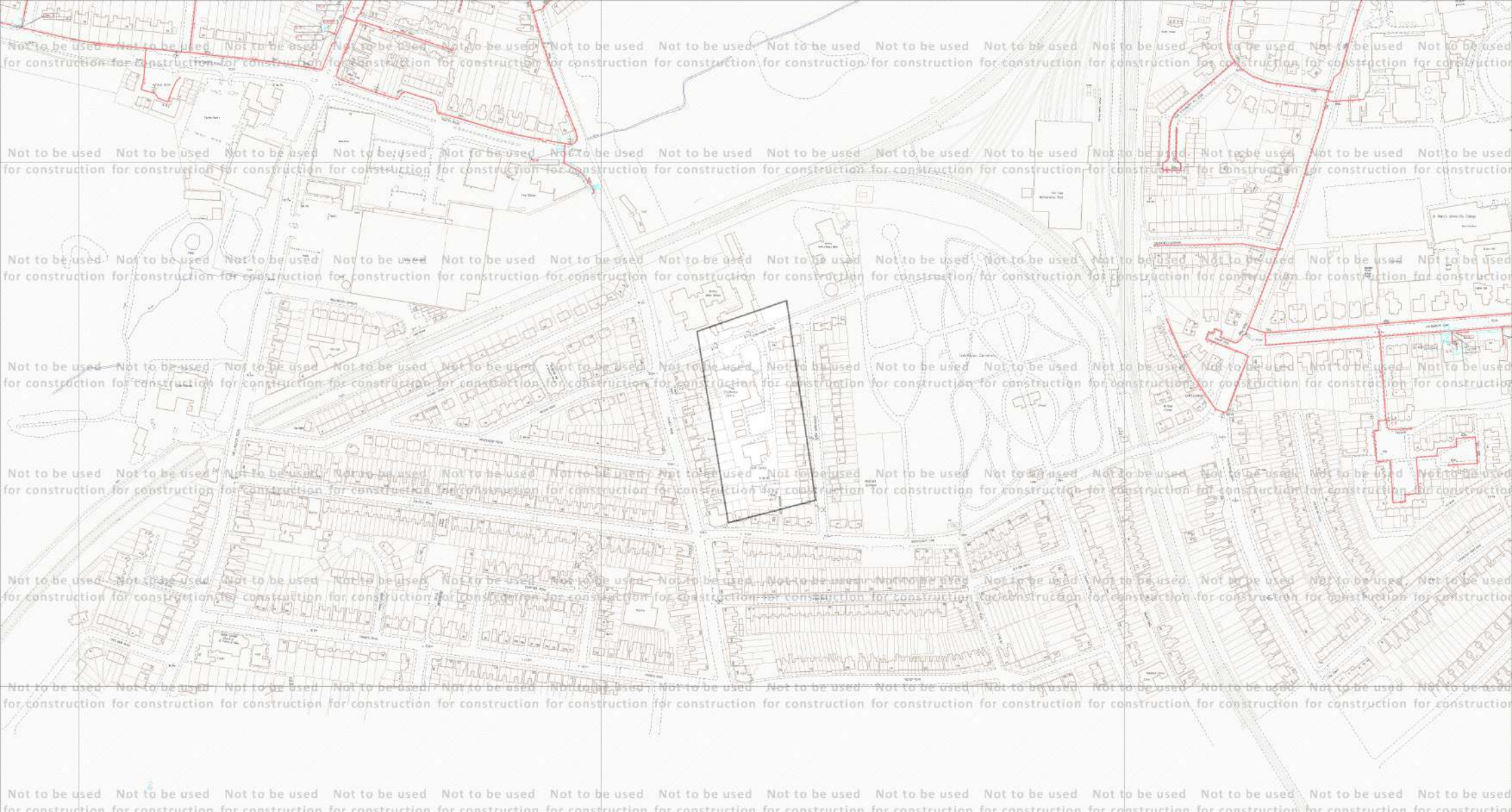
Excavating Safely in the vicinity of gas pipes guidance (Credit card):

<http://www.nationalgrid.com/NR/rdonlyres/A3D37677-6641-476C-9DDA-E89949052829/44257/ExcavatingSafelyCreditCard.pdf>

Excavating Safely in the vicinity of electricity cables guidance (Credit card):






<http://www.nationalgrid.com/NR/rdonlyres/35DDEC6D-D754-4BA5-AF3C-D607D05A25C2/44858/ExcavatingSafelyCreditCardelectricitycables.pdf>


Copies of all the Guidance Documents can also be downloaded from the [National Grid](#) and [Cadent](#) websites.



ID: XX_GE4A_3SWX_619051
 USER: utilityreports
 DATE: 04/12/2019
 DATA DATE: 02/12/2019
 REF: EMS06547
 MAP REF: TQ1571
 CENTRE: 515148, 171762

View extent: 1445m, 785m

LP MAINS 
 MP MAINS 
 IP MAINS 
 LHP MAINS 
 NHP MAINS 


0m  100m
 Approximate scale 1:5000
 on A4 Colour Landscape

Map not to be used for construction

This plan shows those pipes owned by Cadent Gas Limited in its role as a Licensed Gas Transporter (GT). Gas pipes owned by other GTs, or otherwise privately owned, may be present in this area. Information with regard to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc., are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Cadent Gas Limited or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

Map 1 of 1 (GAS)

MAPS Plot Server Version 1.11.0






Cadent
Your Gas Network

Requested by: Technics Group

This plan is reproduced from or based on the OS map by Cadent Gas Limited, with the sanction of the controller of HM Stationery Office. Crown Copyright Reserved. Ordnance Survey Licence number 100024886

Some examples of Plant Items:

Valve  Depth of Cover  Syphon  Diameter Change  Material Change  Out of Standard Service 

ENQUIRY SUMMARY

Received Date

04/12/2019

Your Reference

EMS06547

Location

Centre Point: 515148, 171762

X Extent: 115

Y Extent: 214

Postcode: TW11 8UH

Location Description: Strathmore Centre, Strathmore Road, Teddington, Greater London

Map Options

Paper Size: A4

Orientation: LANDSCAPE

Requested Scale: 2500

Actual Scale: 1:5000 (GAS)

Real World Extents: 1445m x 785m (GAS)

Recipients

utility.reports@technicsgroup.com

Enquirer Details

Organisation Name: Technics Group

Contact Name: Stephen Sawyer

Email Address: utility.reports@technicsgroup.com

Telephone: 01483 230080

Address: Technics House, Guildford, Guildford, Surrey, GU4 7WA

Description of Works

Strathmore Centre, Strathmore Road, Teddington, Greater London

Enquiry Type

Proposed Works

Activity Type

Utility Works

Work Types

Work Type: Plans Only

Telecoms/Cable

Maps by email 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 near 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	Change Of State	+	Hatchings
PCP			Split Coupling		Built
Pole			Duct Tee		Planned
Box			Building		Inferred
Manhole			Kiosk		Duct
Cabinet			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	

Reproduced from the Ordnance Survey map by BT by permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationary Office
(C) Crown Copyright British Telecommunications plc 100028040

BT Ref : GQY09598H
Map Reference : (centre) TQ1514671760
Easting/Northing : (centre) 515146,171760
Issued : 05/12/2019 10:00:14

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

Water and Sewers

Asset location search



Property Searches

Subtechnics Ltd
Technics House
Merrow Lane
GUILDFORD
GU4 7WA

Search address supplied Strathmore Centre
Strathmore Road
Teddington
TW11 8UH

Your reference EMS06547

Our reference ALS/ALS Standard/2019_4121958

Search date 4 December 2019

Keeping you up-to-date

Knowledge of features below the surface is essential for every development

The benefits of this knowledge not only include ensuring due diligence and avoiding risk, but also being able to ascertain the feasibility of any development.

Did you know that Thames Water Property Searches can also provide a variety of utility searches including a more comprehensive view of utility providers' assets (across up to 35-45 different providers), as well as more focused searches relating to specific major utility companies such as National Grid (gas and electric).

Contact us to find out more.



Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13



searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk



0845 070 9148



Search address supplied: Strathmore Centre, Strathmore Road, Teddington, TW11 8UH

Dear Sir / Madam

An Asset Location Search is recommended when undertaking a site development. It is essential to obtain information on the size and location of clean water and sewerage assets to safeguard against expensive damage and allow cost-effective service design.

The following records were searched in compiling this report: - the map of public sewers & the map of waterworks. Thames Water Utilities Ltd (TWUL) holds all of these.

This search provides maps showing the position, size of Thames Water assets close to the proposed development and also manhole cover and invert levels, where available.

Please note that none of the charges made for this report relate to the provision of Ordnance Survey mapping information. The replies contained in this letter are given following inspection of the public service records available to this company. No responsibility can be accepted for any error or omission in the replies.

You should be aware that the information contained on these plans is current only on the day that the plans are issued. The plans should only be used for the duration of the work that is being carried out at the present time. Under no circumstances should this data be copied or transmitted to parties other than those for whom the current work is being carried out.

Thames Water do update these service plans on a regular basis and failure to observe the above conditions could lead to damage arising to new or diverted services at a later date.

Contact Us

If you have any further queries regarding this enquiry please feel free to contact a member of the team on 0845 070 9148, or use the address below:

Thames Water Utilities Ltd
Property Searches
PO Box 3189
Slough
SL1 4WW

Email: searches@thameswater.co.uk

Web: www.thameswater-propertysearches.co.uk

Waste Water Services

Please provide a copy extract from the public sewer map.

Enclosed is a map showing the approximate lines of our sewers. Our plans do not show sewer connections from individual properties or any sewers not owned by Thames Water unless specifically annotated otherwise. Records such as "private" pipework are in some cases available from the Building Control Department of the relevant Local Authority.

Where the Local Authority does not hold such plans it might be advisable to consult the property deeds for the site or contact neighbouring landowners.

This report relates only to sewerage apparatus of Thames Water Utilities Ltd, it does not disclose details of cables and or communications equipment that may be running through or around such apparatus.

The sewer level information contained in this response represents all of the level data available in our existing records. Should you require any further Information, please refer to the relevant section within the 'Further Contacts' page found later in this document.

For your guidance:

- The Company is not generally responsible for rivers, watercourses, ponds, culverts or highway drains. If any of these are shown on the copy extract they are shown for information only.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.

Clean Water Services

Please provide a copy extract from the public water main map.

Enclosed is a map showing the approximate positions of our water mains and associated apparatus. Please note that records are not kept of the positions of individual domestic supplies.

For your information, there will be a pressure of at least 10m head at the outside stop valve. If you would like to know the static pressure, please contact our Customer Centre on 0800 316 9800. The Customer Centre can also arrange for a full flow and pressure test to be carried out for a fee.

Asset location search



Property Searches

For your guidance:

- Assets other than vested water mains may be shown on the plan, for information only.
- If an extract of the public water main record is enclosed, this will show known public water mains in the vicinity of the property. It should be possible to estimate the likely length and route of any private water supply pipe connecting the property to the public water network.

Payment for this Search

A charge will be added to your suppliers account.

Further contacts:

Waste Water queries

Should you require verification of the invert levels of public sewers, by site measurement, you will need to approach the relevant Thames Water Area Network Office for permission to lift the appropriate covers. This permission will usually involve you completing a TWOSA form. For further information please contact our Customer Centre on Tel: 0845 920 0800. Alternatively, a survey can be arranged, for a fee, through our Customer Centre on the above number.

If you have any questions regarding sewer connections, budget estimates, diversions, building over issues or any other questions regarding operational issues please direct them to our service desk. Which can be contacted by writing to:

Developer Services (Waste Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

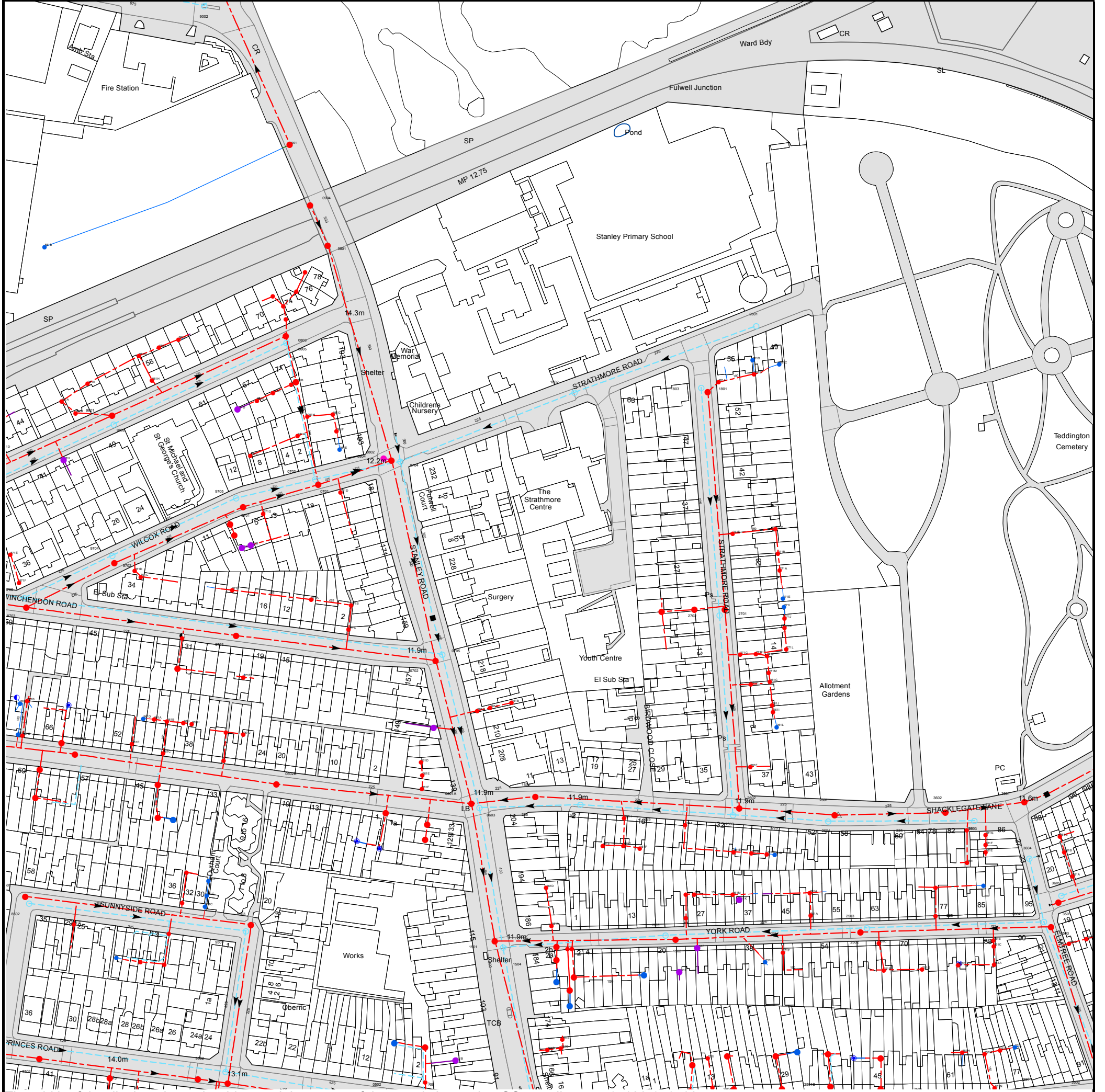
Clean Water queries

Should you require any advice concerning clean water operational issues or clean water connections, please contact:

Developer Services (Clean Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

Asset Location Search Sewer Map - ALS/ALS Standard/2019_4121958



The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 515128,171762
The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Based on the Ordnance Survey Map with the Sanction of the controller of H.M. Stationery Office, License no. 100019345 Crown Copyright Reserved.

NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
1501	n/a	n/a
251A	n/a	n/a
261A	n/a	n/a
9801	14.85	12.64
881A	n/a	n/a
981A	n/a	n/a
0803	14.27	11.45
361B	n/a	n/a
351Q	n/a	n/a
361A	n/a	n/a
351R	n/a	n/a
351J	n/a	n/a
251G	n/a	n/a
35ZY	n/a	n/a
36ZV	n/a	n/a
3602	n/a	n/a
351E	n/a	n/a
351H	n/a	n/a
361H	n/a	n/a
361I	n/a	n/a
3603	n/a	n/a
36ZX	n/a	n/a
351M	n/a	n/a
361E	n/a	n/a
361F	n/a	n/a
361G	n/a	n/a
351B	n/a	n/a
351C	n/a	n/a
351A	n/a	n/a
351N	n/a	n/a
351K	n/a	n/a
351L	n/a	n/a
3601	n/a	n/a
3604	n/a	n/a
3504	n/a	n/a
3503	n/a	n/a
3501	n/a	n/a
361C	n/a	n/a
3605	n/a	n/a
0801	n/a	n/a
081G	n/a	n/a
081F	n/a	n/a
081E	n/a	n/a
071D	n/a	n/a
071C	n/a	n/a
071B	n/a	n/a
0804	n/a	n/a
0802	12.36	9.46
0704	12.25	10.14
0702	n/a	n/a
0705	n/a	n/a
1802	n/a	n/a
17ZX	n/a	n/a
17ZW	n/a	n/a
1803	n/a	n/a
1801	n/a	n/a
281A	n/a	n/a
2702	n/a	n/a
2701	n/a	n/a
271D	n/a	n/a
271G	n/a	n/a
261H	n/a	n/a
261G	n/a	n/a
271M	n/a	n/a
271F	n/a	n/a
271H	n/a	n/a
271L	n/a	n/a
271K	n/a	n/a
271J	n/a	n/a
271I	n/a	n/a
271E	n/a	n/a
271A	n/a	n/a
271B	n/a	n/a
271C	n/a	n/a
281B	n/a	n/a
281C	n/a	n/a
281D	n/a	n/a
2801	n/a	n/a
881B	n/a	n/a
981G	n/a	n/a
981H	n/a	n/a
981J	n/a	n/a
981F	n/a	n/a
9002	n/a	n/a
981D	n/a	n/a
981E	n/a	n/a
0806	n/a	n/a
081C	n/a	n/a
0807	n/a	n/a
0808	n/a	n/a
0805	14.21	11.41

Manhole Reference	Manhole Cover Level	Manhole Invert Level
0901	n/a	n/a
081D	n/a	n/a
081B	n/a	n/a
0809	n/a	n/a
0810	n/a	n/a
0904	n/a	n/a
2502	n/a	n/a
2503	n/a	n/a
15XP	n/a	n/a
251K	n/a	n/a
261M	n/a	n/a
161I	n/a	n/a
16ZS	n/a	n/a
261B	n/a	n/a
261C	n/a	n/a
261D	n/a	n/a
261E	n/a	n/a
161F	n/a	n/a
161E	n/a	n/a
161G	n/a	n/a
161A	n/a	n/a
2604	n/a	n/a
161H	n/a	n/a
2601	n/a	n/a
2603	n/a	n/a
2602	n/a	n/a
1602	n/a	n/a
261F	n/a	n/a
261L	n/a	n/a
261I	n/a	n/a
261J	n/a	n/a
15ZW	n/a	n/a
25YR	n/a	n/a
25YX	n/a	n/a
25XY	n/a	n/a
251J	n/a	n/a
25ZX	n/a	n/a
15ZT	n/a	n/a
251I	n/a	n/a
25YS	n/a	n/a
25YZ	n/a	n/a
25XZ	n/a	n/a
25ZY	n/a	n/a
25YP	n/a	n/a
15XV	n/a	n/a
15XT	n/a	n/a
15YV	n/a	n/a
15YQ	n/a	n/a
151E	n/a	n/a
251B	n/a	n/a
251H	n/a	n/a
251F	n/a	n/a
15YT	n/a	n/a
15XS	n/a	n/a
151F	n/a	n/a
251C	n/a	n/a
1502	n/a	n/a
1503	n/a	n/a
06ZW	n/a	n/a
05ZQ	n/a	n/a
061D	n/a	n/a
061F	n/a	n/a
061E	n/a	n/a
05YY	n/a	n/a
05YZ	n/a	n/a
06YZ	n/a	n/a
06YY	n/a	n/a
061H	n/a	n/a
051B	n/a	n/a
0601A	n/a	n/a
061G	n/a	n/a
0603	n/a	n/a
161C	n/a	n/a
1504	n/a	n/a
161B	n/a	n/a
1601	n/a	n/a
161D	n/a	n/a
151D	n/a	n/a
151A	n/a	n/a
15YP	n/a	n/a
15XX	n/a	n/a
15XY	n/a	n/a
151C	n/a	n/a
151B	n/a	n/a
961D	n/a	n/a
961A	n/a	n/a
96YY	n/a	n/a
96YW	n/a	n/a
961C	n/a	n/a
95ZR	n/a	n/a
961B	n/a	n/a
95ZT	n/a	n/a
96YT	n/a	n/a



















Manhole Reference	Manhole Cover Level	Manhole Invert Level
95XQ	n/a	n/a
961I	n/a	n/a
96XT	n/a	n/a
961H	n/a	n/a
9505	13.21	11.46
951C	n/a	n/a
961G	n/a	n/a
961F	n/a	n/a
96ZS	n/a	n/a
9502	13.11	10.99
96ZT	n/a	n/a
9504	13.05	11.25
961J	n/a	n/a
9501	12.96	11.31
9503	12.88	11.51
0602B	n/a	n/a
861B	n/a	n/a
981I	n/a	n/a
981B	n/a	n/a
9704	12.99	11.03
9802	14.14	12.17
9702	13.72	11.28
971D	n/a	n/a
971C	n/a	n/a
97ZT	n/a	n/a
97ZS	n/a	n/a
97ZX	n/a	n/a
971F	n/a	n/a
97ZY	n/a	n/a
9705	12.99	11.03
9703	12.77	10.86
971A	n/a	n/a
9701	12.96	10.68
971E	n/a	n/a
981C	n/a	n/a
971B	n/a	n/a
971G	n/a	n/a
081A	n/a	n/a
081H	n/a	n/a
071A	n/a	n/a
0703	12.53	10.42
0701	12.55	10.06
861D	n/a	n/a
861C	n/a	n/a
8601	14.91	13.57
8502	14.92	13.32
86YZ	n/a	n/a
8503	14.58	12.75
86ZQ	n/a	n/a
96XZ	n/a	n/a
951E	n/a	n/a
9601B	n/a	n/a
95XS	n/a	n/a
95ZP	n/a	n/a
961E	n/a	n/a
95ZQ	n/a	n/a
871E	n/a	n/a
871F	n/a	n/a
861E	n/a	n/a
8706	14.5	12.16
8703	14.45	11.85

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.








ALS Sewer Map Key

Public Sewer Types (Operated & Maintained by Thames Water)

-  **Foul:** A sewer designed to convey waste water from domestic and industrial sources to a treatment works.
-  **Surface Water:** A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.
-  **Combined:** A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.
-  **Trunk Surface Water**
-  **Trunk Foul**
-  **Storm Relief**
-  **Trunk Combined**
-  **Vent Pipe**
-  **Bio-solids (Sludge)**
-  **Proposed Thames Surface Water Sewer**
-  **Proposed Thames Water Foul Sewer**
-  **Gallery**
-  **Foul Rising Main**
-  **Surface Water Rising Main**
-  **Combined Rising Main**
-  **Sludge Rising Main**
-  **Proposed Thames Water Rising Main**
-  **Vacuum**





Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

-  Air Valve
-  Dam Chase
-  Fitting
-  Meter
-  Vent Column




Operational Controls

A feature in a sewer that changes or diverts the flow in the sewer. Example: A hydrobrake limits the flow passing downstream.

-  Control Valve
-  Drop Pipe
-  Ancillary
-  Weir






End Items

End symbols appear at the start or end of a sewer pipe. Examples: an Undefined End at the start of a sewer indicates that Thames Water has no knowledge of the position of the sewer upstream of that symbol, Outfall on a surface water sewer indicates that the pipe discharges into a stream or river.

-  Outfall
-  Undefined End
-  Inlet






Other Symbols

Symbols used on maps which do not fall under other general categories








-  /  Public/Private Pumping Station
-  Change of characteristic indicator (C.O.C.I.)
-  Invert Level
-  Summit

Areas

Lines denoting areas of underground surveys, etc.

-  Agreement
-  Operational Site
-  Chamber
-  Tunnel
-  Conduit Bridge

Other Sewer Types (Not Operated or Maintained by Thames Water)

-  Foul Sewer
-  Surface Water Sewer
-  Combined Sewer
-  Gully
-  Culverted Watercourse
-  Proposed
-  Abandoned Sewer

Notes:

- 1) All levels associated with the plans are to Ordnance Datum Newlyn.
- 2) All measurements on the plans are metric.
- 3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate direction of flow.
- 4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.
- 5) 'na' or '0' on a manhole level indicates that data is unavailable.
- 6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimetres. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology present on the plan, please contact a member of Property Insight on 0845 070 9148.

Asset Location Search Water Map - ALS/ALS Standard/2019_4121958










The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 515128, 171762.
The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Based on the Ordnance Survey Map with the Sanction of the controller of H.M. Stationery Office, License no. 100019345 Crown Copyright Reserved.







ALS Water Map Key

Water Pipes (Operated & Maintained by Thames Water)


- 
Distribution Main: The most common pipe shown on water maps. With few exceptions, domestic connections are only made to distribution mains.
- 
Trunk Main: A main carrying water from a source of supply to a treatment plant or reservoir, or from one treatment plant or reservoir to another. Also a main transferring water in bulk to smaller water mains used for supplying individual customers.
- 
Supply Main: A supply main indicates that the water main is used as a supply for a single property or group of properties.
- 
Fire Main: Where a pipe is used as a fire supply, the word FIRE will be displayed along the pipe.
- 
Metered Pipe: A metered main indicates that the pipe in question supplies water for a single property or group of properties and that quantity of water passing through the pipe is metered even though there may be no meter symbol shown.
- 
Transmission Tunnel: A very large diameter water pipe. Most tunnels are buried very deep underground. These pipes are not expected to affect the structural integrity of buildings shown on the map provided.
- 
Proposed Main: A main that is still in the planning stages or in the process of being laid. More details of the proposed main and its reference number are generally included near the main.

PIPE DIAMETER	DEPTH BELOW GROUND
Up to 300mm (12")	900mm (3')
300mm - 600mm (12" - 24")	1100mm (3' 8")
600mm and bigger (24" plus)	1200mm (4')

Valves

-  General Purpose Valve
-  Air Valve
-  Pressure Control Valve
-  Customer Valve

Hydrants








-  Single Hydrant

Meters










-  Meter

End Items

Symbol indicating what happens at the end of a water main.

-  Blank Flange
-  Capped End
-  Emptying Pit
-  Undefined End
-  Manifold
-  Customer Supply
-  Fire Supply



Operational Sites

-  Booster Station
-  Other
-  Other (Proposed)
-  Pumping Station
-  Service Reservoir
-  Shaft Inspection
-  Treatment Works
-  Unknown
-  Water Tower

Other Symbols

-  Data Logger

Other Water Pipes (Not Operated or Maintained by Thames Water)

-  **Other Water Company Main:** Occasionally other water company water pipes may overlap the border of our clean water coverage area. These mains are denoted in purple and in most cases have the owner of the pipe displayed along them.
-  **Private Main:** Indicates that the water main in question is not owned by Thames Water. These mains normally have text associated with them indicating the diameter and owner of the pipe.

Terms and Conditions

All sales are made in accordance with Thames Water Utilities Limited (TWUL) standard terms and conditions unless previously agreed in writing.

1. All goods remain in the property of Thames Water Utilities Ltd until full payment is received.
2. Provision of service will be in accordance with all legal requirements and published TWUL policies.
3. All invoices are strictly due for payment 14 days from due date of the invoice. Any other terms must be accepted/agreed in writing prior to provision of goods or service, or will be held to be invalid.
4. Thames Water does not accept post-dated cheques-any cheques received will be processed for payment on date of receipt.
5. In case of dispute TWUL's terms and conditions shall apply.
6. Penalty interest may be invoked by TWUL in the event of unjustifiable payment delay. Interest charges will be in line with UK Statute Law 'The Late Payment of Commercial Debts (Interest) Act 1998'.
7. Interest will be charged in line with current Court Interest Charges, if legal action is taken.
8. A charge may be made at the discretion of the company for increased administration costs.

A copy of Thames Water's standard terms and conditions are available from the Commercial Billing Team (cashoperations@thameswater.co.uk).

We publish several Codes of Practice including a guaranteed standards scheme. You can obtain copies of these leaflets by calling us on 0800 316 9800

If you are unhappy with our service you can speak to your original goods or customer service provider. If you are not satisfied with the response, your complaint will be reviewed by the Customer Services Director. You can write to her at: Thames Water Utilities Ltd. PO Box 492, Swindon, SN38 8TU.

If the Goods or Services covered by this invoice falls under the regulation of the 1991 Water Industry Act, and you remain dissatisfied you can refer your complaint to Consumer Council for Water on 0121 345 1000 or write to them at Consumer Council for Water, 1st Floor, Victoria Square House, Victoria Square, Birmingham, B2 4AJ.

Ways to pay your bill

Credit Card	BACS Payment	Telephone Banking	Cheque
<p>Call 0845 070 9148 quoting your invoice number starting CBA or ADS / OSS</p>	<p>Account number 90478703 Sort code 60-00-01 A remittance advice must be sent to: Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW. or email ps.billing@thameswater.co.uk</p>	<p>By calling your bank and quoting: Account number 90478703 Sort code 60-00-01 and your invoice number</p>	<p>Made payable to 'Thames Water Utilities Ltd' Write your Thames Water account number on the back. Send to: Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW or by DX to 151280 Slough 13</p>

Thames Water Utilities Ltd Registered in England & Wales No. 2366661 Registered Office Clearwater Court, Vastern Rd, Reading, Berks, RG1 8DB.



Search Code

IMPORTANT CONSUMER PROTECTION INFORMATION

This search has been produced by Thames Water Property Searches, Clearwater Court, Vastern Road, Reading RG1 8DB, which is registered with the Property Codes Compliance Board (PCCB) as a subscriber to the Search Code. The PCCB independently monitors how registered search firms maintain compliance with the Code.

The Search Code:

- provides protection for homebuyers, sellers, estate agents, conveyancers and mortgage lenders who rely on the information included in property search reports undertaken by subscribers on residential and commercial property within the United Kingdom
- sets out minimum standards which firms compiling and selling search reports have to meet
- promotes the best practise and quality standards within the industry for the benefit of consumers and property professionals
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.

By giving you this information, the search firm is confirming that they keep to the principles of the Code. This provides important protection for you.

The Code's core principles

Firms which subscribe to the Search Code will:

- display the Search Code logo prominently on their search reports
- act with integrity and carry out work with due skill, care and diligence
- at all times maintain adequate and appropriate insurance to protect consumers
- conduct business in an honest, fair and professional manner
- handle complaints speedily and fairly
- ensure that products and services comply with industry registration rules and standards and relevant laws
- monitor their compliance with the Code

Complaints

If you have a query or complaint about your search, you should raise it directly with the search firm, and if appropriate ask for any complaint to be considered under their formal internal complaints procedure. If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award compensation of up to £5,000 to you if the Ombudsman finds that you have suffered actual loss and/or aggravation, distress or inconvenience as a result of your search provider failing to keep to the code.

Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs or to the PCCB.

TPOs Contact Details

The Property Ombudsman scheme
Milford House
43-55 Milford Street
Salisbury
Wiltshire SP1 2BP
Tel: 01722 333306
Fax: 01722 332296
Web site: www.tpos.co.uk
Email: admin@tpos.co.uk

You can get more information about the PCCB from www.propertycodes.org.uk

PLEASE ASK YOUR SEARCH PROVIDER IF YOU WOULD LIKE A COPY OF THE SEARCH CODE

END USER LICENCE AGREEMENT

1 Introduction

By accessing this DATA the End User agrees to abide by the Terms and Conditions of Licence contained herein.

2 Definitions

- **LICENSOR** – emapsite.com Limited (Registered Number 3931726: MASDAR House, 1 Reading Road, Eversley, Hants RG27 0RP) who have been licensed to market the Intellectual Property Rights of others under these terms.
- **RESELLER** – Groundsure Limited and/or their own channel partners
- **END USER** – the person, organisation or company who is accessing the DATA, on the basis of these Licence terms, having been accepted as a Licensee by Licensor and paid the Price due to the Reseller in consideration for such Licence, and is identified as the person, organisation or company given on the corresponding invoice for this product from the Reseller.
- **DATA** - means the Products licensed and made available to the End User by the Licensor as a series of data sets which together provide indicative maps showing the underground assets of Utility Providers for England, Wales and Scotland and compiled by Subtechnics Limited.

3 Grant of licence

The licence granted to the End User is personal, revocable, non-exclusive and non-transferable, limited to Internal Use (as defined in clause 5 below) as the only Permitted Use by the End User and is for a period as specified in the corresponding order invoice from the Reseller. Save as expressly authorised to vary in accordance with clause 5 below, the End User shall be prohibited from:

modifying, translating, format-changing, enhancing, reproducing, copying (except where strictly necessary for system back up), redistributing, disseminating, selling, dealing with, licensing, encumbering, reverse engineering, disassembling or decompiling the DATA, or any part of thereof, except to the extent permitted by law;

using the DATA in any manner for the creation of products or services for Distribution;

using DATA otherwise than for Internal Use;

assigning or dealing with in any way its rights under the End User Contract;

putting, or allowing the DATA (or any Derived Data) to be put on any free, open or public access website; and

distributing or granting licences of the DATA (in whatever form) or material derived from DATA (including interrogating DATA), save as expressly varied by relevant part of clause 5 below.

4 Intellectual Property and Copyright

4.1 The End User must acknowledge and agree that all Intellectual Property Rights in the DATA are the absolute property of the Utility Providers (or where relevant Subtechnics Limited or the licensor). Material which is derived, developed or copied from DATA shall be deemed assigned to the relevant Utility Provider as legal and beneficial owner at creation, except as provided in this paragraph. However, where that material is created by End User under relevant Permitted Use by End User authorised by Licensor in accordance with the Agreement, the Intellectual Property in that material shall belong to the End User.

4.2 Copyright statements must be used with DATA as follows:

© Utility Provider (named as applicable) and Subtechnics Limited

5 Permitted use

5.1 PERMITTED USE BY END USER SHALL BE LIMITED TO INTERNAL USE. COMMERCIAL USE SHALL BE PROHIBITED. The meanings of such phrases are set out below.

5.2 Internal Use means the following internal uses by the End User: Without compromising the prohibitions contained in clause 3 above, analysing the DATA against a location or a series of locations to obtain information derived from the DATA such as proximity to underground assets and use of and sharing such information/results of such analysis internally within the End User's legal entity only.

5.3 Commercial Use means use that does not fall under Internal Uses (as above) and involves the provision or any form of Distribution to any third party of the DATA or any material derived from DATA (including Derived Data or Static Data) in connection with, expectation of or anticipation of any direct or indirect commercial benefit or commercial relationship (including a service, broker or agency agreement) and whether or not in return for any consideration (including direct or indirect fee, payment or other benefit), free of charge or for no consideration.

5.4 Derived Data means any material derived from or created using DATA, including where DATA is manipulated, aggregated, integrated, combined, merged, modelled, transformed or processed in or with other data or facilities;

5.5 Static Data means DATA and any data (including Derived Data resulting from Internal Uses presented or included in static format in presentations or reports in hard copy, .pdf or similar format. Static Data does not allow for alteration of the data presented, nor enable any further analysis to be carried out against the data (including against the DATA).

6 Confidentiality

6.1 In this clause 6, 'Confidential Information' means all confidential information disclosed (whether in writing, orally

or by another means and whether directly or indirectly) by a Party to the other Party whether before or after the date of this Agreement which might reasonably be considered confidential, including the DATA, information relating to the DATA, and information relating to any of the operations, plans or intentions, clients, contacts, product information, software, data, processes, methods, know-how, trade secrets, market opportunities and business affairs of a Party.

6.2 Each Party shall treat the other Party's Confidential Information as confidential and shall protect it as such. It shall manage it with not less than the same degree of care as it does its own Confidential Information. In any event where Confidential Information is disclosed in any way by one Party ('Disclosing Party') to the other Party ('Receiving Party'), either before or during the Term of this Agreement or after its expiry or termination for any reason, the Receiving Party shall:

not use Confidential Information for a purpose other than the performance of its obligations under this Agreement;
not disclose Confidential Information to any person except with the prior written consent of the Disclosing Party; and
make every effort to prevent the use or disclosure of Confidential Information.

6.3 During the term of this Agreement the Receiving Party may disclose Confidential Information solely to the extent that such disclosure is necessary for the purposes of this Agreement, to any of its directors, other officers, employees, End Users, Affiliates, contractors or sub-contractors. Receiving Party shall ensure that persons to whom Confidential Information is disclosed are made aware of and comply with the Receiving Party's obligations of confidentiality as if they were the Receiving Party.

7 Information Access

7.1 In so far as the End User is, or is deemed to be, or acts for and on behalf of or on the authority of a Public Authority for the purposes of the Information Access Regimes:

End User acknowledges that the Utility Providers, Subtechnics Limited, Reseller and Licensor consider that DATA is exempted from disclosure because DATA is: proprietary to the Utility Provider and disclosure would harm the interests of the Utility Provider (including its commercial interests);

protected by database rights and other Intellectual Property; confidential and the disclosure of it by the End User would constitute a breach of confidence actionable by the Utility Provider, Subtechnics Limited and/or the Licensor; and confidential commercial or industrial information protected by laws to protect a legitimate economic interest.

7.2 End User shall, in the event it receives a request for information ('Access Request') under the Information Access Regimes pursuant to which the DATA might be disclosed: immediately notify the Reseller of the Access Request and provide the Reseller with full and complete details of the

Access Request and the DATA that may be disclosed, together with any other information the Reseller may request;

consult, as soon as possible within receipt of Access Request, with the Reseller as to whether the DATA constitutes information which is exempt from disclosure or publication pursuant to the Information Access Regimes and/or pursuant to the matters set out above;

notify the Reseller immediately of any final decision as to disclosure of the DATA and no less than 72 hours before any proposed disclosure, as to what if any of the DATA (or any Derived Data) is proposed to be disclosed and co-operate fully and at End User's sole cost with the requirements set out in this paragraph.

7.3 End User shall not disclose the DATA in any publication scheme maintained pursuant to any Information Access Regime without first notifying the Reseller in advance of disclosure in accordance with this paragraph.

7.4 Where the End User is, or is deemed to be, or acts for and on behalf of or on the authority of a Public Authority under the Information Access Regimes and the End User seeks to make disclosure or discloses DATA under the Information Access Regimes without the consent of the Reseller, such disclosure shall entitle the Reseller and/or the Licensor and/or Subtechnics Limited to terminate the End User Contract with immediate effect and without liability on their part.

7.5 The Contracts (Rights of Third Parties) Act 1999 shall apply for the benefit of Subtechnics Limited and the Licensor and the Reseller that Subtechnics Limited and/or the Licensor and/or the Reseller may (but shall have no obligation to) enforce any of the terms in the End User Contract which relate to disclosure under the Information Access Regimes, limitation on liability, use of DATA or infringement of Intellectual Property Rights in the DATA.

8 Termination

8.1 The licence must terminate automatically in the event that the End User materially breaches any of the requirement / obligations set out in this End User Licence Agreement. All use of DATA and material derived from DATA shall cease promptly in such event, except as follows:

- Following expiry of the End User Contract, the End User may continue to use limited material created using DATA during the term of its End User Contract. Such material is limited to that which is both properly authorised as relevant Permitted Use by the End User and is in static form, i.e. such that after termination it is not changed, added to, updated, modified in any other way or used in or to create any new, updated, supplemented or modified product, tool, analysis or material.
- Material which is not in static form (including probabilistic modelling and models and output therefrom, which is automatically deemed to be not static) shall not be used after termination of the End User Contract.

- the End User must be prohibited from using DATA (including in Reseller's Product/Service), and from deriving any new, updated, supplemented or modified product, tool or material from DATA, after the date of termination of its End User Contract.

8.2 The invalidity or unenforceability of any part of this Agreement shall not prejudice or affect the validity or enforceability of the remainder of the Agreement, which shall remain in full force and effect. If any provision of this Agreement is found to be invalid, illegal or unenforceable but would cease to be so if some part of the provision were deleted or modified, the provision in question shall apply with such minimum modification as may be necessary to make it valid, legal and enforceable and still give effect to the commercial intention of the Parties in this Agreement.

9 Fees

9.1 The End User must acknowledge its obligation to pay licence fees to the Reseller. The total price of the Products shall be the Reseller's written quoted price as varied from time to time. The price is exclusive of any applicable Value Added Tax, which the End User shall be additionally liable to pay to Licensors.

9.2 End User shall pay in full on order or shall pay within 30 days of the date of invoice, if accepted for an account with the Reseller. The time of payment shall be of the essence of the Contract. All payments shall be made in full without deduction in respect of any set-off or counterclaim. If the End User fails to make any payment on the due date then without prejudice to any other right or remedy available to Licensors, Licensors shall be entitled to:

cancel the Contract or suspend any deliveries to the End User;

appropriate any payment made by the End User to the DATA; and

charge the End User interest (both before and after any judgment) on the amount unpaid, at the rate of 4 per cent per annum over the base rate for the time being of Barclays Bank PLC.

Licence to DATA is not deemed to commence until payment has been made of the Price in full to Licensors.

10 Liability

10.1 Licensors warrant that the DATA will correspond with its specification at the time of delivery. The above warranty does not extend to any defect resulting from use of the DATA with materials or equipment not supplied by Licensor. The above warranty is given by Licensors subject to the following conditions:

Neither Licensor nor Reseller shall be under any liability in respect of any defect in the DATA arising from any drawing, design or specification supplied by the End User or in respect of any defect arising from failure to follow Licensors' guidance, misuse or alteration of the DATA without Licensors' approval;

Neither Licensor nor Reseller shall be under any liability under the above warranty (or any other warranty, condition or guarantee) if the total price for the DATA has not been paid by the due date for payment; and Except in respect of death or personal injury caused by Licensor or Reseller's negligence, neither Licensor nor Reseller shall be liable to the End User for any consequential loss or damage (whether for loss of profit or otherwise), costs, expenses, or other claim for consequential compensation whatsoever which arises out of or in connection with the supply of the DATA, except as expressly provided in these Conditions.

Except in respect of injury to or death of any person Licensor's and Reseller's aggregate liability for breach of contract, negligence or other default shall not exceed the value of the Contract.

Except as expressed here all warranties, conditions or other terms implied by statute or common law are excluded to the fullest extent permitted by law.

11 Governing Law and Jurisdiction

The End User Contract and any matter, dispute or claim arising from or in connection with the End User Contract in so far as it applies to DATA and its use (including non-contractual disputes or claims) shall be governed by and construed in accordance with English law. The End User must submit to the mediation process prescribed in the Agreement and, subject to that, to the exclusive jurisdiction of the English court.

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