

Utilities Statement

Student Development, NCP 3 Land at East Street, Reading

Prepared for Studios Construction Ltd, October 2018



envision

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EXECUTIVE SUMMARY

1. This Utilities Statement has been prepared by Envision on behalf of Studios Development (Reading Ltd) and is submitted to support a planning application for the erection of a purpose-built student accommodation, comprising 135 bedrooms and associated facilities, on land at East Street, Reading.
2. This report contains the results of the investigation and appraisal of the Statutory Utility Authorities for Gas, Water, Electricity, Telecommunications and other underground services in the vicinity or site for the proposed development, Land at East Street, Reading, RG1 4QJ. This report is an overview assessment as requested by the client.
3. The record information identifies the proposed site is clear of any existing utility infrastructure, however there are a number of buried services running adjacent to the proposed development site in East Street which appear very close to the proposed site boundary and or run in the curtilage of the current site which will be affected by the development. Checks should be made as the design develops to ensure these services are not on the proposed site or if re-routing or diversions are required, as cost to reposition these will apply.
4. Any existing utility services that are not notified on the service record drawings herein but unearthed or detected during site remediation or set up would need to be diverted, or if redundant, removed from the site. Diverted services from the site would require new wayleaves to enable the utility companies to relocate their service.
5. The inclusion of energy efficient and renewable technologies could help to reduce the demand on the Electricity, Water and Gas services.
6. It should be noted that when the detailed applications are made to the service providers, there may also be costs involved to address any wayleave considerations.
7. Analysis of the record information identified that there are no live mains services running through or across the proposed development area.
8. There are a number of utilities located within the current curtilage of the site. These services run along East Street. Of most concern in particular is the SGN gas service. This buried pipe may possibly be within 0.5m of the proposed ground works for the new development. The easement and wayleaves (appendix II) identify that no mechanical excavation can be undertaken within this distance. We would recommend the exact location of the buried service is identified and design of the foundations and any excavation works to the East Street side of the new development factor in this potential constraint.

9. The drawings provided by the utility companies do not necessarily show all of their buried services and this is caveated in the responses received.
10. Further onsite investigations and surveys could show up additional services not shown on the drawings. These site investigations would also show a more accurate position of the services that are shown on the drawings.
11. A review of information received indicates the following:
 - There is a 75mm (3") Water distribution main running parallel to the site along East Street fed from a 9" Trunk main in Queens Road. The 9" trunk main continues down Queens Road.
 - There are also LP Gas service, and BT and Virgin communication ducts indicated to run in East Street adjacent to the development site, these services will most likely be the location of new POC (point of connections) for the new utility services required by the new development.
 - New water mains will be required for the site. This may need to be connected back to the Trunk Main in Queens Road.
 - Drainage from the site would need to be discharged in to the local foul sewer network by direct connection. The capacity of the existing sewers would need to be checked to determine their suitability. It is suggested that capacity may be an issue and new drainage infrastructure off site may be necessary.
 - The electrical supply to site will require a relocation and potential upgrade of the substation currently installed on site. It is anticipated that the SSE network shall almost certainly require reinforcement for the new development however the design and coordination of the relocation of the substation is being undertaken by another party from whom information and criteria for the new development should be coordinated.
 - The proposed heating solution for the development may necessitate increased electrical capacity requirement. This may in turn require more than one transformer for the development. If so separate locations for the 2 sub stations may be required.
 - The communications companies would need to be approached to determine whether they have the capability of supplying the additional required needs of the development.
 - Other utility supplies have apparatus in the area and care should be taken to avoid their equipment where possible.

12. Services located adjacent to the development site are owned by the following service companies:
 - Openreach (British Telecommunications).
 - Scottish and Southern Electricity.
 - Southern Gas Network (SGN)
 - Virgin Media
 - Vodafone
 - Reading Borough Council
 - Environment Agency
13. These services are located in the road infrastructure around the site. However, the site itself appears to be clear of any buried services. It is possible that the low-pressure gas line in East Street will need to be disturbed in order to connect to meet the new development requirements. Road closures and traffic controls may need to be implemented in order to reach services for alterations to these networks which can incur additional costs.
14. Detailed capacity investigations need to be carried out in order to ascertain the suitability of the existing networks in the area to ensure that it is capable of serving any new development. If the current infrastructure is not capable of serving the new development then network capacity will have to be increased to meet the new demand.
15. A number of service providers were approached as listed in the Appendix I, and responses were received to advise they were unaffected by the proposed development. Utility Assets Ltd have provided an automated response advising they will only reply if they have apparatus in the vicinity of the development site and if they don't reply within 7 working days then they do not have any apparatus in the area of works. This time frame has elapsed therefore we should assume no response received from this individual service provider.

1. INTRODUCTION

- 1.1 Envision have been commissioned to assess and advise on the utilities for the site on east street, Reading, RG1 4QJ on behalf of Studios Development (Reading Ltd). This report considers the existing buried utility services in the development site and curtilage. The report identifies any existing utility services that will be affected by the construction of a purpose-built student accommodation block (NCP3), comprising 135 bedrooms and associated facilities, on the site of the land at East Street, Reading.
- 1.2 The site, which measures 0.316 acres is effectively defined as the area of surface car parking to the south of New Century Place and fronting East Street in Reading. The car parking requirements are now redundant. The north east corner of the site is occupied by a small electricity substation which, subject to a new planning application, will be re-located to a new position adjacent to the site. The land in the vicinity generally falls from south to north, with a 1:22 gradient on East Street for the length of the site.



Fig 1 Site Location (image courtesy of GDL Architecture)

- 1.3 This report advises on the existing services; the information contained within this report has been provided by the utility suppliers. These utility details in the appendix are to be read in conjunction with this report.
- 1.4 Each utility must be approached to obtain quotations for disconnections, diversions and new connections as required.

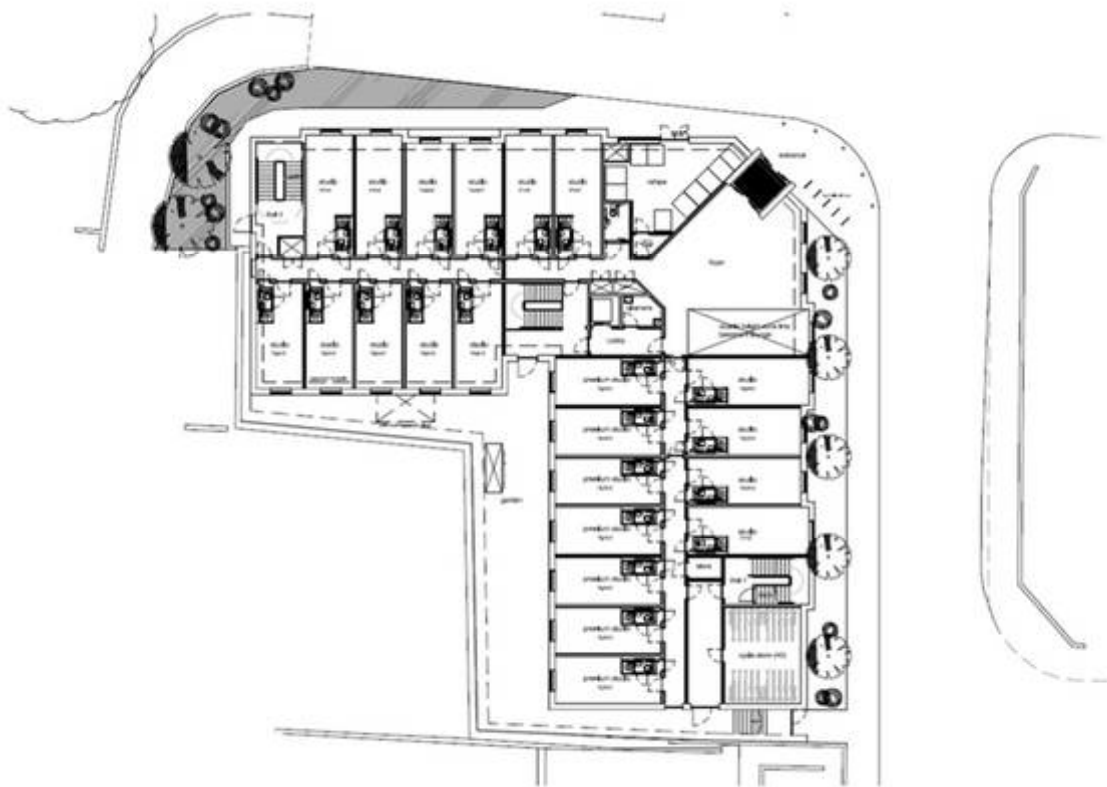


Fig 2 New developed area (Proposed – courtesy of GDL Architecture) Illustrative section of development only

Sources of information

- 1.5 For the purposes of this report we have relied upon information from the sources listed in Appendix I.
- 1.6 Other service suppliers were contacted. Confirmation that no services located within the area identified and has been received; these are also listed in Appendix I.

2. Electricity Services

Distribution Network Operator (DNO)

- 2.1 The DNO in this area is Scottish & Southern Electricity (SSE)

Summary

- 2.2 Information has been obtained from Scottish & Southern and is reproduced in the appendices. These show that there are services running around the development area as outlined on a grid drawing likely to be affected by the development.
- 2.3 The north east corner of the site is occupied by a small electricity substation which, subject to a new planning application, will be re-located to a new position adjacent to the site. The proposed development is likely to be affected by issue drawings as follows –
- Scottish & Southern Site Survey Information Drawing 1 – HV Main Record/ Grid Reference SU71837318
 - Scottish & Southern Site Survey Information Drawing 2 – LV Main Record/ Grid Reference SU71837318
 - Other areas are also being included in the comments were considered relevant.
- 2.4 It should be noted the issued information drawing quality is caveated by SSE and all cables location and depths and works to relocate should be verified on site.

General Comments

- 2.5 Prior to any work commencing on site all existing cabling and network infrastructure should be confirmed with the provider.
- 2.6 Where this is not known or possible then a budget for hand digging trial holes etc. should be set aside.
- 2.7 A full mapping of all services should be undertaken by a reputable service provider, together with a full and detailed survey of existing site services and any possible existing items which may affect the Project (these could be soil conditions, contamination, UXB etc.).
- 2.8 The Project Design Risk Specialist should identify any such risks for further consideration going forwards.
- 2.9 Applications for road closures, traffic light work and temporary pedestrian walkways will need to be agreed and notified to the Local Authority.

- 2.10 Temporary cessation of existing utility services to local business and residents should also be scheduled in and identified, with any possible mitigation works considered where possible.

HV | LV Supplies

- 2.11 The records indicate that the proposed development is likely to be affected by issues as shown on the following record drawings

- Scottish & Southern Site Survey Information Drawing 1 – HV Main Record/ Grid Reference SU71837318
- Scottish & Southern Site Survey Information Drawing 2 – LV Main Record/ Grid Reference SU71837318

- 2.12 There are other areas included in the comments which were considered relevant.

- 2.13 From Figure 3, the issued drawing below, the cable runs clearly identify an existing road duct crossing points for the existing HV main serving the site TX (Transformer) labelled as East Street Sub Station.

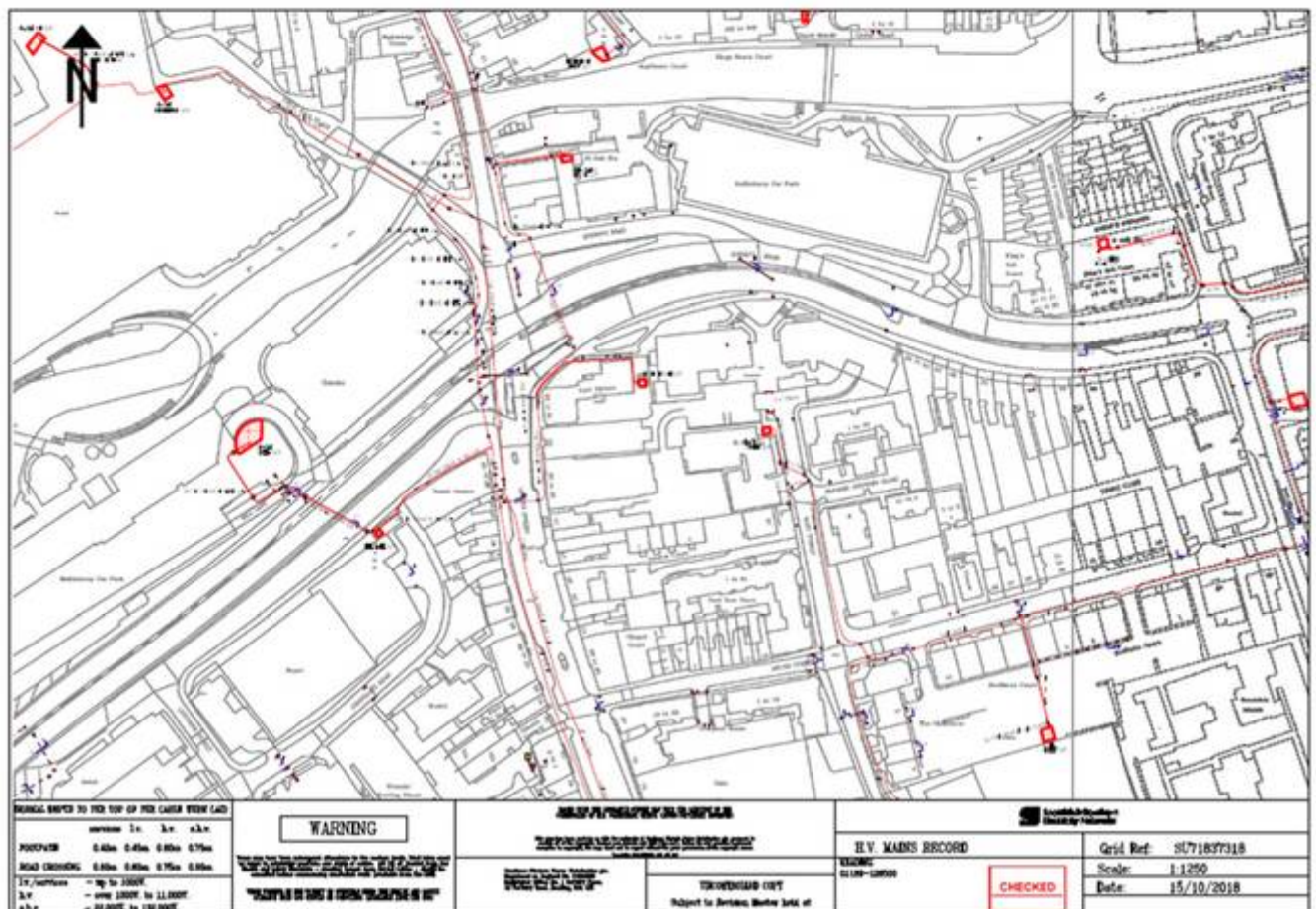


Fig 3- Scottish & Southern Site Survey Information Drawing 1 – HV Main Record/ Grid Reference SU71837318

- 2.14 The duct crossing ends appear from the as installed drawing to be on the edge the curtilage of the existing East Street access road, from the corner of Bourne-Stevens Close, but this should be verified on site with SSE.

- 2.15 The existing cable will be buried in the edge of the curtilage and the cable is identified as an 11Kv 150mm 3core Aluminium XLPE cable. This cable in normal circumstances, when being installed would be covered with marker tiles and (usually) sand close to the cable.

- 2.16 Any work identified on the eastern site curtilage (such as moving the sub-station or forming any new entrances) is likely to impact the cable installation or movement, as it is likely to run or is installed along around 40-50 metres of the East Street side. The position of this cable in relation to the works shall need to be confirmed before works commence to ensure no damage to the HV or LV electrical cabling serving the existing dwellings and commercial properties.

- 2.17 Hand digging will almost certainly be the preferred option local to the cable areas in order to expose these cables as required (to move or alter them). Hand dig is obviously more expensive than machine and should be factored into cost estimates.

- 2.18 If the new HV sub main runs across or conflicts with any proposed new development entrance locations, it should of course be lowered to account for the crossings etc. The final details of any such cable runs and network alterations to be by the appointed Engineer in consultation with SSE.

- 2.19 The Client`s representative should confirm with SSE or their preferred supplier to include a cost for this work at the earliest opportunity for budget forecast.

- 2.20 The existing East Street sub-station which (subject to planning approval) is proposed to be moved from its existing location. Final location of new sub-station is to be confirmed, but it would be anticipated to remain within the site curtilage.

- 2.21 The existing TX (sub-station) size is not clearly identified on the record drawings however as a guide any sub-station generally has a (minimum) footprint of 4x4metres square.

- 2.22 Presently the existing East Street sub-station supplies local domestic and commercial buildings etc in the vicinity of the site.

- 2.23 To move the sub-station is a considerable element of work and will result in local disruption to the electricity supply. It shall be costly to the Project. It is assumed that the Client has independently commissioned the works associated with the relocation (and upgrade) of the sub-station to a preferred final location. This report does not cover the works associated with relocation of the sub-station.

- 2.24 There is a substation (TX) located adjacent to the development site, but outside of the development boundary. The record drawings indicate that this supplies the local Government building only (Wessex House). Often, Government buildings are ring fenced and it is unlikely that this TX could be utilised by the Client if additional supplies capacity is requested for the development.
- 2.25 This does mean that any new or upgraded supply will potentially have to come from outside this grid referenced drawing.
- 2.26 The existing site being a Car Park appears to have little or no existing electrical LV connection. There may be some existing small supply for lighting or parking meters, but it is not anticipated that any existing supply would be sufficient to power the new building. The new development shall require a new dedicated and sub-metered electrical supply from SSE (the DNO for the area) which may affect the existing (or new) transformer (TX) capacity and size requirements.
- 2.27 As a guide we have estimated the additional supply at 280kVA (400A TP&N), this should be verified by the design engineer appointed for the new building development project.
- 2.28 This additional load should be applied for to SSE (or an IDNO) at the earliest opportunity. The load capacity of the existing sub-station to be moved is not on the drawings. The client shall be required to confirm the anticipated requirements for the new development and an associated electrical provision allowed for the development summed to a maximum to be provided from the new sub-station/transformer on site.
- 2.29 It may be possible to add this additional load to the existing TX, or if the existing is to be replaced when it is relocated then this additional load should be included in any calculations and applications to SSE or IDNO.
- 2.30 Any renewable energy to be installed locally (such as PV cells on the new building) shall need to be agreed with the IDNO/SSE and the necessary protective devices provided as appropriate to satisfy any requirements and standards.
- 2.31 The condition of the existing HV cabling requires to be considered. These cables may require upstream reinforcement, but this would need to be confirmed by SSE, and would be clarified when the application to relocate is made. Obviously if reinforcement of the existing network is required it can be very costly, with labour/trenching potentially also impacting local business and access.
- 2.32 Access and wayleaves to the sites shall require consideration by the Client and regulations are in place by both Scottish & Southern Electricity and Reading Borough Council which will need to be followed by the client's representative.

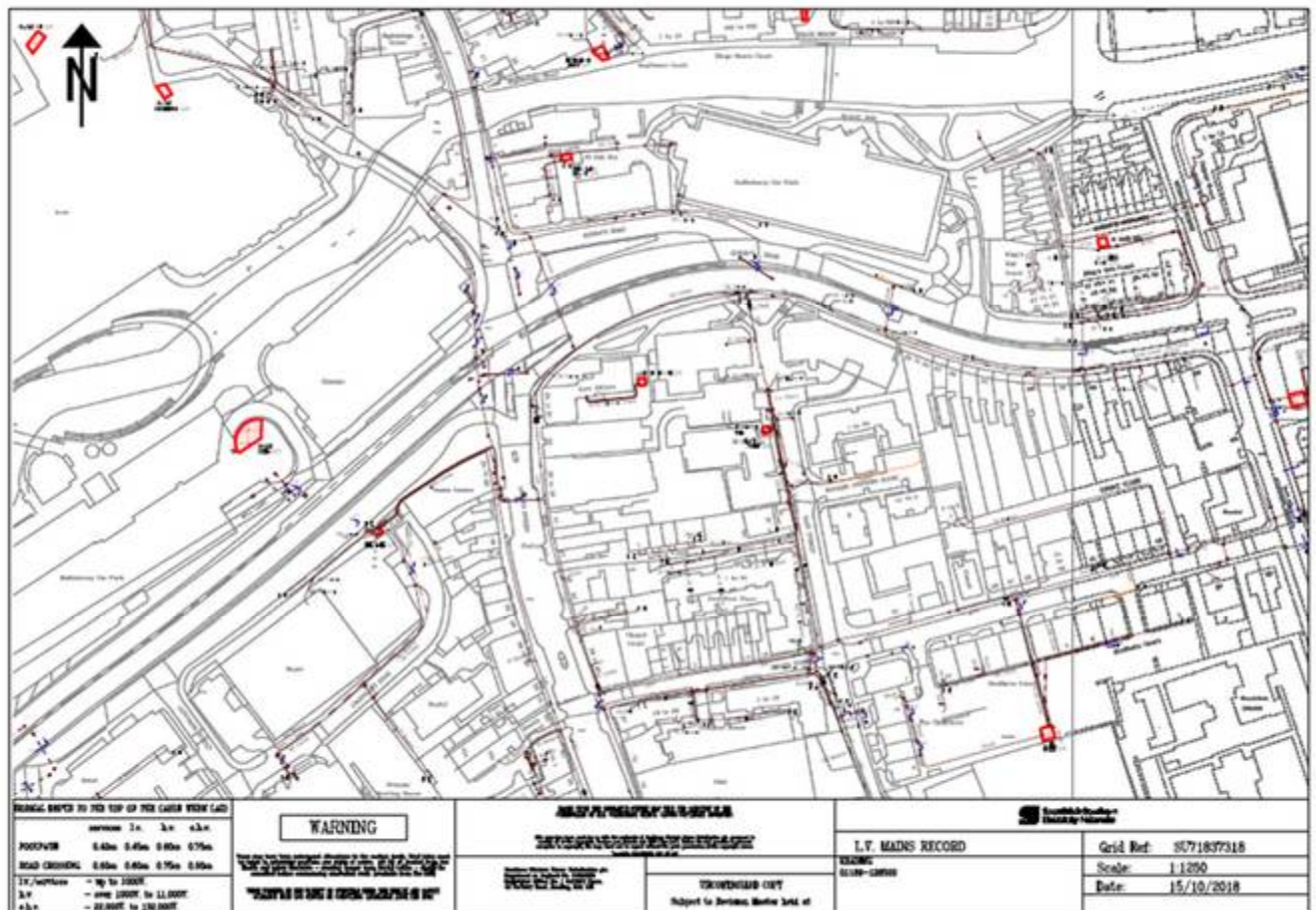


Fig 4 – Scottish & Southern Site Survey Information Drawing 2 – LV Main Record/ Grid Reference SU71837318

- 2.33 Fig 4 indicates the local LV supplies which run from the East Street sub-station. These cables are low voltage and serve local domestic and commercial buildings.
- 2.34 The management and any changeover work associated with potential new LV supplies to existing commercial properties and dwellings would need to be carefully coordinated. However, this should be confirmed with SSE who will confirm and approve final proposals.
- 2.35 When the new TX position has been agreed the wayleave to the new location for the HV and LV cabling shall need to be confirmed with SSE. This may impact on the existing cables running along the East Street side which shall likely be subject to extensive trenching and dig.
- 2.36 The existing SSE LV indicated cables may be affected by any new proposed entrances to the development along the East Street curtilage. Along this side there is an abundance of LV cables running through the site. Any building works on this edge shall affect the existing cabling.
- 2.37 In the main area to be developed, to the left-hand side of the East Street curtilage and wayleave area there are no LV cables indicated and although care should always be taken

when excavating, there should be no adverse impact from existing HV/LV electrical supplies running through the area on the proposed building development.

Proposed Electrical Mains

- 2.38 Prior to work commencing on site the Developer should consult the Scottish & Southern fact sheet which contains important information regarding the use of Scottish & Southern plans and working around their equipment. Safety around our equipment is a priority and the appointed Contractor shall have completed all workplace risk assessments before beginning any works on the site.
- 2.39 A full and detailed application for the new connections to site should be confirmed to Scottish & Southern at the earliest opportunity for the whole development so any enabling works can be scheduled in adequate time for the Client.
- 2.40 Access and wayleaves to and around the site shall require consideration by the Client and firm regulations are in place by Scottish & Southern and Reading Borough Council to be complied with.
- 2.41 Any temporary supplies and estimated load should also be confirmed along with the duration required for the Project (site huts, site supplies etc) and further to this any additional items such as pumps, telecommunication connections etc, should be investigated and measures as required implemented before work commences on site. If the new connections are not completed prior to work commencing on site generators may be considered during the interim.
- 2.42 Some providers may require long notification periods for any such closures and these shall require close coordination with Scottish & Southern as well as the end users and Client.
- 2.43 There will almost certainly be disruption to local users and residents as the connection is unlikely to be able to be made by Hot working (the supply locally will need to be shut down) to connect to the existing HV connections. The shutdown shall require notification to local users and this should be done by Scottish & Southern nearer the time. As above if a new TX/LV provision made in addition to the existing it may be possible to migrate cabling over a phased period (TBC).
- 2.44 Commercial interested parties shall need to be scheduled for such closures, and although this shall be scheduled by Scottish & Southern, the Client should be aware that closures agreements can be subject to lengthy timespans before they are programmed in (as all parties have to be notified), this can affect work schedules on site. Any such items outside the curtilage which may be affected should be identified and considered when scheduling the works.

- 2.45 With regards to the new and proposed connections/ transformers the infrastructure shall require design, installation and acceptance by Scottish & Southern prior to the network being extended into site.
- 2.46 The client should note where the new road works are to be completed and any grading of existing ground is to be undertaken, any existing or new services shall require installation to the finished level. There are few locations where this is likely to occur on existing cabling, however this will need to be allowed for with new runs to be installed by Scottish & Southern or the Clients appointed IDNO. See fig 5 for new cable depth requirements to be considered which are likely to run alongside the existing and new service roads

Voltage	Good agricultural land	Footpaths, verges, uncultivated land, pasture agreed to be permanent and land not open to vehicular traffic	
	All situations	Rural	Urban
132kV	910 mm	900 mm	900 mm
66kV	910 mm	750 mm	750 mm
33kV	910 mm	750 mm	750 mm
20kV	910 mm	600 mm	600 mm
11kV	910 mm	450 mm	450 mm
LV & Services	910 mm	450 mm	450 mm

Fig 5 Cable Depth requirements

- 2.47 Works can be completed to an IDNO provider if the Client wishes to use alternative installers to Scottish & Southern to undertake any new connective works, and that all connections are proposals are agreed with Scottish & Southern prior to appointment The Client should ensure any non-Scottish & Southern persons operating or working near or on a HV System comply and are conversant with the Safety Rules for High Voltage Installations, or suitable approved equivalent i.e. Area Board Safety Rules.
- 2.48 The Client shall ensure any IDNO Electrical Installer (or Specialist - if used) appoints fully trained 'Competent Persons' to supervise specified HV works and to receive 'permits to work' from Scottish & Southern.
- 2.49 It is recommended that a quotation of work for the whole scheme together with the anticipated schedule / requirements should be sought from Scottish & Southern (or an approved IDNO) for budgets and program scheduling of the Project.
- 2.50 Any protective /diversionary works can be prepared by Scottish & Southern, Reading Depot, Theale, Reading, RG7 4AS, telephone no. 01189 126516.

Alternatively;

A full submission for the new development should be made to:

- 2.51 Easement for Scottish & Southern property is shown in Appendix II.

Reading Borough Council – Street Lighting

- 2.52 Reading Borough Council have forwarded a set of drawings/sketches and information unfortunately, much of this information does not appear to reflect the requested information or records from within the Clients site curtilage.
- 2.53 **The issued drawings and information provided do not appear to be correct and should not be used as reference. Reading Borough Council have been contacted and requested to provide revised record information covering assets in the site boundary. This will be issued as an appendix to this report when the information becomes available.**
- 2.54 Reading Borough Council are very likely to have a few smaller cables and street lights running near to the site which may affect works and necessitate both temporary diversions (and a notification to Highways/ footpaths) for temporary diversion.
- 2.55 It should be noted that there are 2 no street lighting Lamp posts on the boundary of the site running along East Street, serving pavement mounted LPs, located adjacent to the existing substation and at the car park entrance. It is likely the council will have LV cables running on the new development side of East Street.
- 2.56 Reading Borough Council shall need to be notified and it may be possible, at cost to move the columns either on a temporary basis (to the other side of the road) or to their final locations depending on the status of the Project. Cables shall need to be diverted/jointed etc.
- 2.57 Potentially the client may need to provide local temporary footpaths and lighting during the works. These should be identified as early as possible and confirmed/programmed in with RBC

Fig 6 –Reading Borough Council record information TBC street lights

- 2.58 New local signage and possibly streetlighting approaching the new development, potentially bollards on the splitter islands, the service roads and pathways etc may need to be considered in the final layout drawings & design. Additionally, there may be an existing feeder pillar for the Street lighting located somewhere close to the site or on the site which is not clearly identified.
- 2.59 Any new network, connections and equipment should be installed in consultation with RBC (Reading Borough Council) and SSE (who could provide electrical connections).
- 2.60 The works on East Street shall affect local traffic and RBC shall need to be advised/ consulted going forwards for road closures/ diversions etc.
- 2.61 All local diversions and temporary signage would of course have to be agreed with RBC prior to commencement of work on site.

Car Park lighting columns

- 2.62 There are at least 5 car park lighting columns and there may be some local small existing electrical services on site (TBC) such as Car Parking meters and local street lighting feeder pillars or similar within the Clients curtilage.
- 2.63 No information has been provided to confirm the location and cables routes for either of the above but it is strongly recommended that a site survey is undertaken to establish any additional items not reflected in this report before finalising any budget forecasts or commencing works etc

3. Communications

- 3.1 There are three communications providers with apparatus located near to or on the development area. These are: BT Openreach and Virgin Media and Vodafone.

Summary

- 3.2 Communication systems to the site will be required. BT is the main communications provider within the area capable of providing telephone and broadband connections through its copper cable system.

BT Openreach

- 3.3 The BT Network runs near to the curtilage of the proposed new development on the East Street side.
- 3.4 There is a BT manhole along the East Street flank which shall need to be considered. If there are any road entrances, to the new development then it may be necessary to move the manhole which would be costly and should be considered in any final layout plans.
- 3.5 Apart from the network cables running through the curtilage on the East Street side there appears to be no other items affecting excavations in the site area. There are Box points at the top and bottom of the area, but which fall outside the curtilage of the site. There are 3 new proposed BT Boxes planned to come from the existing box at the South Street end of the site. This should not affect the works.
- 3.6 On the right-hand side of East Street there are 2 no inferred boxes by Bourne Stevens Close. The network cable for these new boxes is indicated to run from the manhole in the Clients curtilage and this should be considered as per the previous notes.
- 3.7 On the opposite side near Wessex House there is also a box/ DP but this again falls outside the Clients curtilage.
- 3.8 A new dedicated connection from the nearest suitable PCP or cabinet/s*2 for the site would most likely be installed most likely the existing PCP at the South Street end of the site. There is a ducted route indicated on the drawing to the area and manhole running through the site curtilage. This could be extended to the new building as appropriate. There is a further planned PCP location along South Street which could be utilised if the existing PCP is full. This may impact program however and the connection application should be submitted at the earliest opportunity to minimise risk.
- 3.9 It is anticipated that the new local dedicated network connection would follow this route.

*1 DP - Distribution Point

This is the point near to a premises where the main cable from a PCP is split in order to provide service at one or more localised premises. A DP can be at the top of a telegraph pole (Overhead DP), under a walkway (Underground DP) or on the side of a building.

*2 PCP - Primary Cross Connection Point

Part of the line plant, in the form of a metal cabinet at the roadside, that enables flexibility between the main cables from the exchange and the smaller cables to individual streets or premises, also known as a Cabinet, or Cab" "Primary Cross-connection Point - this is the local street cabinet in which cables extending out to local distribution points are aggregated and connected to larger copper and fibre optic cables to move the voice and data signals to and from the local exchange. The number of connections managed in a PCP depends on the number of end user premises in an area, but is usually several hundred (200-400) lines.

"Primary Connection Point" (grey or green Box)- Part of the line plant, in the form of a metal cabinet at the roadside, that enables flexibility between the main cables from the exchange and the smaller cables to individual streets or premises, also known as a Cabinet, or Cab"

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 06:00 to 17:00)
www.openreach.co.uk/cbyd

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KEY TO BT SYMBOLS		Change Of State	+	Hatchings
Planned	Live	Split Coupling	X	Built
PCP		Duct Tee	+	Planned
Pole		Building		Inferred
Box		Block	(K)	Duct
Manhole		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.		
Cabinet				
Pending Add	In Place	Pending Remove	Not in Use	
Power Cable			N/A	
Power Duct				

BT Ref : TAH01142U
Map Reference : (centre) SU7183873184
Easting/Northing : (centre) 471838,173184
Issued : 15/10/2018 13:14:30

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: nnho@openreach.co.uk

Fig 7 – BT issued information local to the new Development



Fig 8 Area Local to East Street Student development (Area enlarged)

- 3.10 Temporary phone lines for site huts etc. should be confirmed to BT. It shall be necessary to extend the Network before this can happen. This may accelerate the requirement for a network connected service to the development (e.g H&S – mobile phone not being acceptable) and the procurement of appropriate lines should be prioritised early on in the Project program

- 3.11 A detailed quotation of all required connections and associated work together with an anticipated schedule and requirements should be sought from BT for budget and program scheduling for the Project. In addition, commissioning phone lines, security etc should be considered at this point for later use (such as site security, lifts etc).

- 3.12 The new site should be registered when it is confirmed the works are to proceed with BT Open reach at the following address <https://www.ournetwork.openreach.co.uk/property-developers/site-registration.aspx>

- 3.13 This shall enable the Client to confirm specific requirements to the site and provide a suitable and agreed program, costs and site-specific requirements for inclusion in the new development.

- 3.14 The client should note where the new road works are to be completed and any grading of existing ground is to be undertaken, any existing or new services shall require installation to the finished level. There are few locations where this is likely to occur on existing cabling, however this will need to be allowed for with new runs (in BT approved duct) to be installed

by Open Reach or approved. See fig 9 for new cable depth requirements to be considered which are likely to run alongside the existing and new service roads.

	Good agricultural land	Footpaths, verges, uncultivated land, pasture agreed to be permanent and land not open to vehicular traffic	
	All situations	Rural	Urban
Minimum	350 mm	350 mm	350 mm
Deep ploughing	As agreed	As agreed	As agreed

Fig 9 BT duct requirements

- 3.15 The new building shall require new ducts to be installed – see appendix II for further information

Virgin Media

- 3.16 The existing Virgin local network should not impact the proposed and outlined site curtilage
- 3.17 Virgin do have Network cables connections in the local dwellings and commercial properties nearby and around the new development however the cabling drawing issued by Virgin as Fig 10 below would confirm that there should be no impact to the Project.
- 3.18 It is clear the Virgin Network cabling runs along East Street on the opposite site to the new development.
- 3.19 Virgin do comment on their issue document that “You will be aware that you have a duty to ensure that no damage results to this equipment as a result of your proposed works. Please note that this apparatus may contain Fibre Optic, Coaxial and/or 240v Power Cables and as such, special care must be taken when excavating this area”. This should not be an issue as the cabling does not run through the curtilage of the site.
- 3.20 If a connection is required to the new development, there appears to be a cabinet on the opposite side of the road to the new development between South Street and Bourne- Stevens Close (behind No2). A duct would have to be trenched from the local network adjacent and it is probable that this shall necessitate a partial road closure to complete. There would be an additional cost for this as well as traffic management to consider, however an application should be made, and a cost/quote confirmed by Virgin.
- 3.21 However, the Network is on the opposite side of the road and any new ducts should be carefully coordinated with all local utility providers to ensure that there is no detrimental impact to the existing networks. Again, and similarly to BT a new ducted connection shall need

to be made from the local main Virgin distribution point for a new local infrastructure/network into the new development.

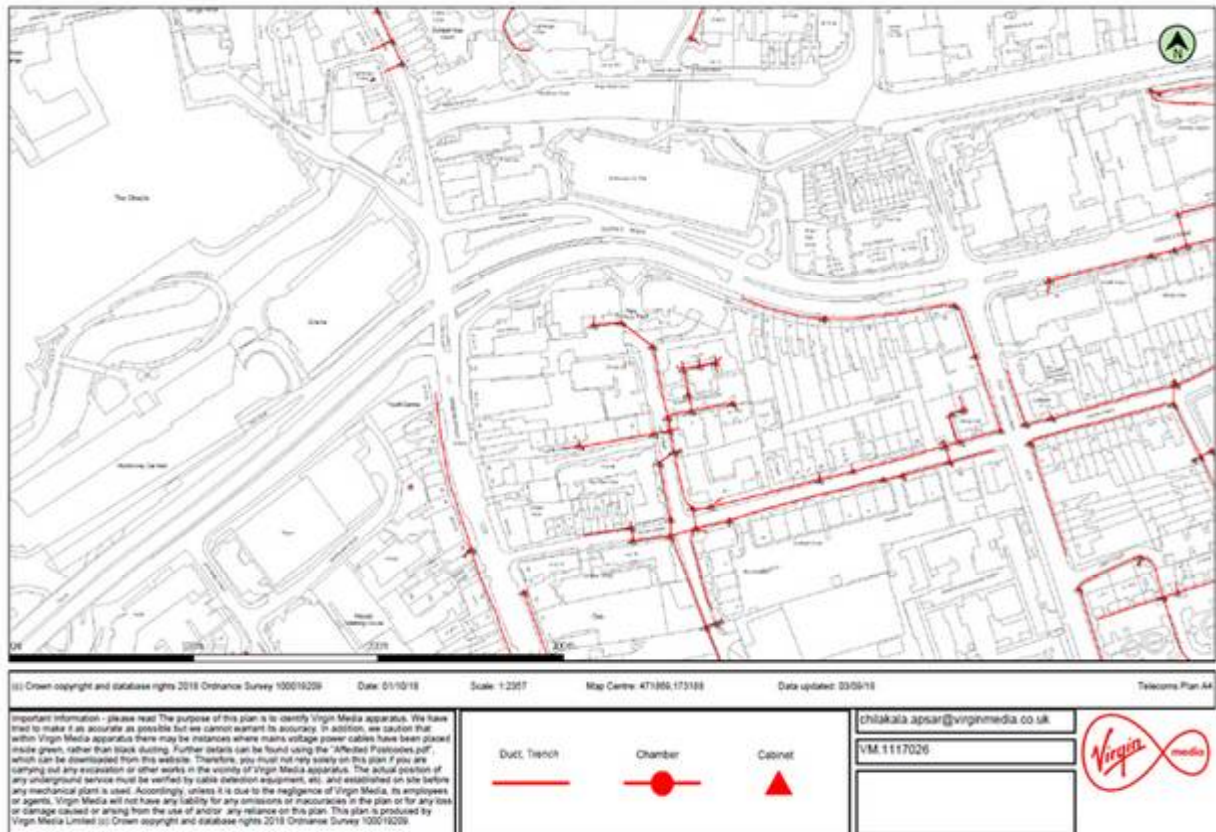


Fig 10 - Virgin Network local to site (in RED)

3.22 Ducts and connections, should they be required or extended from the local Network may be obtained from Virgin Media as below:

Virgin Media
Field Services
Units 1-12
Broad Lane
Mayfair Business Park
Bradford
Yorkshire
BD4 8PW
Tel: 0870 888 3116 Opt 2
Fax: 01268 468557

3.23 Any diversions that may be required should be made to Diversionary Works, Virgin Media, 1 Dove Wynd, Strathclyde Business Park Bellshill ML4 3AL. Or if you prefer to talk, please call the Diversionary Team on: 0800 408 0088 Option 1

3.24 Further information on ducts and cables is identified in Appendix II.

Vodafone

3.25 There is a Vodafone network opposite of the new development on East Street. There is a local underground Utility box at the top of East Street from which it may be possible to facilitate any connections should they be required.

3.26 The Network is on the opposite side of the road and any new ducts should be carefully coordinated with all local utility providers to ensure that there is no detrimental impact to the existing networks. Again, and similarly to BT/Virgin a new ducted connection shall need to be made from the local main Vodaphone distribution point for a new local infrastructure/network into the new development.

3.27 The duct would have to be trenched from the local network adjacent and it is probable that this shall necessitate a partial road closure to complete. There would be an additional cost for this as well as traffic management to consider, however an application should be made, and a cost/quote confirmed by Vodaphone.

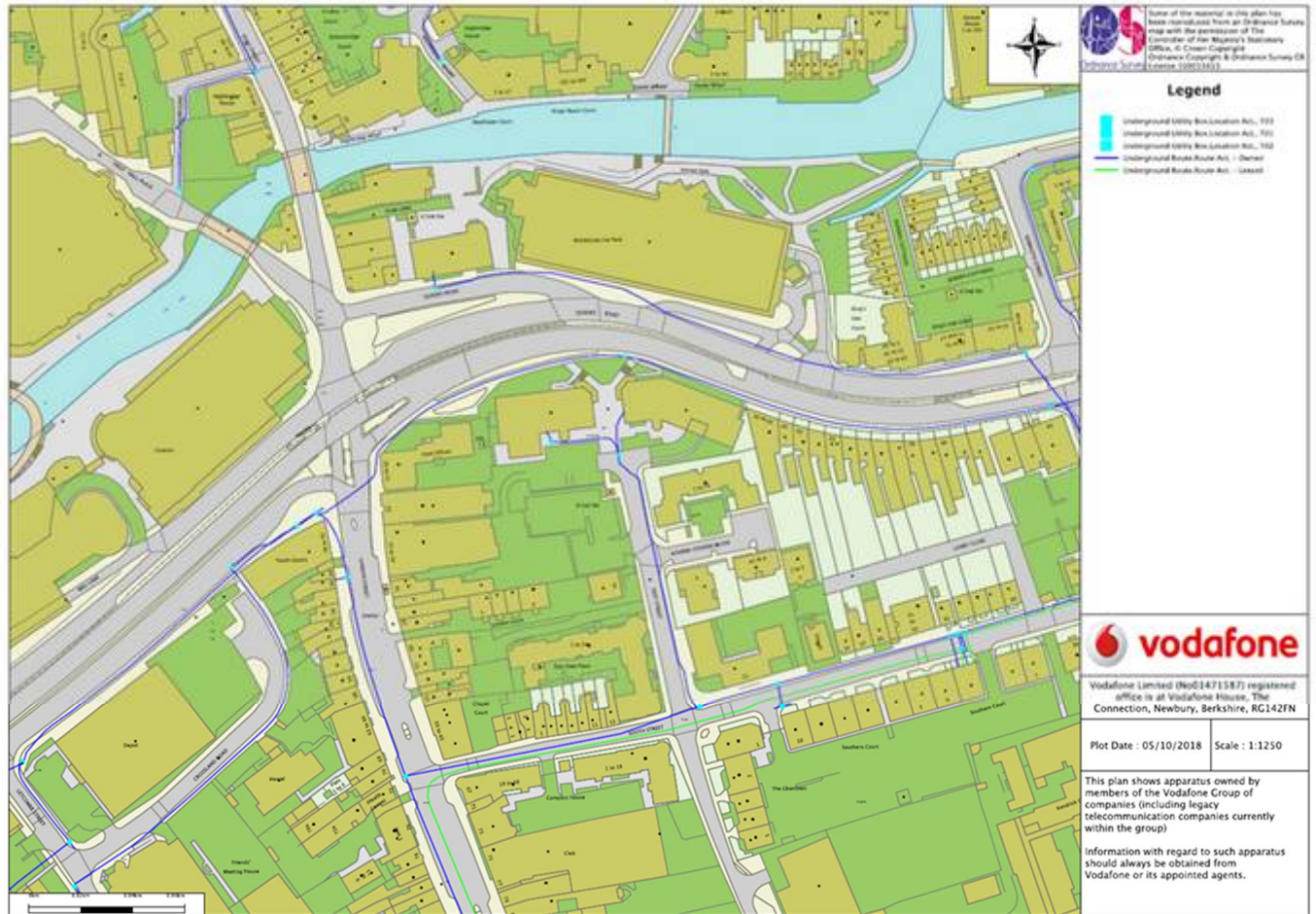


Fig11 Vodafone Network cable drawing

Vodafone confirm the following in their communications

- 3.28 Where apparatus is affected and requires diversion, please send all the scheme related proposals that affects the Vodafone Network to c3requests@vodafone.com with a request for a 'C3 Budget Estimate'. Please ensure you include a plan showing proposed works. (A location plan is insufficient for Vodafone to provide a costing).
- 3.29 These estimates will be provided by Vodafone directly, normally within 20 working days from receipt of your request. Please include proof of this C2 response when requesting a C3 (using the 'forward' option). Diversionary works may be necessary if the existing line of the highway/railway or its levels are altered.
- 3.30 Where the Other Parties or Contractors works or the movement of plant or equipment may endanger Vodafone apparatus, the Other Party or Contractor shall give the Vodafone at least 7 working days' notice in writing of the intended date to commence operations.

- 3.31 No excavation should be made without first consulting the relevant Vodafone apparatus layout drawings, which will be made available from the Vodafone agent Atkins Global on request and allowing 28 working days for processing the relevant drawings. However, should this not be possible, direct contact should be made to the Atkins Global Plant Enquiries Team as soon as possible to assess the situation.
- 3.32 When excavating, moving or backfilling (including use of Foamed Concrete for Reinstatements – FCR) around Vodafone apparatus, Vodafone shall be given adequate prior written notice of the Other Parties or Contractors intentions, in order that the works may be adequately supervised. Such notice shall not be less than 3 working days.
- 3.33 Vodafone should be contacted and notified of the new works and a quote sought for the movement and possible disruption to the cable and their network.
Contact Atkins Global, PO Box 290, 500 Aztec West, Almondsbury, Bristol, BS32 4RZ.
T: 01454 662881
F: 01454 663330
Mail - osm.enquiries@atkinsglobal.com

4. Water Services

Network Supplier

- 4.1. The network supplier in this area is Thames Water.
- 4.2. The information obtained from the utility company is shown on map records in Appendix III.

Summary

- 4.3. Thames water have identified that they have no trunk mains or distribution mains services within the curtilage of the proposed development. They have identified distribution mains that run along East Street, London Street, Queen's Road and South Street. The 3-inch cast iron mains cold water service that runs along East Street is the closest service to the proposed site boundary.
- 4.4. It is recommended that the new water connections for the development site are sourced from this service if capacity permits. Further investigation and capacity enquiries with Thames Water will be required to determine the network current supply and capacity within the local water mains.
- 4.5. All sub mains in the area of the development are connected back to the 9" trunk main at the junction of London Street and Queens Road to the North of the site.

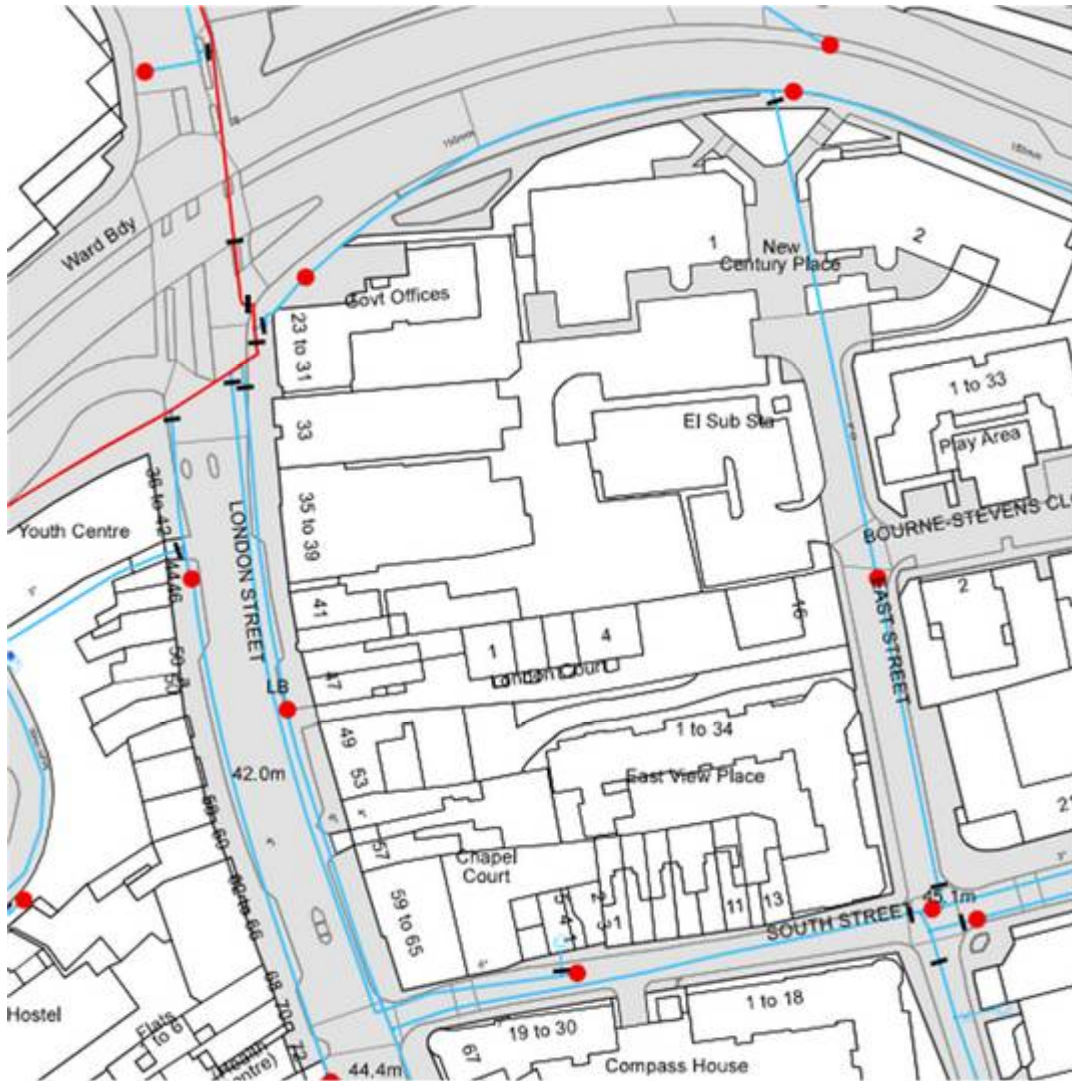


Fig 12 - Thames Water records for the development site.

- 4.6. The record shows the closest trunk main to the proposed site is a 9-inch services that runs from the end of London street and continues through Duke Street.
- 4.7. It is anticipated that the new water connections shall ultimately connect to the 9-inch Trunk main if any upgrade to the infrastructure is required.
- 4.8. There are no existing services identified which will need to be located or avoided when building any new development on the site other than the three customer service pipes indicated. Along with the aforementioned distribution mains on east street, the record shows a 3" distribution main that run along London Street and South street, whilst a 6-inch and 4inch service run along London Street. These services are not within the curtilage of the proposed development,

- 4.9. It should be noted that not all distribution mains and trunk mains materials have been identified, further investigation into the construction material of the services pipes will be required.
- 4.10. The records do not identify the mains water supply system pressure and capacity for extension to accommodate the proposed development. With this consideration the developer will need to liaise with Thames Water to find out their ability to service the new development and to identify any costs for increasing capacity in the main if required. It would also be recommended that the mains pressure is measured locally to the site to ensure sufficient pressure is available or to confirm the requirement for boosted water system within the new building.
- 4.11. There are six fire hydrants located on the main distribution supplies highlighted above, two situated on Queens Road and South Street and a single hydrant located on London Street and East Street.
- 4.12. Attention should be drawn to the easements section in Appendix II. This gives Thames Water requirements for digging near their equipment.
- 4.13. A detailed loading assessment should be carried out during the detail design stage, to establish the full water capacity requirements including capacity needed for all hydrant systems. Liaising with Thames Water will then determine the suitability of the existing water supply systems and whether any reinforcement is required.
- 4.14. Questions regarding new water connections, budget estimates, diversions, building over issues or any other questions regarding operational issues should be made to Thames Water service desk. Which can be contacted by writing to the address on the following page.

Developer Services (Clean Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB
Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

5. Drainage

5.1 The drainage network in the area is adopted by Thames Water

Summary

5.2 Thames water have identified that they have no foul or surface water drains in the area of the proposed site. The Records indicate that there are both foul and surface water drains in the surrounding area of the proposed site, these run along East Street, London Street, Queen's Road and South Street. London street has a foul and surface water services that tees off into units 35-39 located adjacent & to the rear of the site, the ideal location for the new drainage connections will be made onto the existing 450mm and 225mm foul and surface water services retrospectively subject to planning and run off calculations produced by the appointed civil engineer.

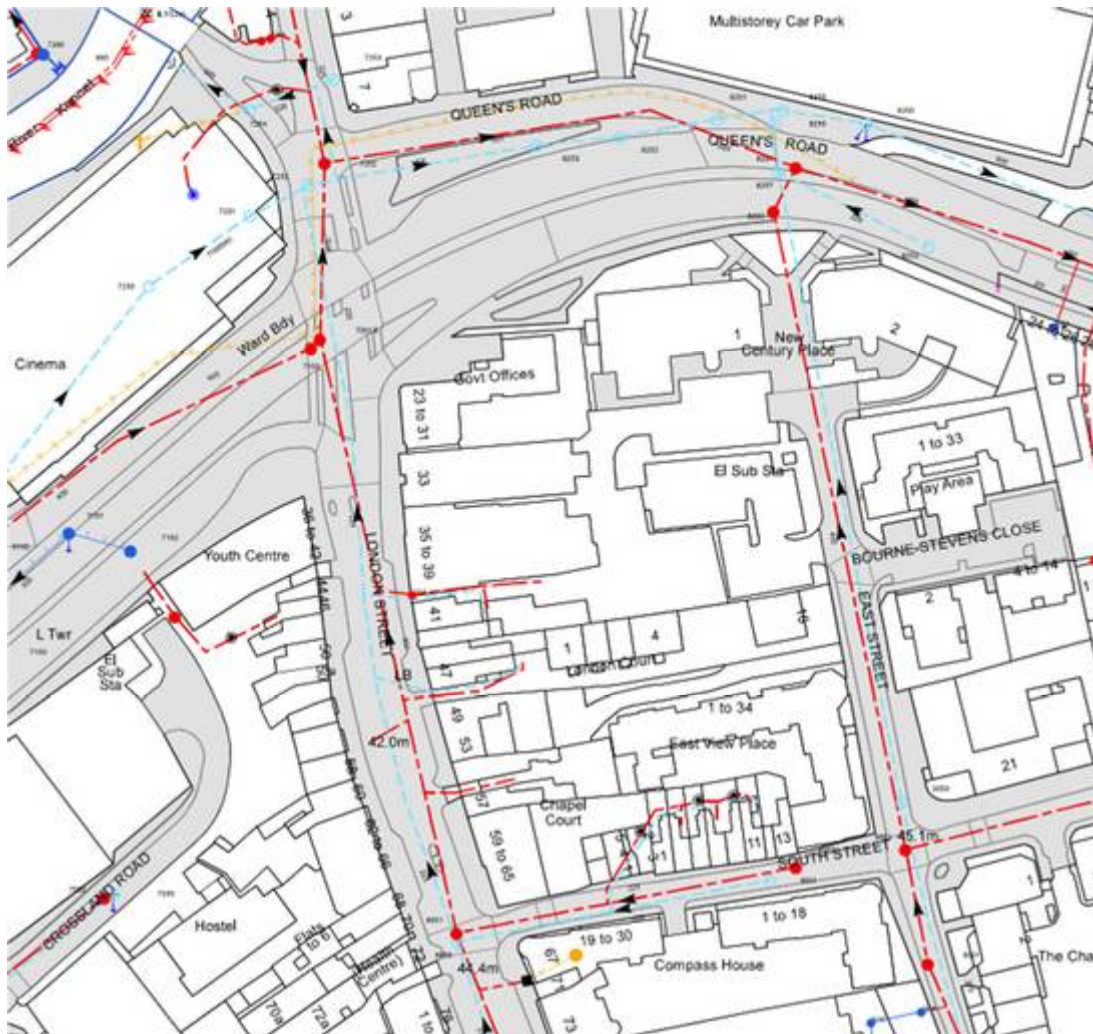


Fig 13 - Thames water sewer records for the development site.

- 5.3 The new development on site will need to discharge in to the existing foul and storm water drainage off site.
- 5.4 Planning requirements for surface water attenuation and measures to reduce run off will need to be considered by the development team and the civil engineer to inform the application for new drainage requirements.
- 5.5 A detailed loading assessment should be carried out during the detail design stage, to establish the full drainage requirements and the current capacity of the existing services. Liaising with Thames Water will then determine the suitability of the existing drainage systems and whether any reinforcement is required.
- 5.6 Any questions regarding new drainage connections, budget estimates, diversions, building over issues or any other questions regarding operational issues should be made to Thames Water service desk. Which can be contacted by writing to the address on the bottom of the page.

Developer Services (Waste Water)
 Thames Water
 Clearwater Court
 Vastern Road
 Reading
 RG1 8DB
 Tel: 0800 009 3921
 Email: developer.services@thameswater.co.uk

6. Gas Services

- 6.1 The main network transporter in the area SGN (Southern Gas Network). SGN own a 180mm Low Pressure gas service that runs along Duke Street and tees off into a 125mm low pressure service. SGN's Record drawings highlight that there is no medium, intermediate or high-pressure mains in the area, see summary detail below Fig 14.
- 6.2 In addition to the services outlined above the 180mm service continues to run along London Street. The low pressure main then reduces to a 90mm and a sub 63mm supply, which runs and is buried to the rear of the proposed site boundary in London Court.
- 6.3 The 125mm low pressure gas main on east street will be the preferred point of connection for new gas supply for the proposed scheme subject to confirmation of capacity from SGN.

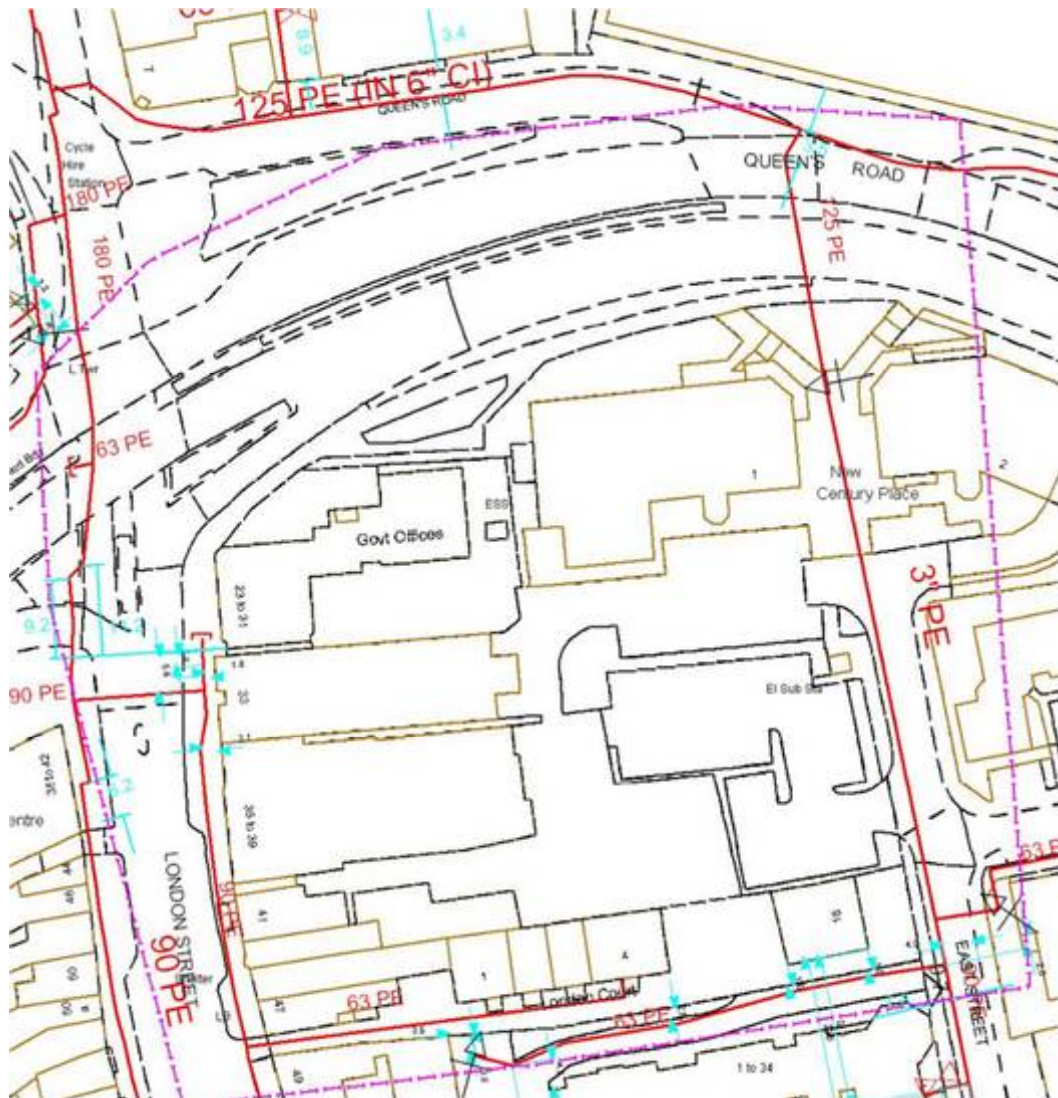


Fig 14 – SGN Gas record detail.

- 6.4 The low-pressure gas main that runs along east street does not infringe the site boundary but it appears to run very close to the curtilage, in this instance it is recommended that precaution is taken as ground works in this area may have an effect on the network operators. If this service is within 0.5m of any necessary groundworks the use of mechanical excavators is restricted by SGN easement regulations (Appendix II).
- 6.5 Spare capacity of the 125mm low [pressure gas main is unknown and therefore it is recommended that a detailed loading assessment should be carried out during the detail design stage. This will establish the pressure and flow rate requirements and the current capacity of the existing services. Liaising with SGN will then determine the suitability of the existing Gas service and whether any reinforcement is required
- 6.6 The information obtained from the utility company is shown on map records in Appendix III.

7. Environment Agency

- 7.1 The Environment Agency is classed as a statutory undertaker for certain purposes. They have advised that they do not generally have plant equipment or pipelines situated in the public highway.
- 7.2 The EA have drafted their reply without conducting a specific search of their records. The EA ask that Developers make the necessary checks and if have reason to think that the proposal will affect land or equipment which the EA own or is close to a watercourse, then the developer should resubmit the enquiry making this clear in your reply.
- 7.3 Any works that may affect these structures must be consulted first with the Environment Agency.

APPENDIX I – CONTACTED UTILITIES

Utility	Category	Status	Response	Notes
SGN (Southern Gas Networks)	Gas	Received	Affected	
Environmental Agency	Environmental Agency	Received	Affected	See Response
Openreach [British Telecommunications]	Telecom	Received	Affected	
Virgin Media	Telecom	Received	Affected	
Thames Water	Water, Sewerage	Received	Affected	
Utility Assets	Electric	Received	Not Affected	See Response
Reading Borough Council	Council	Received	Affected	Incorrect information received awaiting updated response
LinesearchbeforeUdig	Pipeline	Received	Affected	.
Vodafone	Telecom	Received	Affected	
SSE (Scottish & Southern Electricity)	Electric	Received	Affected	
GTC	Gas	Received	Not Affected	
GTT [Vtesse]	Telecom	Received	Not Affected	
Energetics	Electric, Gas, Water	Received	Not Affected	
TrafficMaster	Other	Received	Not Affected	Website Used
Network Rail	Rail	Received	Not Affected	
SKY Telecommunications Services	Telecom	Received	Not Affected	
City Fibre	Telecom	Received	Not Affected	Website Used
Plancast (Interoute)	Telecom	Received	Not Affected	

	Telecom, Gas, Electric	Received	Not Affected	Website Used
Verizon	Telecom	Received	Not Affected	
C.A. Telecom UK – [Colt Technology Services]	Telecom	Received	Not Affected	
Instalcom - [CenturyLink, Global Crossing Fibernet & Fibrespan]	Telecom	Received	Not Affected	

APPENDIX II – EASEMENTS

SSE – Power supply cables

- SSE require that no works are carried out within a radial distance of 1.5 metres for supplies rated 11kV and 33kV
- Where works are to be carried out in the vicinity of network supplies rated at 66kV and 132kV, SSE must be consulted for further guidance.
- It would be recommended to consult with SSE on all matters concerning the development of an existing site or development of a new site.

BT Openreach

All excavations adjacent to apparatus are to be carried out by hand until the exact extent and/or location of apparatus is known. Mechanical borers and/or excavators shall not be used within 1 metre of Apparatus or 2 metres of any pole without the supervisory presence of a BT representative. To prevent any movement of apparatus during excavation, complete shuttering shall be used as directed by the engineer if:

- Excavation is deeper than the depth of cover of adjacent apparatus
- Excavation is within 1.0 metre of apparatus in stable soil
- Excavation is within 5.0 metres of apparatus in unstable soil

If, for completion of the works, the contractor intends using any of the following:

- Pile driving equipment within 10.0 metres of apparatus
- Explosives within 20.0 metres of apparatus
- Laser equipment within 10.0 metres of apparatus

The contractor shall advise the BT representative, in writing, in order that any special protective measures for the apparatus affected may be arranged.

Thames Water

Thames Water staff will visit any site at reasonable notice to assist in the location of our apparatus and advice of any precautions necessary to avoid damage.

In Order to achieve safe working conditions adjacent to any apparatus the following should be observed:

- All TW Apparatus should be located by hand digging prior to the use of mechanical excavators.
- During construction work, where heavy plant will cross the line of TW Apparatus, specific crossing points must be agreed with TW and suitably reinforced where required. These crossing points should be clearly marked and crossing of the line of TW Apparatus at other locations must be prevented.

- No Explosives are to be used in the vicinity of any TW Apparatus without prior consultation.
- Where it is proposed to carry out piling or boring within 15 metres of any TW Apparatus, TW should be consulted to enable any affected TW Apparatus to be surveyed prior to any works commencing.
- Where excavation of trenches adjacent to any TW Apparatus affects its support, the TW Apparatus must be supported to the satisfaction of TW. Water mains and some sewers are pressurised and can fail if excavation removes support to thrust blocks to bend and other fittings.
- Where a trench is excavated crossing or parallel to the line of any TW Apparatus, the backfill should be adequately compacted to prevent any settlement which could subsequently cause damage to the TW Apparatus. In special cases, it may be necessary to provide permanent support to TW Apparatus which had been exposed over a length of the excavation before backfilling and reinstatement is carried out. There should be no concrete backfill in contact with the TW Apparatus.
- No Apparatus should be laid along the line of TW Apparatus irrespective of clearance. Above ground apparatus must not be located within 5 metres either side of the centre line of TW Apparatus without prior approval. A minimum of radial clearance of 300 millimetres should be allowed between any plant being installed and existing TW Apparatus. No manhole or chamber shall be built over or around any TW Apparatus. No Manhole or chamber shall be built over or around any TW Apparatus.
- Where any TW Apparatus coated with a special wrapping is damaged, even to a minor extent, TW must be notified and the trench left open until the damage has been inspected and the necessary repairs have been carried out. In the case of any material damage to any of the TW Apparatus causing leakage, weakening of the mechanical strength of the pipe or corrosion-protection damage. The necessary remedial work will be recharged.
- With regard to any proposed resurfacing works, you are required to contact TW to arrange a site inspection to establish the condition of any TW Apparatus in the nature of surface boxes or manhole covers and frame affected by the works. TW will advise on any measures to be taken.
- Trees or Shrubs – please ensure that, in relation to TW Apparatus the mature root systems and canopies of any tree planted do not encroach within the recommended distances specified in the notes overleaf.

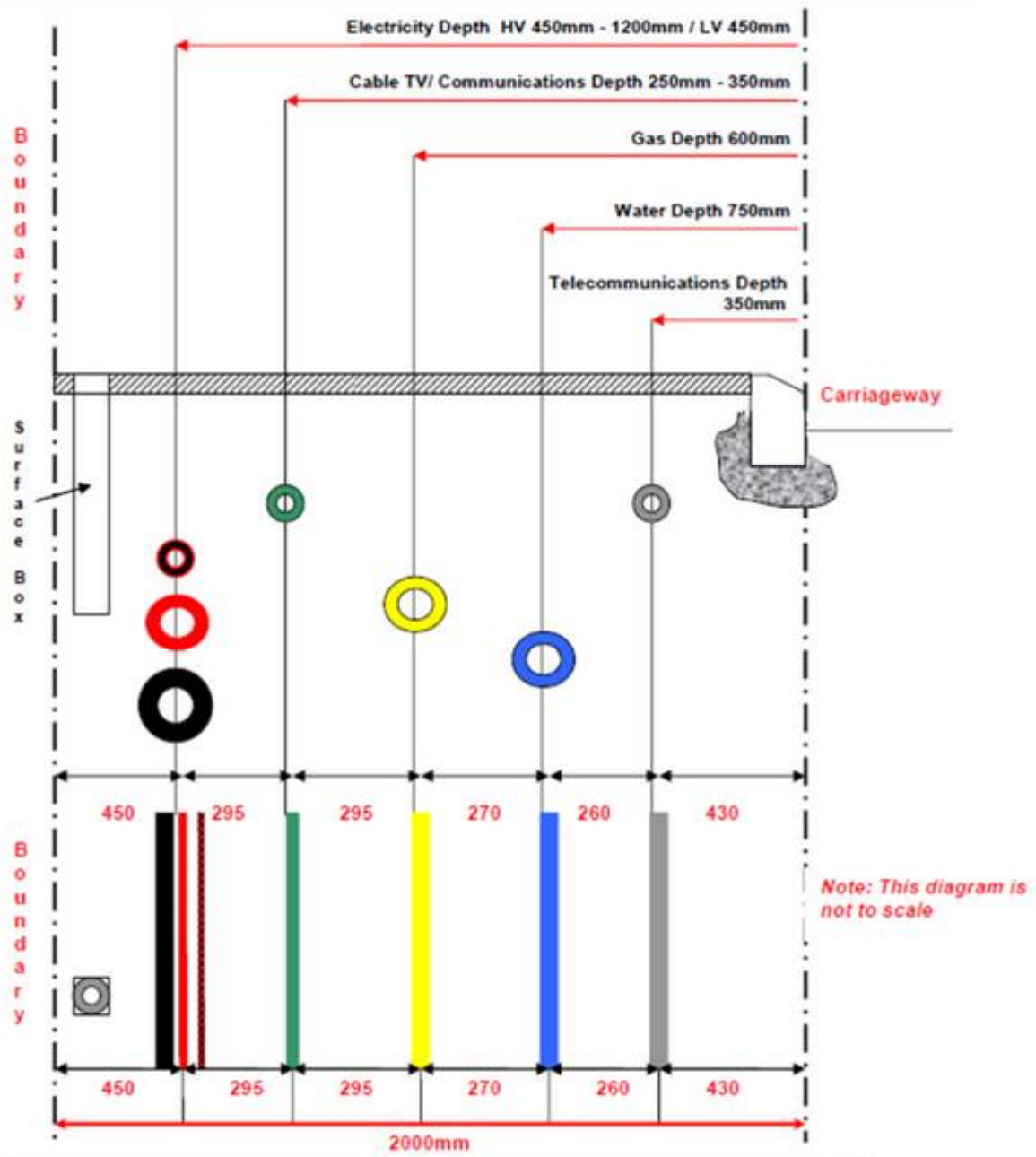
Southern Gas Networks

- SGN issue a Dig Safely – measures to avoid injury and damage to gas pipes document which is included in Appendix III
- Protective measures must be taken when excavating in the vicinity of SGN gas apparatus up to 7 bar pressure. Reference should be made to the HSE Guidance Note HSG 47 “Avoiding Danger from Underground Services” and to “Utilities Guideline on Positioning and Colour Coding Apparatus”.

- SGN surface boxes must not be buried or moved. Access must be maintained both during and after works have been carried out. SGN reserve the right to locate and/or realign any boxes not left in such condition upon completion of works and at the expense of the contractor and/or client. No manhole cover or other structure is to be built over, around, or under a gas pipe and no work is to be carried out which results in the reduction or increase in cover protection without agreement.
- No apparatus is to be laid directly above the line of existing gas pipes irrespective of clearance. Where new plant crosses over, or is laid alongside, an existing gas pipe, a minimum clearance of 250 millimetres (or 1.5 times the external diameter of the gas pipe if this is greater) between the gas pipes and new plant should be provided to allow future repair or maintenance. Where the minimum clearances cannot be met, if the work is close to a pipe operating above 2 bar (intermediate pressure), site discussions should be held with SGN to agree a suitable clearance.
- Mechanical excavators (including breaker attachments) must not be used within 0.5 metres from low pressure and medium pressure gas mains, and 3 metres from high pressure gas mains.
- The presence of low/medium pressure gas has been identified within the vicinity of the site.
- In addition, no works or crossings of the intermediate pressure pipeline(s) are to be carried out until a detailed consultation has taken place with SGN.
- SGN should be consulted on all matters concerning the re-development of an existing site or development of a new site.

FIGURE 1 - Recommended Positioning of Utility Apparatus in a 2 metre Footway

Note – the same positioning should apply in the carriageway/service strip (if safe and practical to do so) where a development has no footway(s) available for services and/or the boundary of the property is on the carriageway (please refer to minimum depths in carriageways). For further advice please contact the asset owner.



Reference information re underground services

TABLE 1 – Recommended Colour Coding of Underground Utilities Apparatus
All depths are from the surface level to the crown of the apparatus

Utility	Duct	Pipe	Cable	Marker Systems	Recommended Minimum Depths	
					Footway/Verge	Carriageway
Electricity HV (High Voltage)	Black or red duct or tile	N/A	Red or black	Yellow with black and red legend or concrete tiles	450-1200mm	750-1200mm
Electricity LV (Low Voltage)	Black or red duct or tile	N/A	Black or red	Yellow with black legend	450mm	600mm
Gas	Yellow	*** See row below	N/A	Black legend on PE pipes every linear metre.	600mm footway 750mm verge	750mm
*** PE - up to 2 bar - yellow or yellow with brown stripes (removable skin revealing white or black core pipe). - between 2 to 7 bar -orange. Steel pipes may have yellow wrap or black tar coating or no coating. Ductile Iron may have plastic wrapping Asbestos & Pit / Spun Cast Iron – No distinguishable colour						
Water non Potable & Grey Water	N/A	Black with green stripes	N/A	N/A	600 – 750mm	600 – 750mm
Water - Firefighting	N/A	Black with red stripes or bands	N/A	N/A	600 – 750mm	600 – 750mm
Oil / fuel pipelines	N/A	Black	N/A	Various surface markers Marker tape or tiles above red concrete	900mm <i>All work within 3 metres of oil fuel pipelines must receive prior approval</i>	900mm <i>All work within 3 metres of oil fuel pipelines must receive prior approval</i>
Sewerage	Black	No distinguishing colour / material (eg: Ductile Iron may be red; PVC may be brown)	N/A	N/A	Variable	Variable
Communications 	Grey, white, green, Black, purple	N/A	Black or light grey	Various	250 – 350mm	450 - 600mm
Water	Blue or Grey	Blue polymer or blue or uncoated Iron / GRP. Blue polymer with brown stripe (removable skin revealing white or black pipe)	N/A	Blue or Blue/black	750mm	750mm minimum
Water pipes for special purposes (e.g. contaminated ground) 	N/A	Blue polymer with brown stripes (non-removable skin)	N/A	Blue or blue/black	750mm	750mm minimum

These guidelines describe utility industry practice. However, it should not be assumed that all apparatus will conform to the recommendations for positioning and colour coding contained in this publication.

NJUG recommendations

TABLE 2 – Recommended Colour Coding of Other Underground Apparatus

All depths are from the surface level to the crown of the apparatus

Asset Owner	Duct	Pipe	Cable	Marker Systems	Recommended Minimum Depths	
					Footway	Carriageway
Highway Authority Services						
At the time of publication the following were current examples of known highway authority apparatus colour coding but local variations may occur						
Street Lighting						
England and Wales	Orange	N/A	Black	Yellow with black legend	450mm	600mm
Scotland	Purple	N/A	Purple	Yellow with black legend	450mm	450mm
Northern Ireland	Orange	N/A	Black or orange	Various	450mm	450mm
Other						
Traffic Control	Orange		Orange	Yellow with black legend		
Street Furniture	Black or orange	N/A	Black	Yellow with black legend	450mm	600mm
Communications	Light grey	N/A	Light grey or black	Yellow with black legend		
CCTV	Purple	N/A				
Motorways and Trunk Roads						
England and Wales						
Communications	Purple	N/A	Grey	Yellow with black legend	450mm	
Communications Power	Purple	N/A	Black	Yellow with black legend		
Road Lighting	Orange	N/A	Black	Yellow with black legend		
Scotland						
Communications ● ●	Black or grey	N/A	Black	Yellow with black legend		
Road Lighting	Purple	N/A	Purple	Yellow with black legend		

These guidelines describe utility industry practice. However, it should not be assumed that all apparatus will conform to the recommendations for positioning and colour coding contained in this publication.

NJUG recommendations



APPENDIX III – UTILITY RECORD INFORMATION