



North Dane Way

**Gillingham
Kent
ME5 8JZ**

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PROJECT NO.

604256

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1

STATUS

For Information



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1. Introduction

This report investigates the utility companies' existing plant within the vicinity of the site and the ability and capacity of this plant to serve the proposed development.

The report identifies and comments on any potential adverse effects the proposed development may have on the existing plant. The report also recommends further items of investigation and action where appropriate.

The report is based on the information provided by the client about the proposed development and the information provided by the utility and service organisations about their plant and networks. The information contained in this report is primarily based on desk research although a visual site inspection was made on 12/09/2018.

All costs given are budget only and therefore should not be used for contract purposes. Formal quotations can be provided for both new supplies and any diversions when the site has full planning permission and detailed plans are submitted to each utility.

Utility infrastructures are dynamic systems with new loads affecting them in different ways and new developments coming on stream all the time. The difficulty for site appraisal is that load cannot be secured until the formal site supply quotations have been applied for, accepted and paid. Therefore, it must be clearly understood that the information and budget costs given in this report could be superseded by load demand take-up at any time.

Site Access

There are several site access points according to the masterplan sketch. A new spine road connects to the Capstone Road roundabout in the northeast corner. This spine road joins the existing carriageway of Shawstead Road within the site boundary. Multiple access points (up to 10) off Shawstead Road are shown into land parcels. A possible vehicle entrance is shown from the southern parcels to North Dane Way. Shawstead Way's western end appears to be remodelled to join the existing roundabout on North Dane Way.

During the access construction, caution will need to be exercised when working around the existing plant and temporary protection works may be necessary. Some utilities may also require the installation of spare ducts across the access for future use.

Hand dug trial holes should be carried out at proposed access roads to determine the exact depth and location of any plant. Costs can then be obtained based on the results of these trial excavations.

General Note on Diversions

Qualified contractors can carry out EML (Electromagnetic Location) and GPR (Ground Probing Radar) PAS128 surveys to determine depth and location of plant, although their accuracy can be impaired due to congestion of plant or variations in ground conditions/plant material types.

We recommend, as a minimum, that an PAS128 survey is carried out to determine the location of all utility plant in the vicinity of the site to establish the extent and necessity of all diversions. From this survey, further trial holes may be recommended to verify the exact location of services and possible diversions.



Site Information

Type of Heating

All units to be heated by gas.

Drawings

Location plan ref: N/A

Site layout ref: 08284 Rev 1

Accommodation Schedule

Residential

Dwelling Type	No. of Beds	Total
Flat	1/2	180
House	2/3/4	720
Total		900

Commercial

Unit	Use	Area (m ²)
Primary school		Unknown

Prepared by

Anthony Higgs

Signed off by

Nigel Hall



Cert No 6206
ISO 9001



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2. Executive Summary

The following summary is a collation of the information contained within this report and is not a complete schedule of costs. It may consist of a combination of costs provided by the utilities, PES's estimation of PC sums or other sources of information. Additional costs may be incurred, as further information is known about the development proposals and utility infrastructure requirements. It is recommended that full quotations are obtained if this is critical for contractual purposes.

Electric



Disconnections

A PC budget sum of **£2,000** applies for the disconnection of the kiosk in the south of the site.

Diversions

UKPN budget cost of **£1.44m inc. VAT** to divert 2x EHV overhead lines to new underground routes outside the site. Alternative on-site routes could cost less but present constraints, see report.

A PC budget sum for HV cable diversions in Shawstead Road could be **£142,000**. A PC budget sum for EHV/HV/LV lowering at the North Dane Way/Shawstead Road roundabout junction could be a further **£150,000**.

A PAS128 utility survey and trial holes are recommended to locate plant. The developer's legal team should investigate existing wayleaves/easements/deeds of grant.

Reinforcement

Approx. 750m of off-site HV cable reinforcement is required, at a PC budget sum of **£240,000**.

New Connections

UKPN budget cost of **£1.45m** to serve 900x gas-heated units, a school and some car charging provision. At least 3x substations required on-site.

Water



Disconnections

Not anticipated.

Diversions

A PC budget sum for diversions at the Capstone Road roundabout is **£40,000**. A further PC budget sum of **£85,000** could apply for relocating the main in Shawstead Road that serves the recycling centre, but it may be possible to mitigate this depending on site programme/phasing. PAS128 utility survey and trial holes recommended.

Reinforcement

Unknown at present. Capacity check or formal quote required to confirm. Costs for reinforcement likely to be covered by infrastructure charges.

New Network (Mains)

Total cost of on-site mains likely to be around £630,000 based on 7,500m of on-site main connecting to assumed connection point in Capstone Road. Southern Water's published rates of income offset are likely to reduce this figure to **£nil**.

New Connections (services)

Budget connection cost for 900x on-site 25mm connections is **£288,000**. An additional 90mm connection to the school could be a further **£7,000**.

Infrastructure Charges

Residential charges for water and sewerage approx. **£868,500** at current rates. Commercial charges for the school **£TBC** and based on usage.

Gas



Disconnections

Not anticipated.

Diversions

SGN C3 budget estimate of **£13,200 inc. VAT** to divert/lower main across Capstone Road roundabout junction arm. PAS128 utility survey and trial holes recommended.

Reinforcement

SGN's preliminary assessment indicates this is not anticipated. Formal quotation required to confirm.

New Connections

TUC budget rebate to the developer of **£22,950** for 900x gas-heated units, using SGN low pressure connection point.

Openreach



Diversions

Diversions are likely in Capstone Road. Openreach require a cheque for **£4,200 inc. VAT** to provide a C4 diversion estimate. PAS128 utility survey and trial holes recommended, and also in Shawstead Road to locate cable marked wrongly as overhead on asset maps.

New Connections

Rebate to the developer of **£109,800** based on 180x flats and 720x houses. Fibre to the premise (FTTP) available.

Virgin Media



Diversions

Not anticipated, unless access from southern land parcels to North Dane Way is vehicular rather than foot. If a vehicle entrance is proposed then Virgin Media will require a cheque for **£720 inc. VAT** to provide a C4 diversion estimate.

New Supplies

New connections possible. Further investigation required.



Independents



GTC

Diversions are not anticipated.

ESP

Diversions are not anticipated.

Other



Mast Data

Possible EE base station in North Dane Way. Further investigation required.



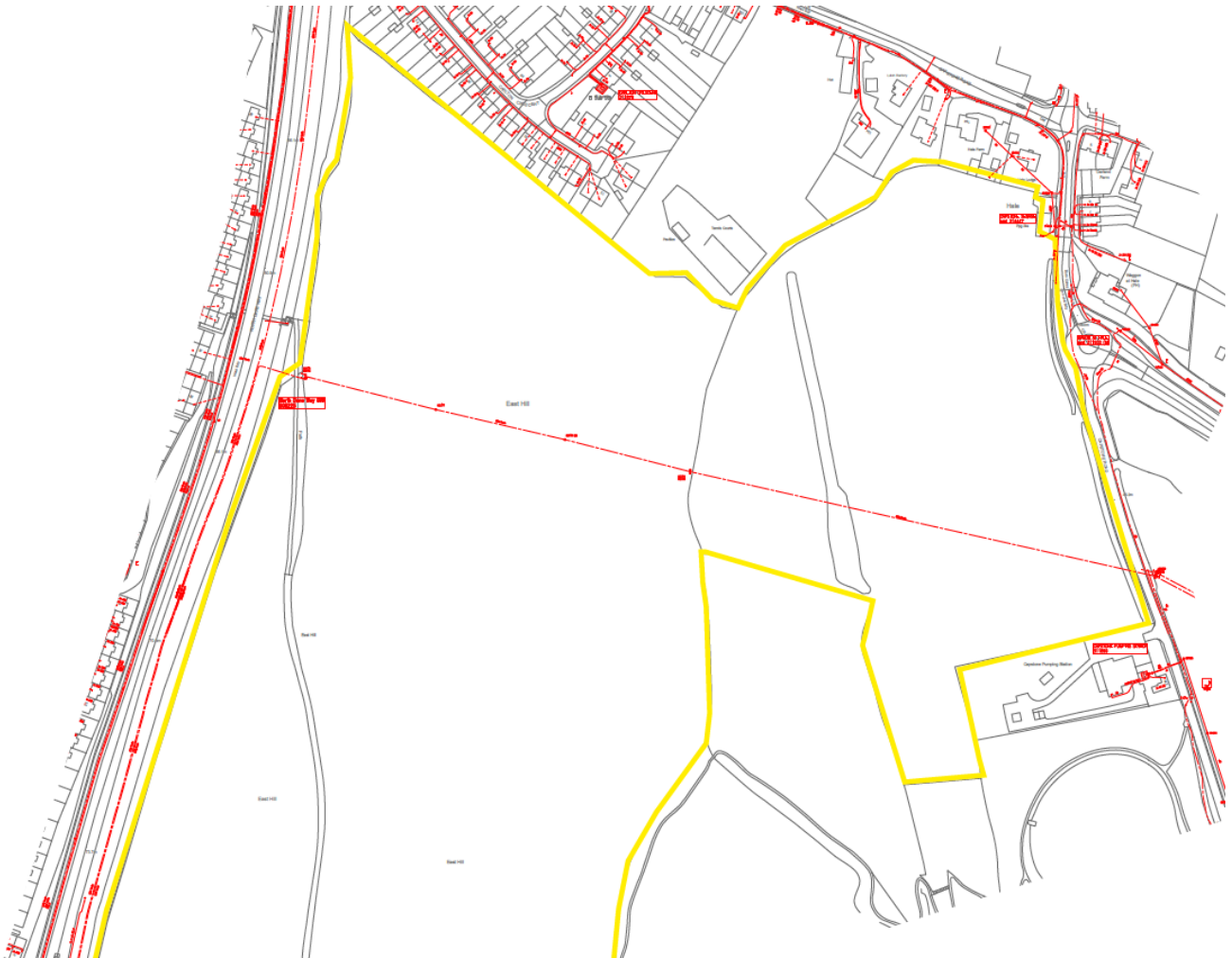
3. Electric

The Distribution Network Operator is UK Power Networks.

3.1. Existing Network

Based on the utility asset maps there is EHV/HV/LV apparatus in the vicinity of the site.

Figure 1 – UKPN existing network (north)



Source: PES PALM

In the northeast corner of the site there are mains cables within Capstone Road. A high voltage (HV) main runs in the eastern side of Capstone Road and serves the Waggon at Hale pole-mounted transformer (PMT) before crossing the road north of the roundabout to serve the Capstone Sewage PMT which feeds a Southern Water pumping station. Low voltage (LV) cables in this area serve street lighting lamp columns. South of the roundabout the Capstone Pumping Station substation serves another Southern Water pumping facility.

A 33kV extra high voltage (EHV) overhead line crosses the northern portion of the site. The section from Capstone Road crosses fields in a shallow valley by a single large span to the central belt of woodland. From the woodland westwards the route climbs over a hill via intermediate poles (as per cover photo) to reach the North Dane Way GVR (gas vacuum recloser). From here the EHV route runs underground to North Dane Way.

Figure 2 – View from Capstone Road, northern overhead EHV route crossing site

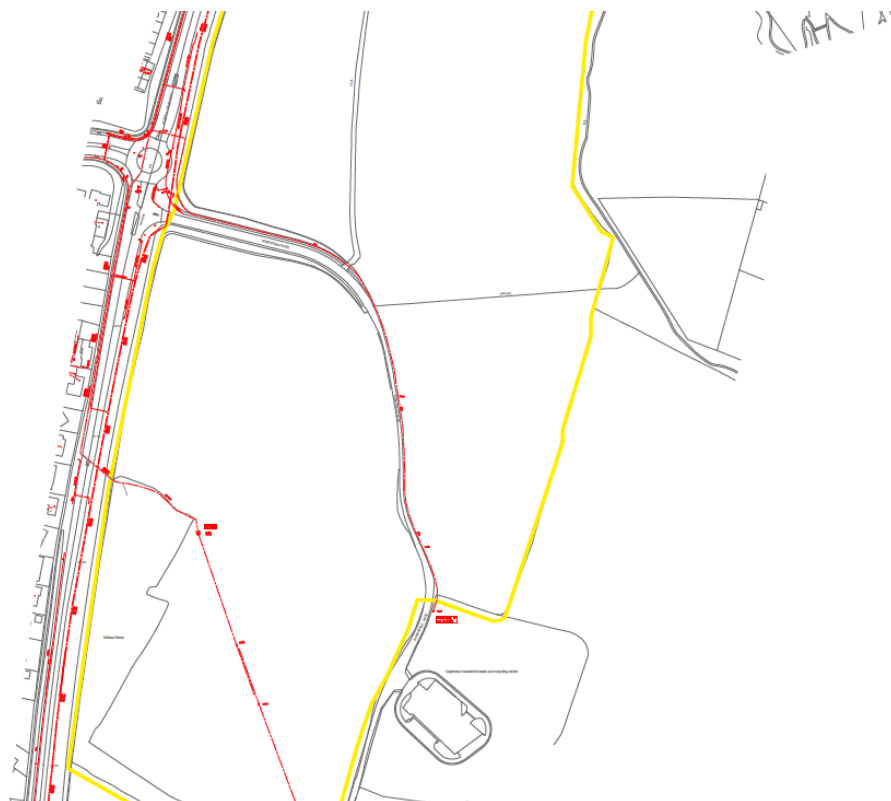


Source: PES site visit

Figure 3 – North Dane Way GVR in northwestern area of the site



Source: PES site visit

Figure 4 – UKPN existing network (central)

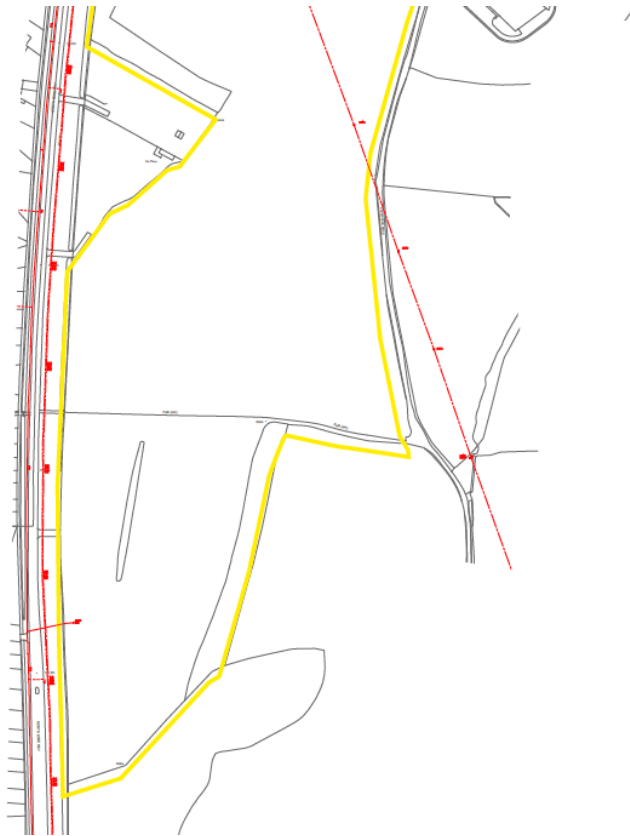
Source: PES PALM

2x EHV mains run in the eastern verge of North Dane Way along the boundary of the site, until one of them tees off to reach the North Dane Way GVR as described above. Other EHV, HV and LV routes are shown on the opposite side of North Dane Way, occasionally crossing over to serve street lighting.

An HV cable runs from the North Dane Way/Shawstead Road junction and is shown in the verge all the way to the Shawstead Tip PMT at the Capstone Household Waste & Recycling Centre. This appears to be a private substation serving just this facility and private plant will be present in this area.

Figure 5 – Shawstead Tip PMT (and Openreach pole)

Source: PES site visit

Figure 6 – UKPN existing network (south)

Source: PES PALM

A 33kV EHV cable route from North Dane Way runs underground into the site south of Shawstead Road. It reaches a termination pole at the edge of Whites Wood from where the EHV runs overhead via a series of poles across the site to eventually cross Shawstead Road south of the recycling centre.

An LV cable is shown crossing North Dane Way and serving a kiosk within the southern portion of the site. This area is overgrown and whilst on-site it was not possible to find any obvious sign of this connection.

Figure 7 – Southern EHV route crossing site, Shawstead Road in treeline on right

Source: PES site visit



Having reviewed the development proposals, several diversions may be necessary.

UKPN have provided a budget estimate to divert the 2x EHV routes across the site, by transferring them to new underground routes. For the northern cables, this involves a new route via North Dane Way and Capstone Road. For the southern cables, this involves using Shawstead Road. The UKPN budget cost for these works is **£1.44m inc. VAT**.

It may be possible to divert the cables through the site in each case, which will reduce both the length of diversion and excavation/reinstatement costs. However, any new EHV route within the boundary is likely to have restrictions in terms of other utility plant that can be laid in the vicinity. The location of other new utility services will need to be carefully considered at design stage. An easement strip is likely to be required. Location under new on-site carriageway is possible in principle, although this could sterilise spine road footways for other utilities, so a route within the boundary but outside development parcels could be preferable.

We strongly recommend that the client's legal team check for wayleaves, easements or leases to see if there are any legal conditions associated with removing the EHV plant that could affect lead times and costs. It may be possible to give UKPN 'notice to quit' depending on what type of legal agreements are currently in place for the cable routes.

In all cases sufficient time should be allowed in the programme for the design, delivery and legal elements of these works. EHV circuits can require network shutdowns to be planned a long time in advance so UKPN will need as much notice as possible.

Given the potential cost of diverting the strategic electricity circuits located on-site it is strongly recommended that more detailed investigation works are undertaken. This could include direct discussions with UKPN to investigate cost mitigation strategies. PES are experienced in this type of strategic infrastructure work.

The masterplan sketch shows 5x road junctions linking to Shawstead Road from the north and east, either site spine roads or routes into land parcels. These cross the existing HV cable serving the recycling centre and are likely to cause diversion/lowering in-situ. As Shawstead Road is likely to be realigned and widened as part of the development a PC budget sum for diverting the HV cable along its whole length within the site boundary (approx. 450m) is **£142,000**.

The masterplan also suggests that Shawstead Road is to be realigned to join North Dane Way at the existing roundabout to the north of the current junction location. At this point there are 2x EHV, 1x HV and 1xLV cables which could all be affected by the formation of a new roundabout junction arm. Allow a PC budget sum of **£150,000** for diversion/lowering in-situ.

It is assumed that the access from the southern land parcels to North Dane Way on the masterplan is intended as foot access. If instead a junction is introduced here then diversions will be very likely.

Assuming the LV connection to the kiosk in the south is no longer required, allow a PC budget sum of **£2,000** for disconnection. Please note that not all service connections or private apparatus are shown on the utility asset maps. Redundant services will require disconnection prior to starting on-site.

A PAS128 utility survey and trial holes are recommended to locate all underground plant within and adjacent to the site boundary.

Where overhead routes/poles are affected by your proposals and poles or their stays need moving, please note that relocating either to third party land can cause potential delays with legal and planning issues.

During the site survey a number of street lights were noted in North Dane Way and Capstone Road. You are advised to contact the local lighting authority (often the local council) to ascertain ownership and electricity cable arrangements as not all connections are marked on utility asset maps and may be fed via private cable networks.

Indicative costs

Disconnections

A PC budget sum of **£2,000** applies for the disconnection of the kiosk in the south of the site.

Diversions

UKPN budget cost of **£1.44m inc. VAT** to divert 2x EHV overhead lines to new underground routes outside the site. Alternative on-site routes could cost less but present constraints, see report.

A PC budget sum for HV cable diversions in Shawstead Road could be **£142,000**. A PC budget sum for EHV/HV/LV lowering at the North Dane Way/Shawstead Road roundabout junction could be a further **£150,000**.

A PAS128 utility survey and trial holes are recommended to locate plant. The developer's legal team should investigate existing wayleaves/easements/deeds of grant.

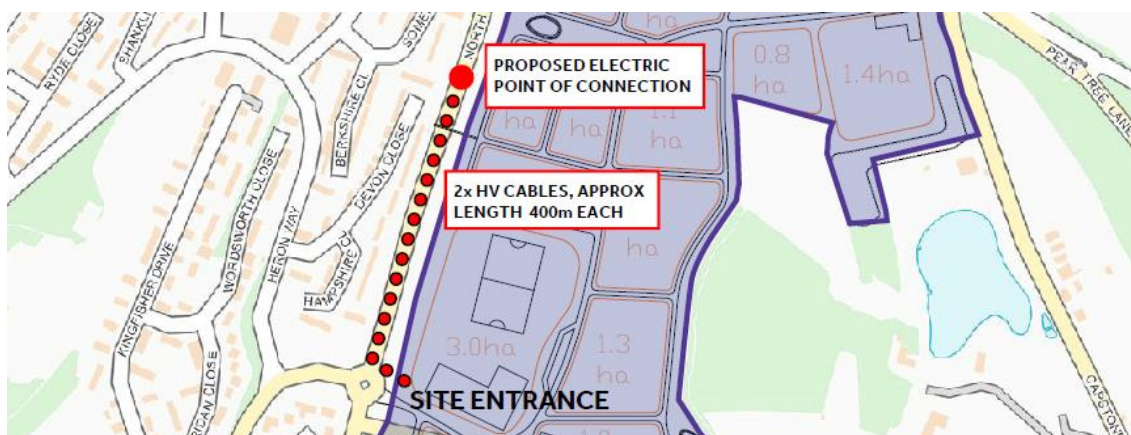
3.2. New Connections

UKPN have provided a budget estimate of **£1.45m** to serve the site. This is based on a total site loading of 2,505kVA which allows for 900x gas-heated units, a school and provision for 230kVA of electric car charging points. The cost is based on connection to the HV network in North Dane Way and does not include provision for reinforcement. At least 3x substations will be required on-site and these will need to be spread around the development to minimise voltage drop issues.

For the flats, this will also assume a supply to a suitable location, probably on the ground floor. UKPN's costs do not include risers and laterals to meter positions – please liaise with your electrical contractor for a PC sum for this element of works.

In addition, a formal point of connection (PoC) quote from UKPN has been received. They have provided a cost of £38,510 inc. VAT to provide a connected load of 2,505kVA onto the HV network in North Dane Way approx. 400m north of the new roundabout access to Shawstead Road. Additional costs will apply to bring the HV cables along North Dane Way to the site entrance and then to be distributed via on-site substations at LV to individual meter positions. These works/costs could be via an ICP and adopted by an IDNO.

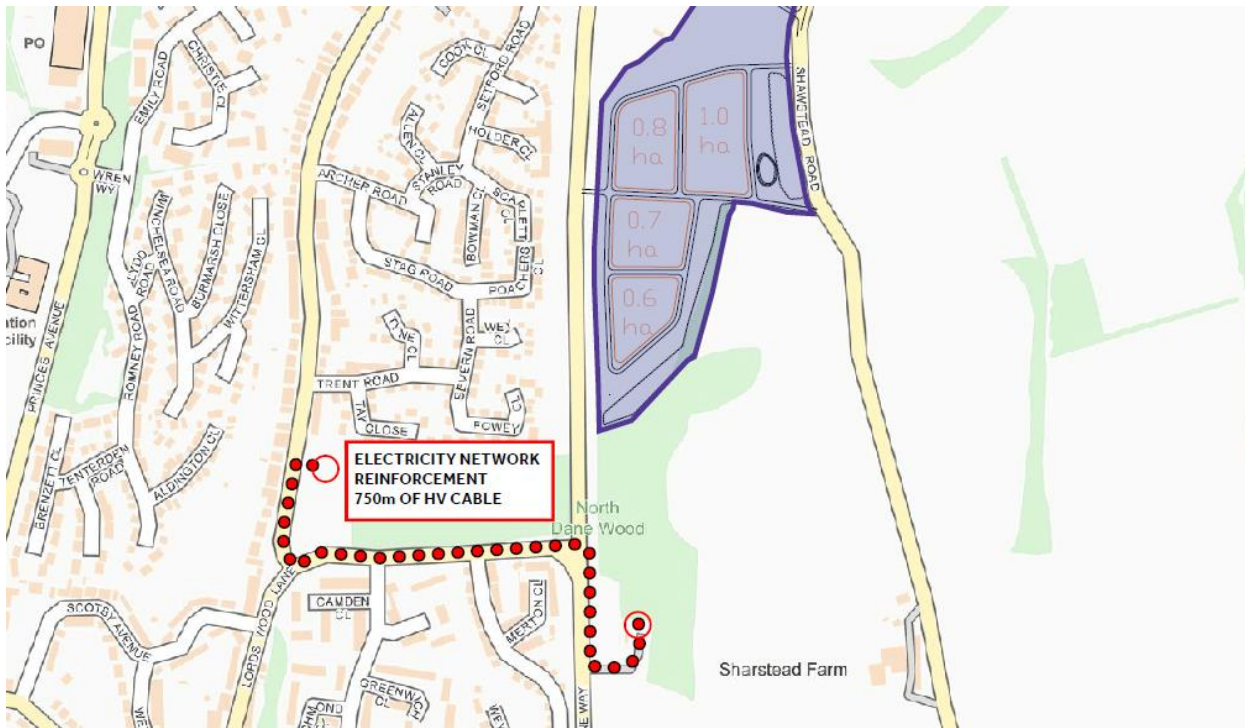
Figure 8 – UKPN connection point and HV cable route to Shawstead Road roundabout entrance



Source: PES PALM

The PoC quotation also confirms that in order to provide this HV connection point, off-site reinforcement is required south of the site. Approx. 750m of HV cable will need to be laid between the Lordswood primary substation and the Lordswood Lane South substation. This could also be undertaken by an ICP. As reinforcement is specifically excluded from the UKPN budget cost of £1.45m given earlier, PES recommends allowing a further PC budget sum of **£240,000** for this work.

Figure 9 – UKPN off-site reinforcement approx. cable route



Source: PES PALM

If you wish to secure this load it may be worth considering paying the PoC quote although final design of the site may alter the capacity and the PoC may need updating.

A space of at least 4m x 4m should be allowed for each substation in a GRP kiosk. A space of 5m x 5m should be allowed for a brick-built substation enclosure. The developer is responsible for obtaining planning permission for brick-built enclosures. Vehicular access will be required to substation positions at all times. At least 4-6 months should be allowed for a new substation to be installed and commissioned.

UKPN note that if the price of the electricity connections is critical to your decisions or financial commitment to this project, you are strongly advised to consider the option of asking them to provide a formal quotation.

Indicative costs

Reinforcement

Approx. 750m of off-site HV cable reinforcement is required, at a PC budget sum of **£240,000**.

New Connections

UKPN budget cost of **£1.45m** to serve 900x gas-heated units, a school and some car charging provision. At least 3x substations required on-site.

Figure 11 – Southern Water pumping station south of Capstone Road roundabout



Source: PES site visit

No potable water mains are shown in the entire length of North Dane Way adjacent to the site, with the exception of a 63mm main which approaches from the west and runs north/east of the Shawstead Road carriageway to serve the recycling centre.

Figure 12 – Southern Water existing network (Shawstead Road area)



Source: PES PALM

An 18” SI main crosses North Dane Way and runs through North Dane Wood to the south of the site.

Having reviewed the development proposals, diversions of the water network are likely. At the Capstone Road access, a PC budget sum for diverting/lowering the 2x mains across the new arm of the roundabout is **£40,000**.

As Shawstead Road is likely to be realigned and widened as part of the development a PC budget sum for diverting the main along its whole length within the site boundary (approx. 450m) is **£85,000**. Depending on the programme of the site it may be possible to mitigate this, i.e. if a new spine main for the development is installed in the new alignment of Shawstead Road first, then a new connection could be taken from this to serve the recycling centre and the existing main could be abandoned at a lower cost. This will require liaison with Southern Water and is dependent on programme/phasing factors.

A PAS128 utility survey and trial holes are recommended to locate all plant in these areas.

No disconnections are anticipated, but please note that not all service connections or private apparatus are shown on the utility asset maps. Redundant services will require disconnection prior to starting on-site.

Indicative costs

Disconnections

Not anticipated.

Diversions

A PC budget sum for diversions at the Capstone Road roundabout is **£40,000**. A further PC budget sum of **£85,000** could apply for relocating the main in Shawstead Road that serves the recycling centre, but it may be possible to mitigate this depending on site programme/phasing. PAS128 utility survey and trial holes recommended.

4.2. New Network (Mains)

Southern Water’s fee for a capacity check is currently unpaid by the developer and therefore the following costs are based on the assumption of a connection point to the 12” main in Capstone Road.

Figure 13 – Assumed potable water connection point



Source: PES PALM



Based on the road layout shown on the site masterplan, a total of approx. 7,500m of on-site mains are likely to be required. Southern Water's 2018-19 scheme of charges indicates a cost range of £55-101 per metre of main depending on diameter. Assuming an average figure of £80/m and adding in design charges, the total budget cost for on-site mains is in the region of £630,000. Where soil contamination is present in certain areas, then barrier pipe will be required and this could increase costs.

Southern Water offer an income offset to the cost of on-site mains based on unit size. For 900 units, the published rate of income offset would reduce the above budget cost figure to **£nil**. This is based on Southern Water carrying out the mainlaying – if the developer wishes to undertake self-lay then costs could change. The above costs do not include any applicable reinforcement, but most of these costs are likely to be covered by infrastructure charges (see section 4.4).

Indicative costs

Reinforcement

Unknown at present. Capacity check or formal quote required to confirm. Costs for reinforcement likely to be covered by infrastructure charges.

New Network (Mains)

Total cost of on-site mains likely to be around £630,000 based on 7,500m of on-site main connecting to assumed connection point in Capstone Road. Southern Water's published rates of income offset are likely to reduce this figure to **£nil**.

4.3. New Connections (Services)

Southern Water's 2018-19 charges scheme indicates that a standard on-site 25mm connection is approx. £320. For 900x units this is a total residential budget cost of **£288,000**.

Where soil contamination is present in certain areas, barrier pipe could increase costs. If blocks of flats containing more than three stories are proposed, it is likely that bulk connections/internal meters would be required which could affect costs.

For an additional 90mm connection to the school please allow an additional budget PC sum of **£7,000**.

Indicative costs

New Connections (services)

Budget connection cost for 900x on-site 25mm connections is **£288,000**. An additional 90mm connection to the school could be a further **£7,000**.



4.4. Infrastructure Charges

From April 2018 these are payable for each dwelling at the rate set by Southern Water. The 2018-19 rates are £200 for potable water and £765 for sewerage. These charges will cover most reinforcement and network modelling costs. Southern Water will waive their potable charge (only) if a property consumes no more than 110l per person per day.

These rates will change every April and could go up or down if unpaid.

Based on 2018-19 rates the total charge for 900x units at this site will be **£868,500** (assuming no discount for water efficiency as above).

Additional charges will be levied for the school based on usage.

Credits may be available for previous usage by any supplies within the site boundary, providing adequate evidence is produced and the usage has been within the last 5 years.

Indicative costs

Infrastructure Charges

Residential charges for water and sewerage approx. **£868,500** at current rates. Commercial charges for the school **£TBC** and based on usage.



5. Drainage

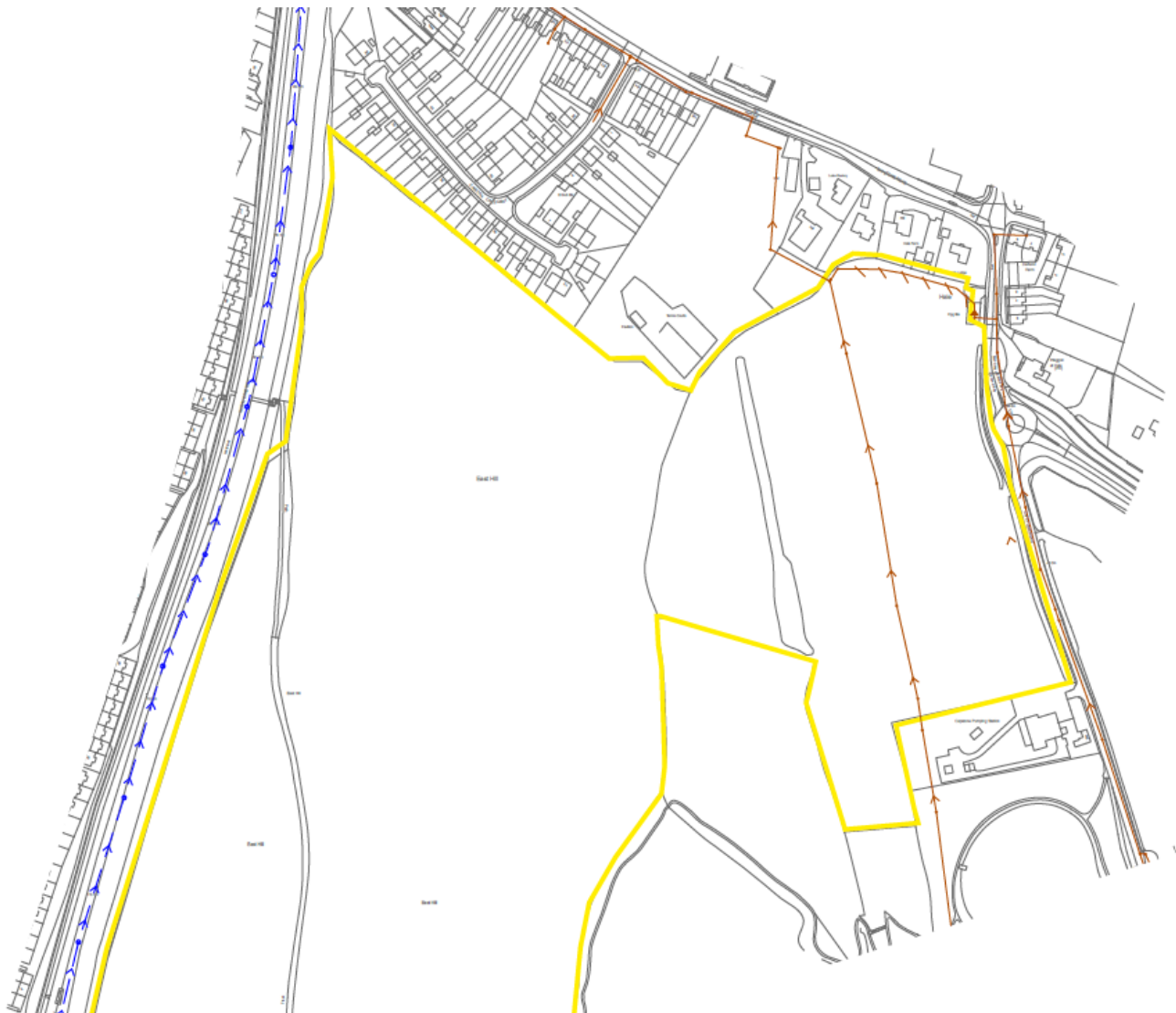
The local incumbent drainage company is Southern Water.

5.1. Existing Network

Utility asset maps are enclosed for information only.

Please note that the utility asset maps show drainage plant within the northeast section of the site, connecting to the foul pumping station north of the Capstone Road roundabout.

Figure 14 – Southern Water drainage network (north)



Source: PES PALM



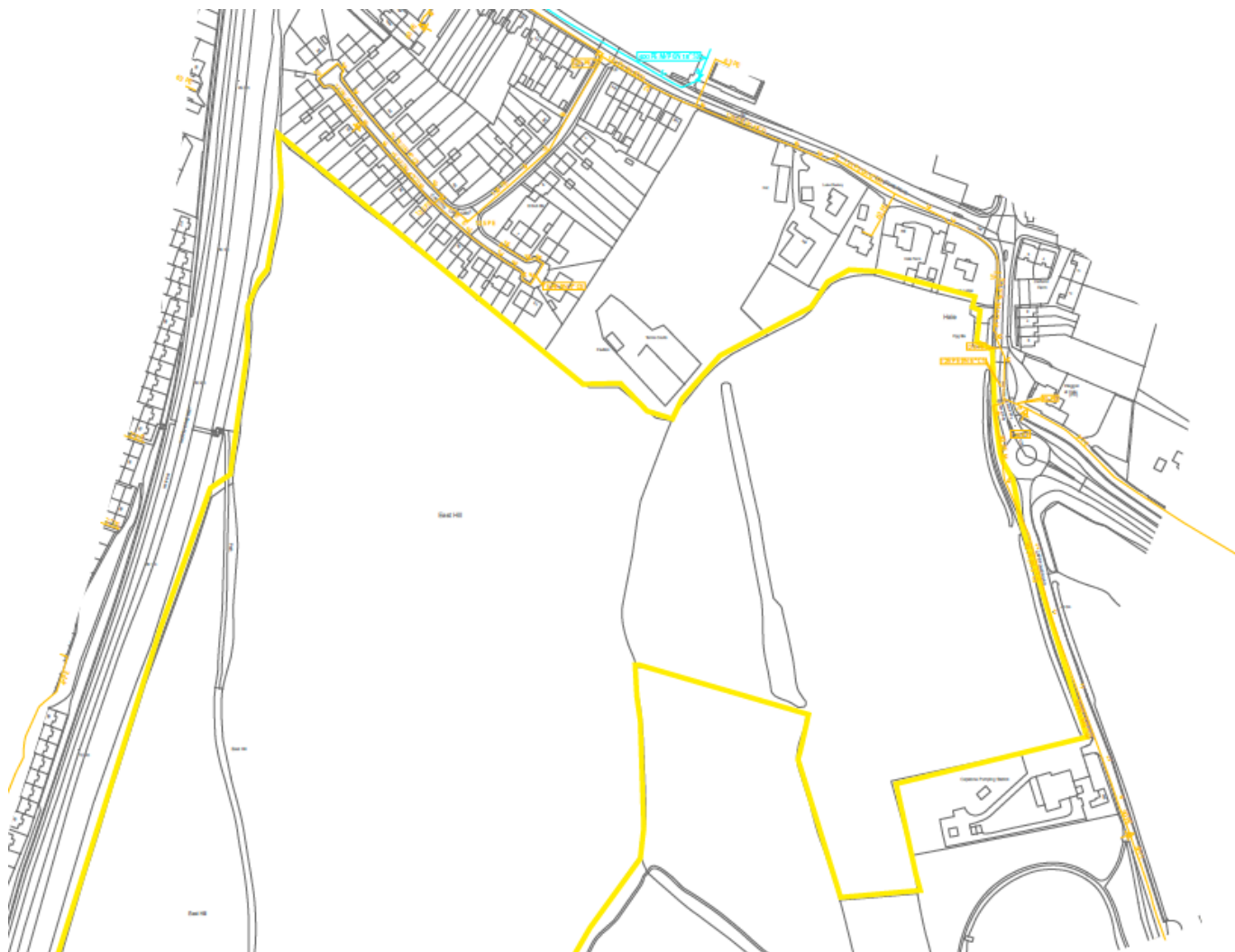
6. Gas

The Gas Distribution Network is SGN.

6.1. Existing Network

Based on the utility asset maps there are various gas mains in the vicinity of the site.

Figure 15 – SGN existing network (north)



Source: PES PALM

A 125mm PE low pressure (LP) main is present in Capstone Road to the north of the roundabout. This becomes a 90mm PE main opposite the Waggon at Hale pub and then heads south in the verge of the roundabout and carriageway of Capstone Road.

No gas mains are shown in North Dane Way adjacent to the site. The residential area west of North Dane Way is served by many LP mains, and also contains medium pressure (MP) mains which loop around to the northern part of Capstone Road some distance from the site boundary.

Having reviewed the development proposals, diversion of the gas network may be necessary. SGN have provided a C3 budget estimate of **£13,200 inc. VAT** to divert/lower the 90mm LP main in the Capstone Road roundabout across the proposed new roundabout junction arm.

A PAS128 utility survey and trial holes are recommended to locate this main.

No disconnections are anticipated, but please note that not all service connections or private apparatus are shown on the utility asset maps. Redundant services will require disconnection prior to starting on-site.

Indicative costs

Disconnections

Not anticipated.

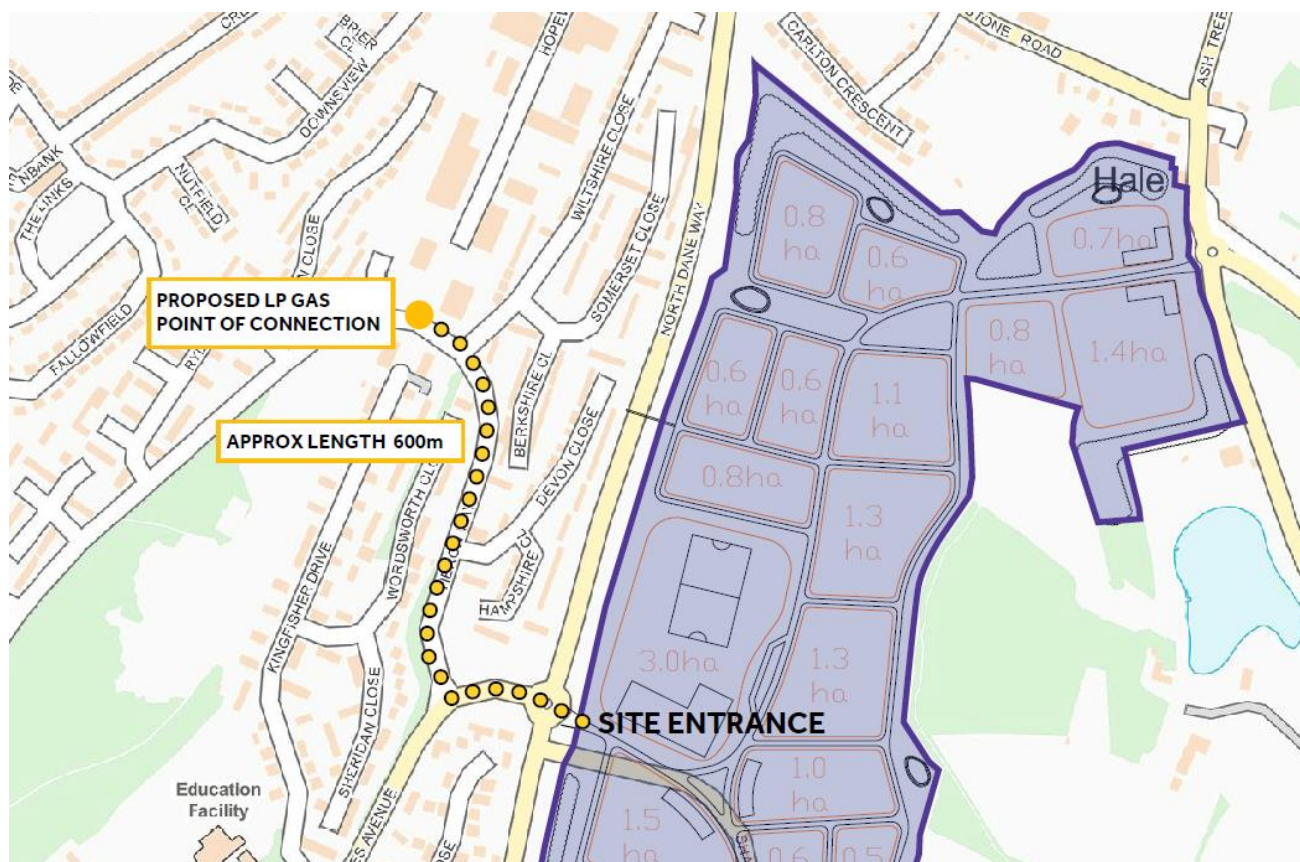
Diversions

SGN C3 budget estimate of **£13,200 inc. VAT** to divert/lower main across Capstone Road roundabout junction arm. PAS128 utility survey and trial holes recommended.

6.2. New Connections

SGN have advised that the nearest main with sufficient capacity is approx. 600m from the site boundary and is a 250mm DI LP main in Heron Way to the west of the site. They have also advised that an MP main just beyond this point should also have capacity to serve the site. This is a preliminary assessment only and in order to confirm the requirements to serve the site a formal application will be required. The formal assessment is usually carried out at detailed design stage.

Figure 16 – SGN gas point of connection (preliminary assessment)



Source: PES PALM



SGN's Standard Condition 4B Statement - Section 2.12 and Annex D, explains where and how reinforcement is charged. In summary, SGN may charge reinforcement where the site is designated "sufficiently complex" and warrants further investigation. SGN will charge a design fee to determine the Connection Charging Point [CCP] (the point on the network where the required pressure and load could theoretically be served) from which it is determined if the customer (downstream of the CCP) or SGN (upstream of the CCP) pays for reinforcement subject to an Economic Test. If it is essential to know the costs before procurement of the final connection, then a design fee needs to be paid in order to obtain any reinforcement costs.

TUC (an independent gas transporter) has provided a budget rebate to the developer of **£22,950** for the new mains and services to the site. This cost is based on external type metering to the frontage of the properties. No allowance has been made for steelwork or manifold arrangements. This cost is based upon no off-site reinforcement works being required, but does allow for an off-site main to reach the LP connection point indicated by SGN.

Indicative costs

Reinforcement

SGN's preliminary assessment indicates this is not anticipated. Formal quotation required to confirm.

New Connections

TUC budget rebate to the developer of **£22,950** for 900x gas-heated units, using SGN low pressure connection point.



7. Openreach

Openreach is the local telecommunications company.

7.1. Existing Network

Based on the utility asset maps there are various overhead cables, underground ducts, chambers and other surface equipment in the vicinity of the site.

Figure 17 – Openreach existing network (Capstone Road area)



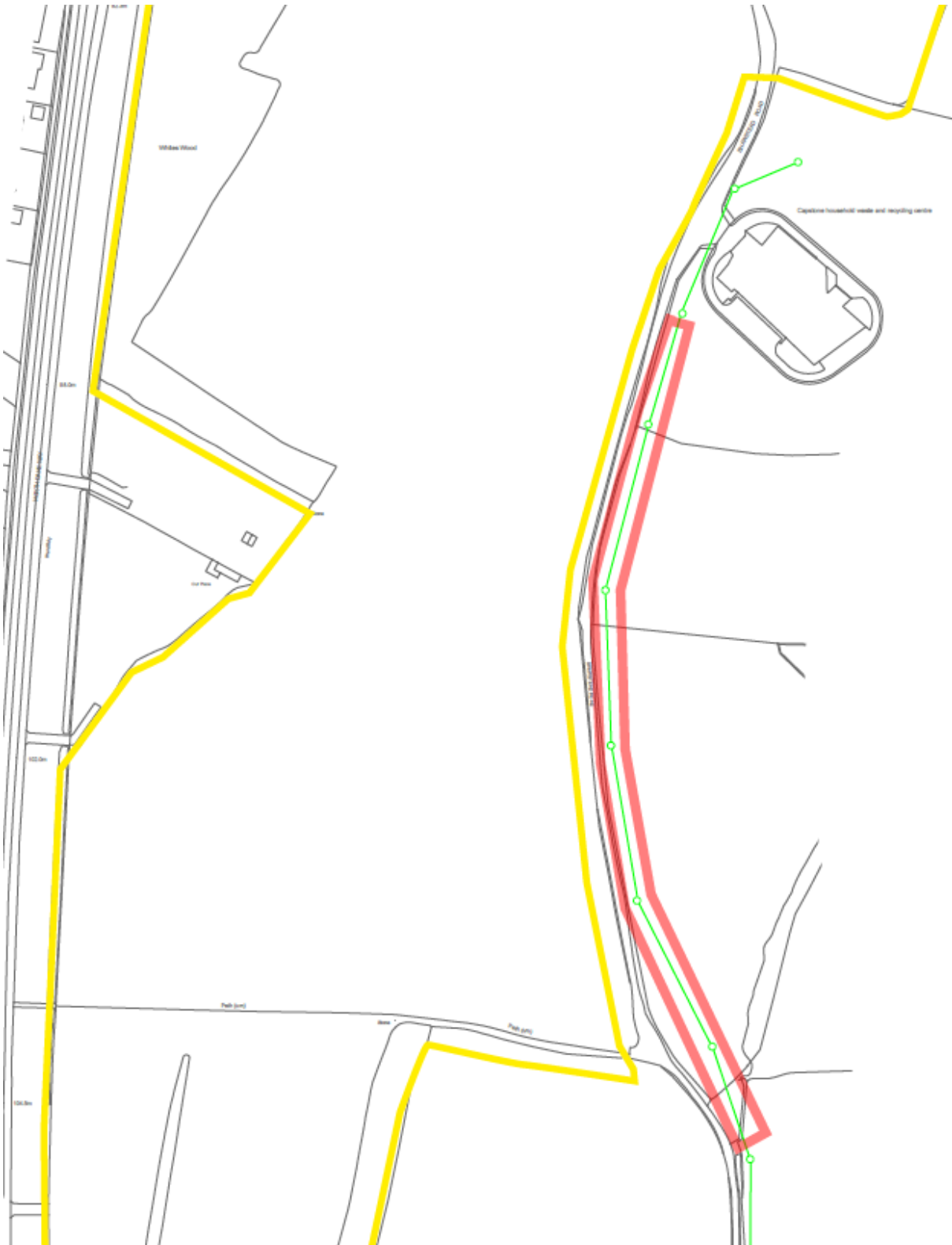
Source: PES PALM

A duct route is shown crossing the verge of the Capstone Road roundabout and heading south along Capstone Road. An overhead line is shown in parallel to the duct route but there was no obvious sign of this during the PES site visit.

A duct route is shown at the junction of North Dane Way and Shawstead Road but this does not appear to conflict with the site proposals.

An overhead line route is shown serving the recycling centre on Shawstead Road from the south. The PES site visit established that the overhead route actually stops at a pole close to where the public footpath crosses Shawstead Road, and then runs underground all the way to the recycling centre itself, where it returns to overhead poles for distribution to the buildings.

Figure 18 – Openreach overhead lines serving recycling centre (red area likely to be underground)



Source: PES PALM



Having reviewed the development proposals, diversion of the Openreach network may be necessary in Capstone Road. A PAS128 utility survey and trial holes are recommended in conjunction with evaluation of roundabout junction arm construction details. The underground cable serving the recycling centre should not be problematic unless it crosses Shawstead Road to the western side, where it could conflict with new entrances to the land parcels. A PAS128 utility survey and trial holes are recommended to check this.

Costs in Capstone Road could be high and further investigation is required.

To provide a C4 diversion estimate Openreach require a design fee of **£4,200 inc. VAT**, which at this stage you have yet to pay.

Indicative costs

Diversions

Diversions are likely in Capstone Road. Openreach require a cheque for **£4,200 inc. VAT** to provide a C4 diversion estimate. PAS128 utility survey and trial holes recommended, and also in Shawstead Road to locate cable marked wrongly as overhead on asset maps.

7.2. New Connections

Openreach will usually carry out any off-site works to bring their supply network to the site at no cost to the developer. However, if costs exceed £3400 per plot Openreach will charge the excess to the developer.

The on-site duct and joint box installation can be undertaken by the developer in accordance with standard Openreach design proposals and specifications. These works are carried out under contract to Openreach at a rate agreed by the House Builders Federation. These rates are currently set at £50 per flat and either £140 or £151 per house depending on the site location. Openreach will offer to provide new fibre to the premise (FTTP) services for all new sites that exceed 30 residential units.

The rebate for the residential element is expected to be **£109,800** based on 180x flats and 720x houses.

Indicative costs

New Connections

Rebate to the developer of **£109,800** based on 180x flats and 720x houses. Fibre to the premise (FTTP) available.

Based on the site postcode and BT's broadband speed checker, BT estimates the future broadband connection speed to be 1-4 Mbps. Fibre broadband is very likely to increase this.



8. Virgin Media

Virgin Media can provide phone, cable television and broadband services.

8.1. Existing Plant

Based on the utility asset maps there are various underground ducts, chambers and other surface equipment in the vicinity of the site.

Figure 19 – Virgin Media existing network in North Dane Way adj. southern land parcels



Source: PES PALM

No Virgin Media plant is shown near the Capstone Way roundabout, Shawstead Road or in most of North Dane Way. One duct route is shown at the North Dane Way/Shawstead Road roundabout but this does not appear to cross any areas of potential works.

Further south in North Dane Way there is a short section of Virgin Media ducts and chambers in the eastern verge. These were also located on the PES site visit. It is assumed that the access from the southern land parcels to North Dane Way on the masterplan is intended as foot access. If instead a junction is introduced here then diversions will be very likely.

To provide a C4 diversion estimate Virgin Media require a design fee of **£720 inc VAT**. If vehicle access is intended to North Dane Way, please advise if you wish to progress with the C4 diversion cost.



Indicative costs

Diversions

Not anticipated, unless access from southern land parcels to North Dane Way is vehicular rather than foot. If a vehicle entrance is proposed then Virgin Media will require a cheque for **£720 inc. VAT** to provide a C4 diversion estimate.

8.2. New Connections

Virgin Media has implemented strict financial controls for any new network projects. They do not guarantee to provide cable services to any site because each development is subject to a financial appraisal.

If the site passes the financial criteria then the developer, under contract to Virgin Media, can undertake the installation.

When the site is ready to proceed, Virgin Media will raise a business case proposal – this may include costs for the developer to bear.

Indicative costs

New Supplies

New connections possible. Further investigation required.



9. Independents

IDNOs, IGTs and multi-utility water and fibre networks.

9.1. GTC

GTC has confirmed that they operate an independent gas network near the junction of Capstone Road and Ash Tree Lane. This is not expected to impact the development.

Figure 20 – GTC gas network adj. Capstone Road



Source: PES PALM

Indicative costs

GTC

Diversions are not anticipated.

9.2. Energetics

Energetics has confirmed plant is not affected.

9.3. Other IDNOs/IGTs

ESP has confirmed that they operate an independent gas network some distance away from the site boundary near the junction of Capstone Road and Hopewell Drive. This is not expected to impact the development.

Indicative costs

ESP

Diversions are not anticipated.



10. Other

Various other statutory undertakers.

10.1. LinesearchbeforeUdig

AWE Pipeline, BOC Ltd, BP Exploration Operating Co Ltd, BPA, Carrington Gas Pipeline, CATS Pipeline c/o Wood Group PSN, Cemex, Centrica Storage Ltd, CLH Pipeline System Ltd, Concept Solutions People Ltd, ConocoPhillips (UK) Ltd, DIO (MoD Abandoned Pipelines), E.ON UK CHP Ltd, EirGrid, Electricity North West Ltd, ENI & Himor c/o Penspen Ltd, EnQuest NNS Ltd, EP Langage Ltd, ESSAR, Esso Petroleum Company Ltd, Fulcrum Pipelines Ltd, Gamma, Gateshead Energy Company, Gigaclear Plc, GTT, Humbley Grove Energy, IGas Energy, INEOS FPS Pipelines, INEOS Manufacturing (Scotland and TSEP), INOVYN Enterprises Ltd, Intergen (Coryton Energy or Spalding Energy), Mainline Pipelines Ltd, Manchester Jetline Ltd, Manx Cable Company, Marchwood Power Ltd (Gas Pipeline), Melbourn Solar Ltd, National Grid Gas and Electricity Transmission, Northumbrian Water Group, Npower CHP Pipelines, Oikos Storage Ltd, Orsted, Perenco UK Ltd (Purbeck Southampton Pipeline), Petroineos, Phillips 66, Premier Transmission Ltd (SNIP), Prysmian Cables & Systems Ltd c/o Western Link, Redundant Pipelines (Land Powers Defence Act 1958), RWEpower (Little Barford and South Haven), SABIC UK Petrochemicals, Scottish Power Generation, Seabank Power Ltd, Shell (St Fergus to Mossmorran), Shell Pipelines, SSE (Peterhead Power Station), TATA Communications c/o JSM Group Ltd, Total (Finaline, Colnbrook & Colwick Pipelines), Transmission Capital, Uniper UK Ltd, Vattenfall, Veolia ES SELCHP Ltd, Western Power Distribution, Westminster City Council, Wingas Storage UK Ltd, Zayo Group UK Ltd c/o JSM Group Ltd are not affected.

For UK Power Networks see section 3.1.

For SGN see section 6.1.

For ESP see section 9.3.



11. Communications

Telecoms, fibreoptic and mobile communications.

11.1. Vodafone Ltd

Atkins has confirmed Vodafone plant is not affected.

11.2. Colt

CA Telecom has confirmed Colt plant is not affected.

11.3. KPN

Instalcom has confirmed plant is not affected.

11.4. SKY Telecommunications

Sky has confirmed plant is not affected.

11.5. Interoute (inc 51 Degrees)

Plancast has confirmed Interoute plant is not affected.

11.6. SOTA

Instalcom has confirmed SOTA plant is not affected.

11.7. Instalcom (multiple co's)

Instalcom has confirmed CenturyLink Communications, Global Crossing UK, Global Crossing PEC, Fibernet UK and FibreSpan plant is not affected.

11.8. Verizon

Verizon has confirmed plant is not affected.

11.9. Vtesse Networks

Vtesse has confirmed plant is not affected.

11.10. TeliaSonera

Telent has confirmed TeliaSonera plant is not affected.

11.11. euNetworks

Desk research indicates euNetworks plant is not in the vicinity of the site.

11.12. SSE Telecoms

Desk research indicates SSE Telecoms plant is not in the vicinity of the site.

11.13. CityFibre

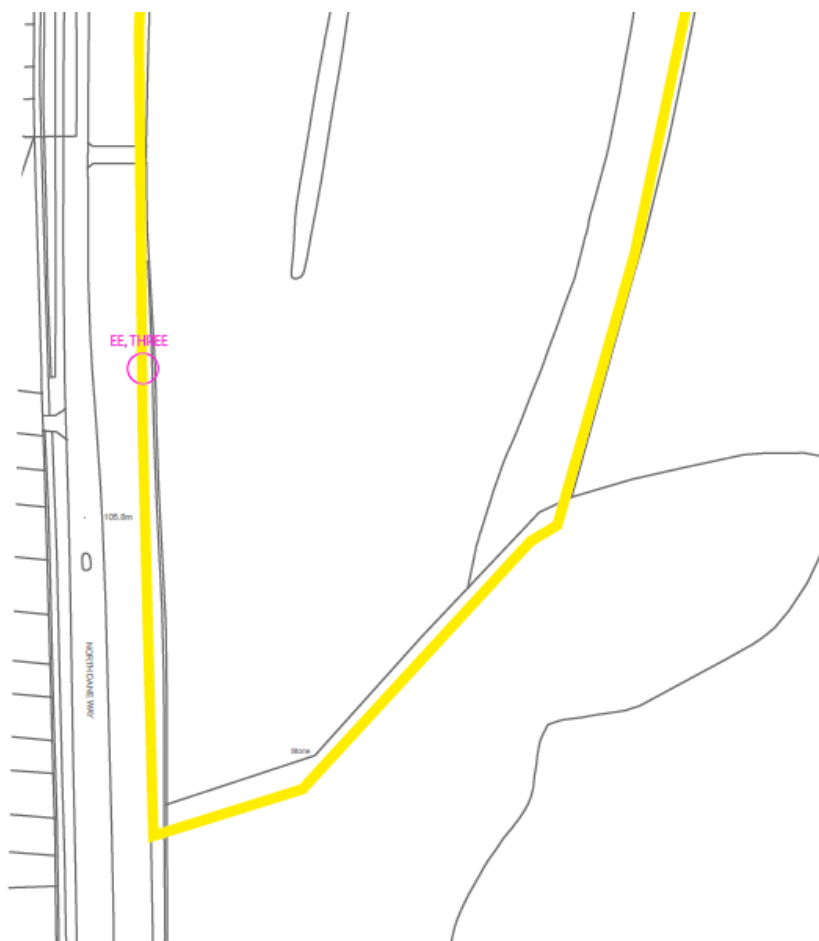
Desk research indicates CityFibre plant is not in the vicinity of the site.

11.14. Mast Data

A mobile mast base station operated by EE is in the vicinity of the site and we recommend that checks are made regarding possible easements/wayleaves etc. and health & safety issues.

The base station was not visible during the PES site visit, but could be within undergrowth or located some distance from the location shown by Mast Data as their records can be approximations. It is likely that the mast will be served by electric and Openreach service connections which may not be shown on utility asset maps.

Figure 21 – Approximate base station location near North Dane Way



Source: PES PALM



Indicative costs

Mast Data

Possible EE base station in North Dane Way. Further investigation required.



12. Tunnels & Pipelines

Underground structures linked to utility networks.

12.1. BT Deep Level Tunnels

Desk research indicates BT Deep Level Tunnels plant is not in the vicinity of the site.

12.2. Thames Water Ring Main

Desk research indicates that the ring main is not in the vicinity of the site.

12.3. Thames Tunnel

Desk research indicates there are no planned Thames Tideway Tunnel works in the vicinity.

12.4. Post Office Tunnels

Desk research indicates Post Office Tunnels are not in the vicinity of the site.



13. Transport

Road and rail plant networks.

13.1. Docklands Light Railway

Desk research indicates Docklands Light Rail is not in the vicinity of the site.

13.2. London Underground

Desk research indicates LUL plant is not in the vicinity of the site.

13.3. LUL HV Power Assets

Desk research indicates LUL HV Power Assets (the electricity cable network of the London Underground) are not in the vicinity of the site.

13.4. Crossrail

Desk research indicates Crossrail is not in the vicinity.

13.5. Network Rail

Unless the site is adjacent to the railway line Network Rail will not respond. Desk research shows this site is clear of the line.

13.6. Transport for London

Desk research indicates TfL plant is not in the vicinity of the site.

13.7. Trafficmaster

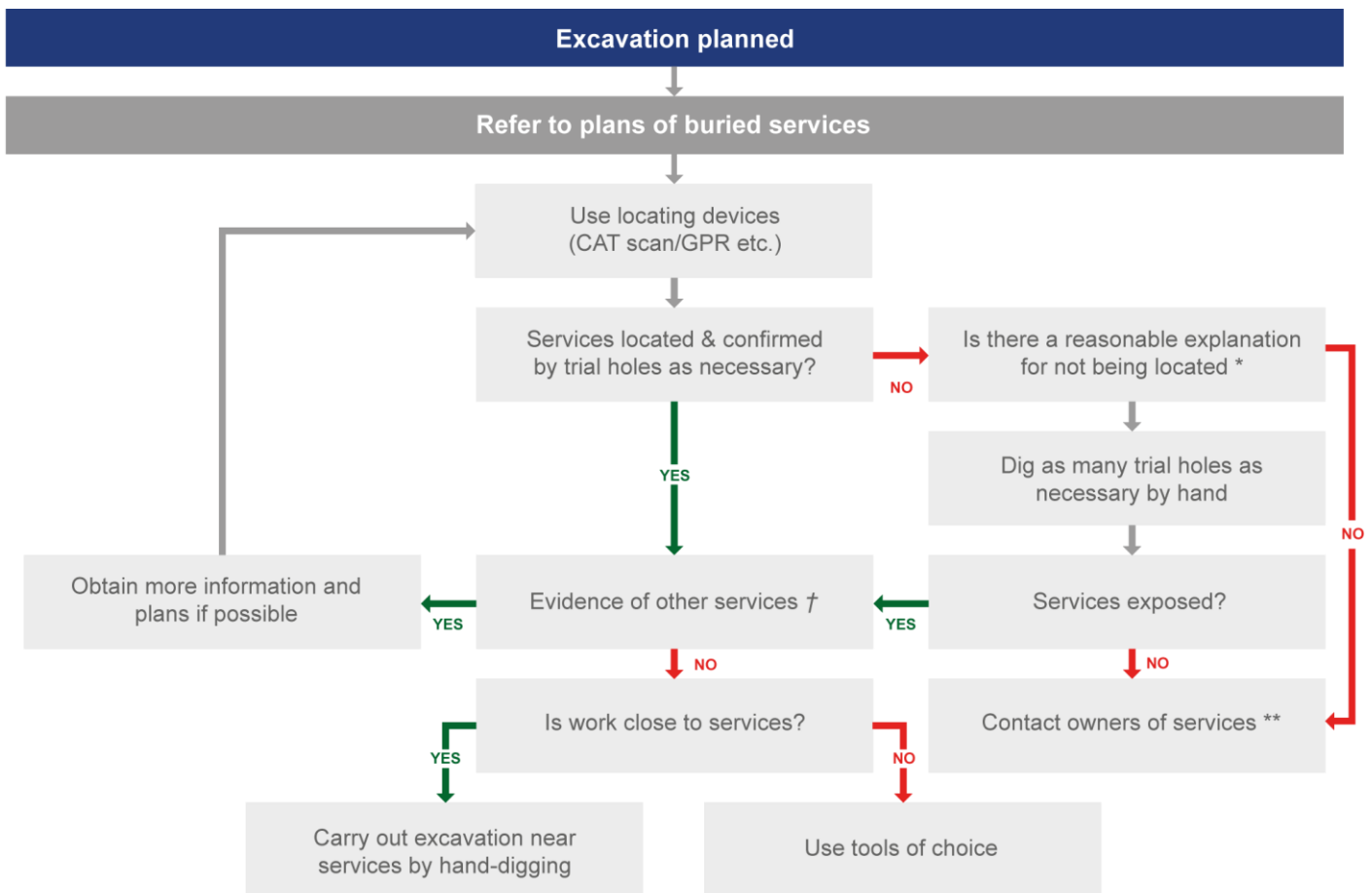
Desk research indicates Trafficmaster apparatus is not in the vicinity.



14. Important Information

This flow diagram is intended to help give an understanding of the process from referring to plans on-site through to the start of excavation, for example when excavating in a road or footway. However it:

- Describes only part of the process; it does not, for example, describe planning the work, including reference to plans at the design stage;
- Is a simplified picture and not a substitute for reading the text;
- Is not a substitute for a suitable and sufficient risk assessment;
- Does not take account of a number of other situations, e.g. cable embedded in concrete or those situations where resiting services is proposed.



* For example, could services be non-metallic pipes? Please refer to HS (G) 47 text for further information.

† In particular; visual evidence. Ensure that the presence of services, which may be unmarked on plans or for which no plans are available, has been considered, for example service connections.

** If there is visual evidence of services, but owners cannot be traced, despite all reasonable attempts to do so, any excavation could proceed but using hand-dug trial holes and proceeding with great care.



14. Important Information

Relevant Documents

The following documents must be referred to before work commences in the vicinity of existing services:

- Health and Safety Booklet HS (GS) 6 Avoidance of Danger from Overhead Electric Lines.
- General Safety Measures to Avoid Injury and Damage to Gas Apparatus.
- HSE Guidance Note HS (G) 47 Avoiding Danger from Underground Services.
- National Joint Utilities Group (NJUG) Publications Vol. 1.
- CDM Regulations 2015.
- PAS 128:2014 Specification for Underground Utility Detection, Verification and Location.

Basic Risk Assumption for all Services

When dealing with existing services the following assumptions must always be accepted:

- All existing buildings have gas, water, electric and telecoms supplies to them until proven otherwise.
- Any supply to an existing building, no matter how old the building is or how deteriorated the supply may appear, is taken to be live until proven otherwise.
- All open land, vacant lots and derelict sites are deemed to have services beneath them until proven otherwise.
- The only acceptable proof that a service is dead and can be removed is written confirmation from the owner of the service.
- The quality and accuracy of information provided by utilities about their existing plant is indicative and no warranty is made as to its accuracy. Therefore, any utility asset maps and/or marked up drawings provided by each utility must only be used as a guide and the actual location of plant should be verified by PAS128 survey or trial holes before construction works commence.

Please note not all service connections are shown on the utility asset maps.

Plant Found Within Site Boundaries

Where utility plant is found within the site boundary, it is recommended for the client to check for legal easements or wayleaves.

Diversions of plant within site boundaries can be expensive and time consuming to relocate. Further investigation of costs and timescales are recommended. Please ask PES for further details.



15. Enclosures

Type	Company	In Vicinity	Desk Research	Awaiting Response
Electricity	UK Power Networks			
Water	Southern Water			
Drainage	Southern Water			
Gas	SGN			
Openreach	Openreach (formerly BT)			
Virgin Media	Virgin Media			
Independents	GTC			
	Energetics			
	ESP			
Comms.	Vodafone Ltd			
	Colt			
	KPN			
	SKY Telecommunications			
	Interoute			
	SOTA			
	Instalcom (multiple co's)			
	Verizon			
	Vtesse Networks			
	TeliaSonera			
	euNetworks			✓
	SSE Telecoms			✓

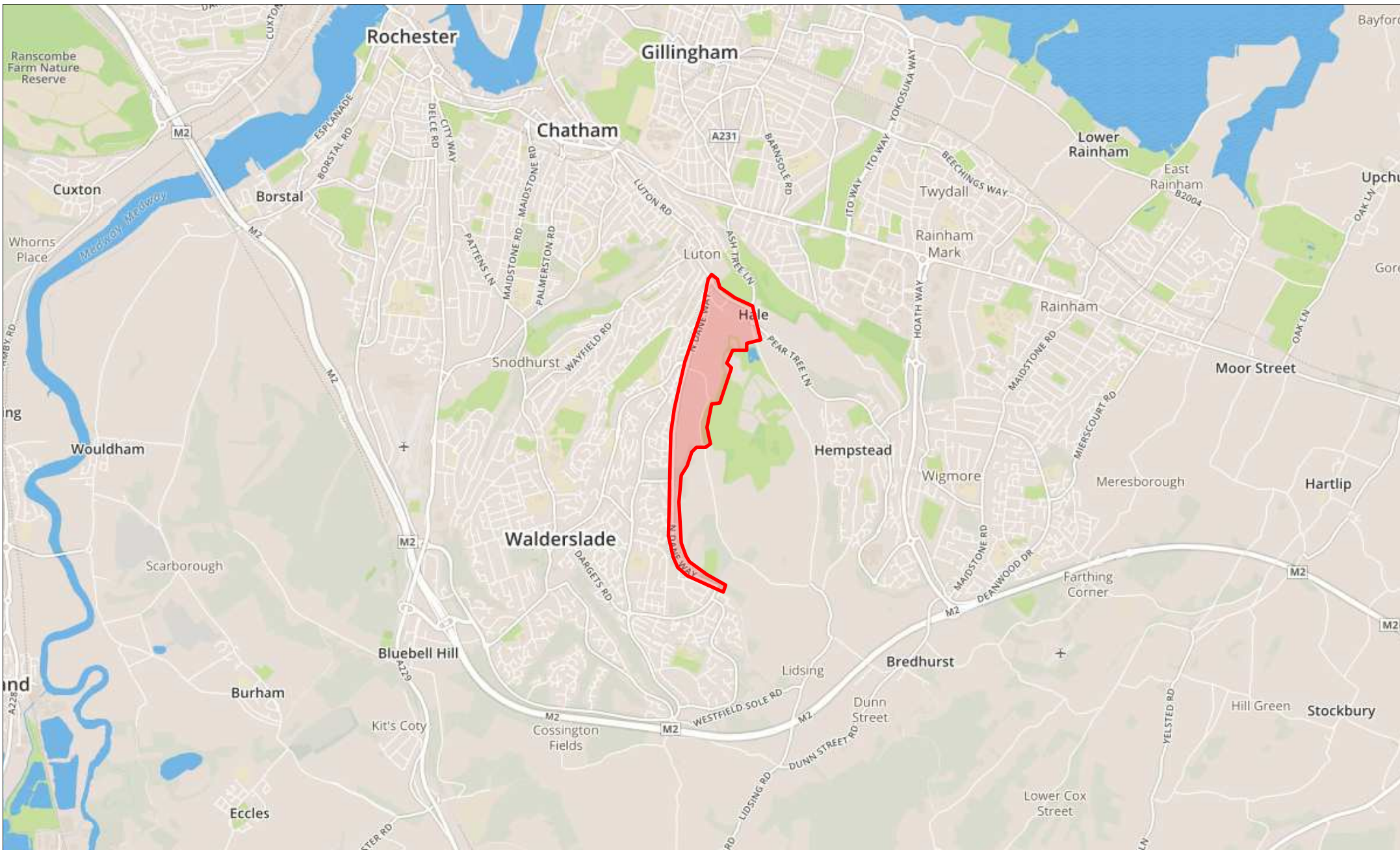


	CityFibre		✓
	Mast Data		
Tunnels & Pipelines	LinesearchbeforeUdig		
	BT Deep Level Tunnels		✓
	Thames Water Ring Main		✓
	Thames Tunnel		✓
	Post Office Tunnels		✓
Transport	Docklands Light Railway		✓
	London Underground		✓
	LUL HV Power Assets		✓
	Crossrail		✓
	Network Rail		✓
	Transport for London		✓
	Trafficmaster		✓



16. Acronyms Key

Apparatus			
Electric			
DNO	Distribution Network Operator	kVA	Kilo Volt Amperes
IDNO	Independent Distribution Network Operator	MVA	Mega Volt Amperes
ICP	Independent Connections Provider	AC	Alternating Current
LV	Low Voltage	S/S	Substation
HV	High Voltage	PMT	Pole Mounted Transformer
EHV	Extra High Voltage		
Water			
SLO	Self Lay Organisation	WRAS	Water Regulation Advisory Scheme
Incumbent	Local Water or Water & Sewerage Company		
Gas			
GDN	Gas Distribution Network	LP	Low Pressure
IGT	Independent Gas Transporter	MP	Medium Pressure
UIP	Utility Infrastructure Provider	IP	Intermediate Pressure
PRS	Pressure Reducing Station (Governor)	HP	High Pressure
Others			
PES	Premier Energy Services	CATV	Cable Television
PE	Polyethylene	FTTP	Fibre to the premise
DI	Ductile Iron	FTTC	Fibre to the cabinet
ST	Steel	l/min	Litres per minute
CI	Cast Iron	H&S	Health & Safety
SI	Spun Iron	HBF	House Builders Federation
HPPE	High Performance Polyethylene	TPO	Tree Preservation Order
MDPE	Medium Density Polyethylene	TBC	To be confirmed
GRP	Glass Reinforced Plastic	N/A	Not Applicable
PADHI	Planning Advice for Hazardous Installations		

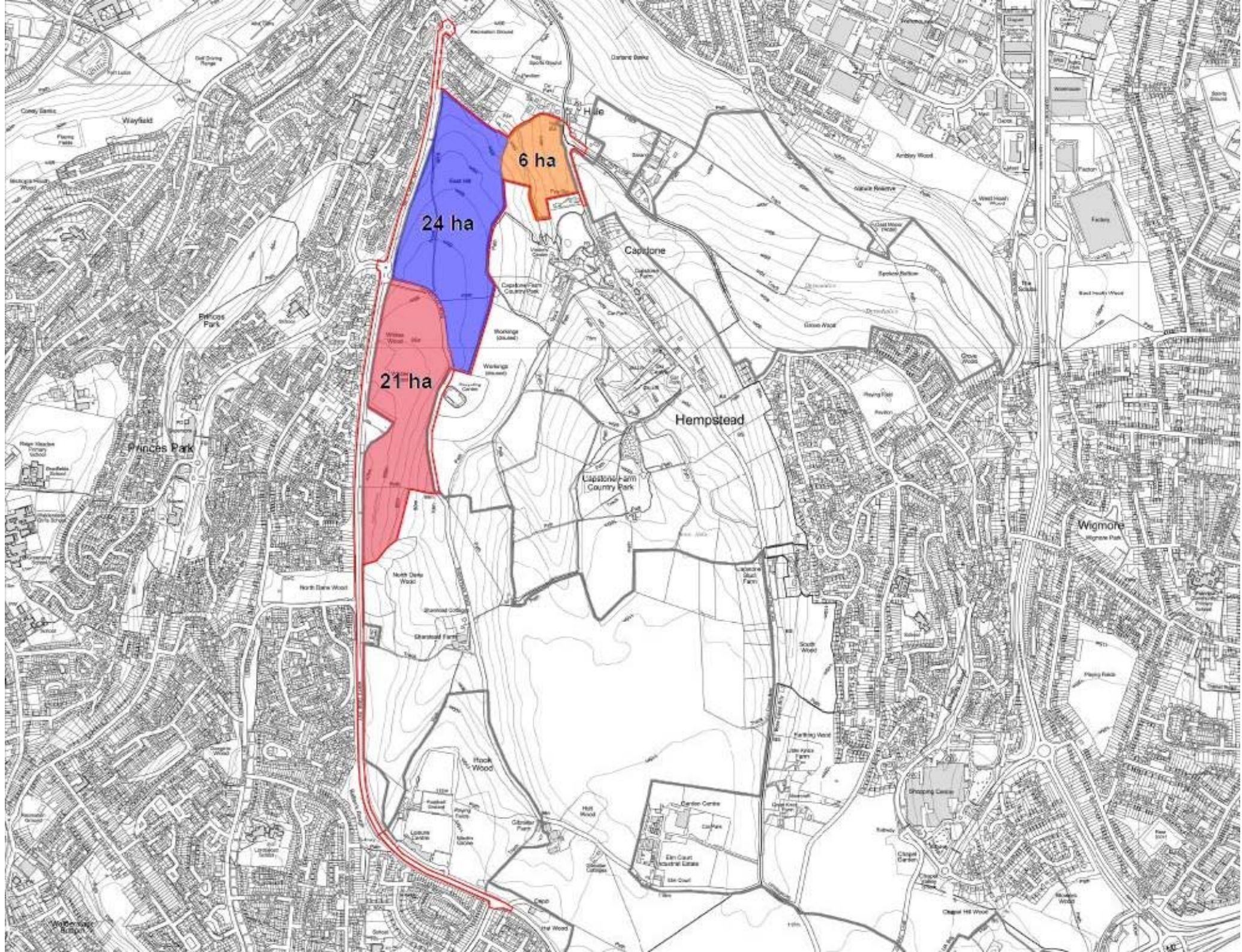


Request Ref: 503965

North Dane Way , Gillingham, Kent, ME5 8JZ
Eastings 577505, Northings 164637

Imagery sourced from Open Street Maps

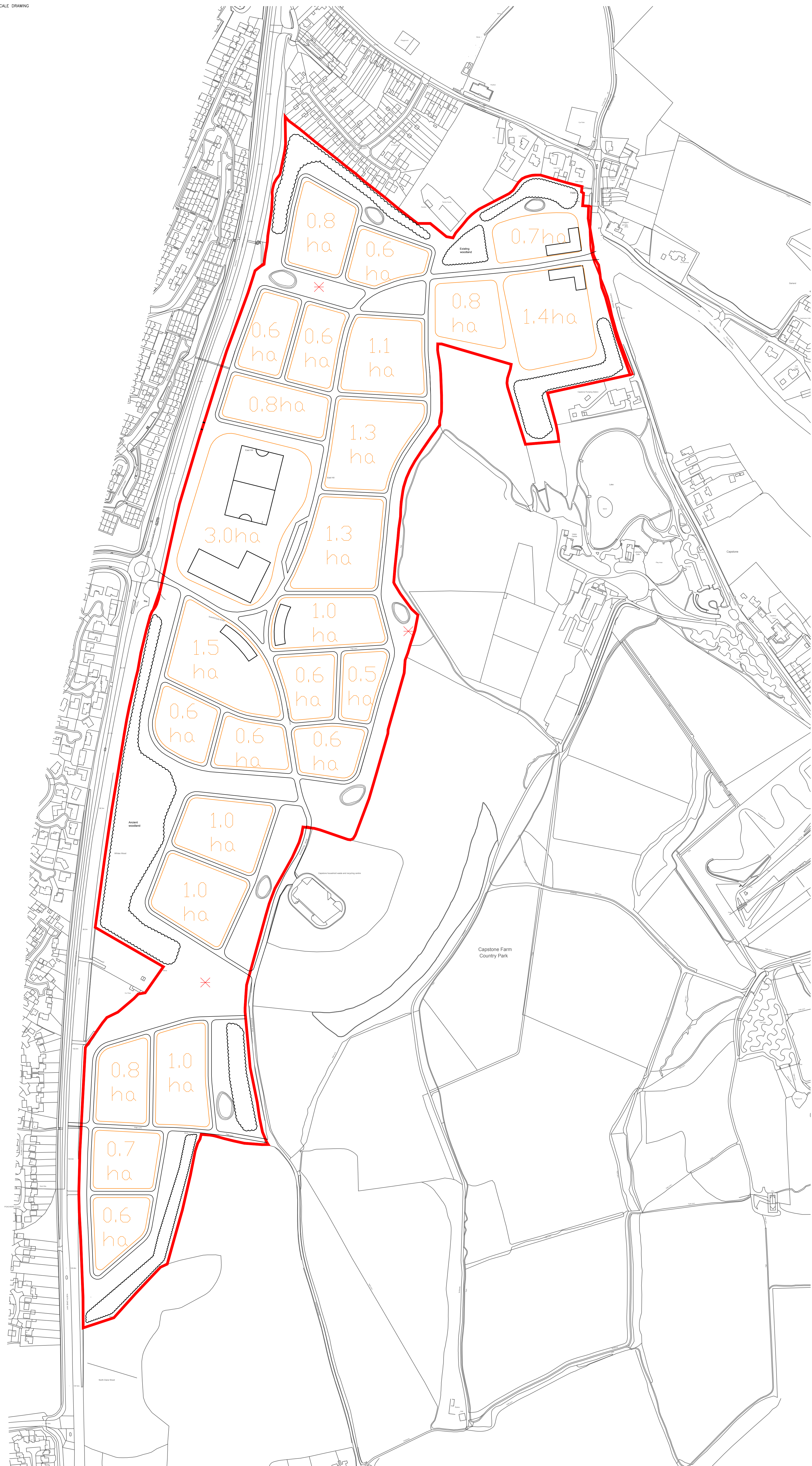




24 ha

6 ha

21 ha



Total Area (including commercial) = 20.5 ha

Total Area (including commercial & school) = 23.5 ha

✕ = LEAP



chartered architects and planning consultants

Lee Evans Partnership LLP,
Canterbury, St Johns Lane, Canterbury, Kent CT1 2QD Tel: 01227 784444
London: 31-35 Kirby Street, London EC1N 8TE Tel: 0207 492 1744
email: architects@lee-evans.co.uk website: www.lee-evans.co.uk fax: 01227 819102

PROJECT
Capstone, Medway : Master Planning

CLIENT
Kevin Attwood

DATE
25/06/2018

DRAWING TITLE
DRN + CKD

ISSUE STATUS
MK

SCALE
1:2500 @ A1

DRAWING NUMBER
REVISION

08284- Masterplan Sketch 1st

Our Ref: 13536794 Your Ref: North Dane Way

Friday, 17 August 2018

Liam English
Premier House Daux Road
Billingshurst
West Sussex
RH14 9SJ

Dear Liam English

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.

