

P e l l F r i s c h m a n n

The Kingsfields, Land to the West of Cambourne

UTILITIES CONSTRAINTS REPORT

Date: December 2021
PF Report Ref: 104677 – USR-001

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The Kingsfields, Land to the West of Cambourne
UTILITY CONSTRAINTS REPORT
104677 – USR–001

REVISION RECORD Report Ref:

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Contents

1.	Background	1
2.	Existing Utility services	3
2.1	Introduction	3
2.2	Gas	3
2.3	Electricity.....	3
2.4	Telecoms.....	4
2.5	Water	5
2.6	Foul and Surface Water Drainage	5
2.7	Other Utilities.....	6
3.	Summary.....	8
4.	Services Present in the Development Boundary	10
5.	Recommendation for Further Assessment	11

Appendices

Appendix A – Existing Utility Services and Constraints Drawing

Appendix B – HSE Major Hazard Site Check

1. Background

Pell Frischmann (PF) have been commissioned by the Church Commissioners for England (CCfE) to undertake a review of the existing utilities present within the vicinity.

This report considers Statutory Undertakers services surrounding and within the proposed site boundary. It identifies the nature of the service and the assumed ownership and sets out the next steps for engagement with SUs to agree diversions, reinforcement and connections.

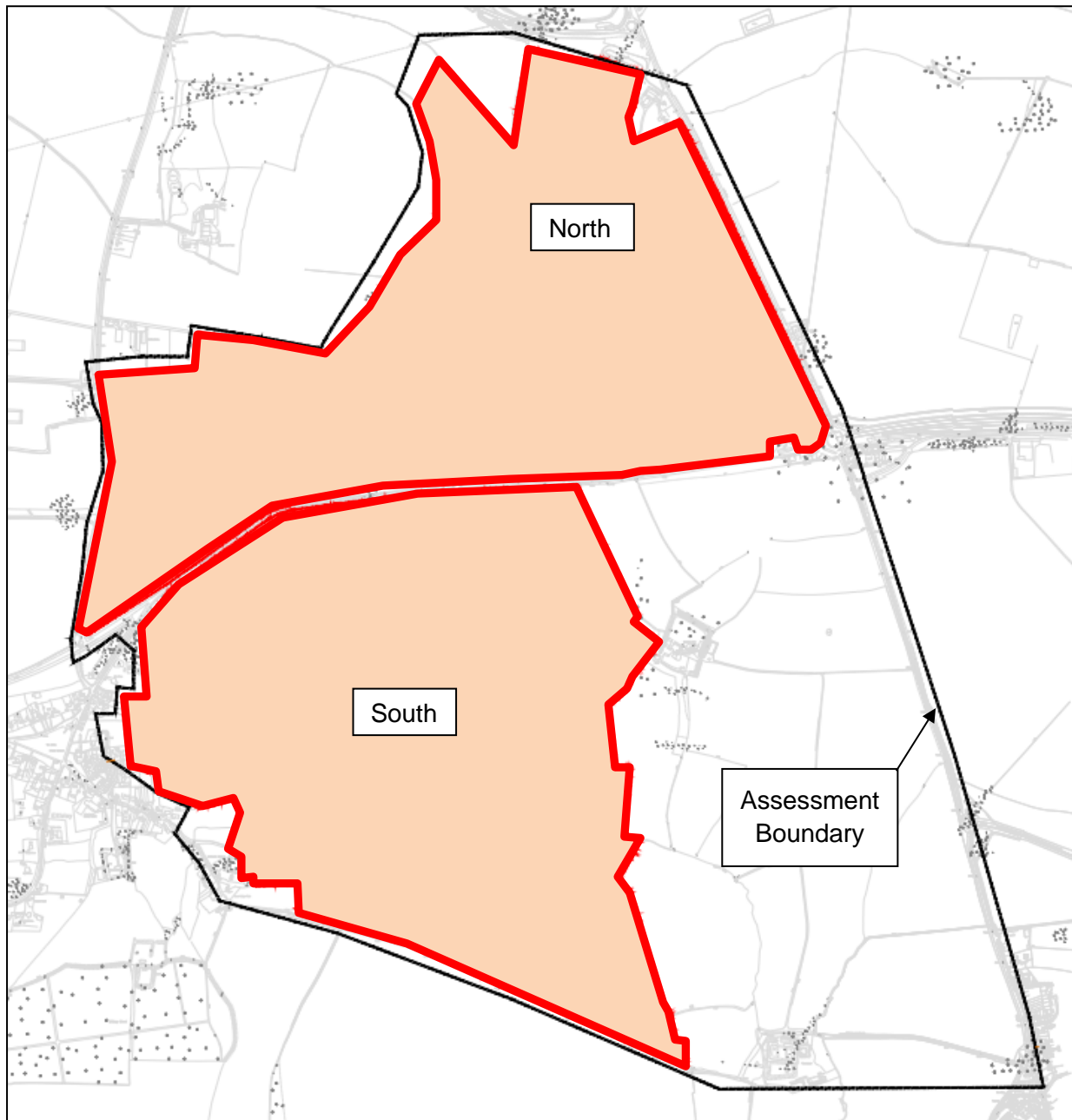
The approximate centre of the site is located at grid reference 528889, 260531. The nearest postcode is CB23 3PD. The site is approximately 400ha and is split into two distinct parcels of mainly agricultural land, north and south of the A428. The current proposed masterplan is residential but also includes some commercial and education land use. The existing A428 is a single carriageway road with a speed limit of 60mph at this point. Existing accesses off the A428 are limited to the Caxton Gibbet junction to the east and The Eltisley A1040 St Ives to the West. Only local farm accesses are currently provided between these key junctions.

The Northern Parcel is edged by Ermine Street (A1198) to the east and the B1040 St Ives Road to the west. Both are single carriageway roads with very limited footway/NMU integration. There are no evident speed limits on these roads, but it is assumed they are 60mph.

The Southern Parcel is not connected to the public highway from the east and is limited for any connection by farmland and Pastures Farm. The west side is edged by A428 on the north west corner. Caxton End and Caxton Drift are local roads which run along part of the western boundary of the site. The south eastern corner of the south parcel falls within the Approximate Safeguarded Area for East West Rail.

The site location and parcel extents are shown below in Figure 1.1.

Figure 1.1



The outline above provides a contextual scope for the assessment. The outlines in the above do not necessarily represent development boundaries only assessment boundaries. As part of the assessment PF have obtained Statutory Undertakers record information (C2's) showing services located within the vicinity of the development area.

PF have also engaged with the Health and Safety Executive 'HSE' to identify any strategic routed hazardous services which transverse the site and would influence the emerging masterplan.

2. Existing Utility services

2.1 Introduction

This report is based on record drawings obtained from Statutory Undertakers (SUs). It should be noted that record drawings are considered inaccurate and are frequently out of date, as such they should be used as first assessment only. Where recent changes and developments have resulted in diversions, relocation or reinforcements to distribution these are sometimes not reflected in utility plans.

A composite plan showing existing utility information is provided in Appendix A.

Easements have been shown based on typical SU requirements and PF experience. Full details of easement extents should be confirmed by the relevant service owner. Note there are likely to be existing easements or wayleaves in place where main services cross private land. Services in adopted roads do not require easements.

It should also be noted that private services which may be running across the site are not necessarily picked up in our assessment as they may not be shown on Statutory Undertaker drawings.

2.2 Gas

The principal gas transporter for the area is Cadent Gas. There are gas distribution networks provided by ESP Utilities and GTC to neighbouring developments east of the Ermine Street A1198.

North

No gas mains are indicated on records within the parcel boundary provided as part of the utility search enquiry.

South

No gas mains are indicated on records within the parcel boundary provided as part of the utility search enquiry.

2.3 Electricity

The Electrical supplies in the area are provided by UK Power Networks (UKPN), GTC, Utility Assets and ESP Utilities.

North

Within the site boundary and in the immediate vicinity there are underground and overground cables present, mainly owned by UKPN. The cables vary in voltage between 230V Low Voltage (LV) and 33kV High Voltage (HV).

There is an UKPN overhead (OH) 33kV HV cable on pylons present at a point just outside of the most north western boundary corner. There were no other 33kV cables present in the records received.

The majority of the HV in the study area are OH 11kV HV cables on poles, these are present in various locations in the northern parcel;

- Along the northern boundary
- Along the western boundary running adjacent to Northeast Farm toward Cambridge Road (A428)
- There is a cable running between the western boundary and Ermine Street (A1198) at the eastern boundary, this cable is running through/adjacent to Northeast Farm and Pembroke Farm. This cable also connects to an OH 11kV HV cable in Ermine Street (A1198). This cable also branches south at a point just east of Pembroke Farm.

There is an underground 11kV HV cable running along the eastern site border in Ermine Street (A1198)

There is an underground LV Cable in the north of the site providing connections to Crow's Nest Farm and a telecommunications mast.

There are also various LV service cables providing connections to existing properties within the parcel.

South

There is a UKPN substation present at Ermine Street (A1198) junction with St Peter's Lane. Power services are predominantly owned by UKPN.

There is an OH 11kV HC cable on poles running from the substation along Eltisley Lane past "The Moats" then along bridleway 74/1, the service is shown to slightly cut over the boundary corner. This service then runs north west toward Cambridge Road (A428) before the bridleway exits to Caxton Drift. There are 11kV services connected from this toward Jesus College Farm and toward Caxton End.

From the northern parcel at a point just east of Pembroke Farm there is an OH 11kV HV cable on poles passing over Cambridge Road (A428) connecting Pastures Farm.

GTC have also provided record of an underground 11kV HV cable in Ermine Street (A1198) from the Ermine Street Roundabout south past the sub-station, it is believed this service connects to new neighbouring developments to the east.

2.4 Telecoms

Communications in the area is provided by BT Openreach (BT), Virgin Media (VM) and Vodafone (VF).

North

The majority of the telecommunications cables are within the roads around the perimeter of the parcel. There are BT OH and underground cables present in Ermine Street (A1198) along the eastern boundary and there are also underground VM cables shown here.

There is a VM cable shown to enter the site boundary at the south eastern corner of the northern boundary at a point just north and east of roundabout at Cambridge Road (A428).

There is also BT OH and underground cables present in St Ives Road B1040 to the west.

In between the northern and southern parcel, along Cambridge Road (A428) there are underground BT, VM and VF cables.

A mobile phone mast is indicated towards the centre of the North development area.

South

There are underground BT cables along in Ermine Street (A1198) from which a service branches to Pastures Farm.

There are also OH BT cables and underground cables in Ermine Street (A1198) at the junction with St Peter's Lane and at the south western boundary in Caxton End and Caxton Drift.

2.5 Water

The water distribution is provided by Cambridge Water.

North

There is a 250mm Ø AC (Asbestos Cement) water distribution pipe in Ermine Street (A1198) along the eastern boundary.

There is a 3" Ø AC water distribution pipe in St Ives Road at the western boundary.

There is a 4" Ø AC water distribution pipe in Cambridge Road (A428) between the north and south parcels.

South

There is a 6" Ø uPVC water distribution pipe in Ermine Street and there is also a 3" Ø AC water distribution pipe shown in Caxton End at the south western boundary.

2.6 Foul and Surface Water Drainage

The sewerage is provided by Anglian Water.

There are no surface water sewers shown within the parcels, however the parcels have several ditches, watercourses and land drains which are assumed to serve existing properties within

the site. It is understood a number of these will be maintained and incorporated within the emerging masterplan.

North

In the north, an unnamed watercourse flows north past North East Farm before flowing west beneath the B1040 (St Ives Road). The upper reaches of the watercourse extend as far as the A428, serving a land drainage function. Along the eastern boundary, a watercourse runs parallel to the A1198, which then flows north around the western edge of Papworth Everard. There are also a number of small open waterbodies around North East Farm and Pembroke Farm, some of which are for irrigation and others appear ornamental.

A reservoir is indicated to the west side of the development area but this is not on the utility drawings and no connecting pipework is indicated so is assumed to be a private facility for the adjacent farm.

There is a 4" Ø PVC foul rising main in St Ives Road along the western boundary.

South

Within land to the south of the A428, the Eastern Brook appears to have its source near Caxton End at the southern extent of Eltisley. The watercourse flows to the east and is joined by several smaller tributaries that appear to serve a land drainage function, before eventually converging with the Bourn Brook before flowing through the village of Caxton. Immediately to the east, a number of other smaller tributaries are present around Pastures Farm.

There is a 50mm Ø PVC foul rising main and a 150mm Ø AC foul sewer in Caxton End south of the southern parcel. There is a sewage treatment works and pumping stations just outside of the southern site boundary.

There is also a 6" Ø VC foul sewer in Ermine Street (A1198) serving properties along the frontage.

2.7 Other Utilities

The proposed development site was checked for major hazards with the Health and Safety Executive (HSE) to identify any strategic routed services which transverse the site and would influence the emerging masterplan. The development site does not currently lie within the consultation distance (CD) of a major hazard site or major accident hazard pipeline and at present the HSE does not need to be consulted on any developments on this site. However, consultation distances may change, and should there be a delay submitting a planning application for the proposed development site, it may be appropriate to approach the HSE again to ensure that there have been no changes in the intervening period.

The Environment Agency have highlighted via email communication a possible requirement to obtain an environmental permit to carry out work in vicinity to a main river, flood or sea defence.

Utility Assets will only provide record drawings if they have apparatus within the area of the works and do not provide confirmation that they are not unaffected. At this stage we assume that Utility Assets are therefore unaffected.

The Kingsfields, Land to the West of Cambourne
UTILITY CONSTRAINTS REPORT
104677 – USR–001

Although Cambridgeshire County Council have said they are affected, a review of information provided does not show any apparatus (Street Lighting, Bollards, Signals or Gullies) within the development boundary. As the external works and interaction with the existing highway develops alongside the masterplan the full implications of the effect on the highway will be established.

The following Statutory Undertakers have confirmed that they are unaffected by the potential development of the area, however this does not at this stage discount the possibility of future services reinforcement to serve the development:

- C.A. Telecom UK
- Cadent Gas
- CityFibre
- Instalcom
- Last Mile
- Network Rail
- SKY Telecom Serv.
- Telent
- Verizon

3. Summary

Gas:

There is a gas supply in the area to neighbouring developments however there appears to be no gas recorded within either of the parcel boundaries.

Given the proposed scale of the and the lack of existing gas services within the site boundary, if a new supply is required it will be an entirely new service and reinforcement to the network is likely to be required. (Note, currently there are Government plans to ban the use of fossil fuels in residential developments after 2025).

It should be noted that proposed gas mains will require a clear corridor with no buildings or structures within 3m either side unless installed within road and footpath areas in accordance with NJUG recommendations.

Electricity:

Most of the electricity supply in the parcel boundaries is OH 11kV HV on poles although there are also underground LV cables present.

As there are limited services shown within the site boundary and given the scale of the north and south developments, it is likely new services and reinforcement will be required.

Underground HV cables will need a clear corridor/easement or will need to be diverted. If the existing properties supplied by OHLs are to be retained, they will also require a clear corridor/easement where they cross land under other ownership. This is normally 3m on either side. Any future developments would need to consider the cables in private land and any easements into a proposed layout. Details of existing easements are to be confirmed with the asset owner and details are to be obtained by the legal representatives as the design develops.

Telecoms:

There are communications cables in the surrounding roads, area and to farms provided by BT Openreach, Virgin Media and Vodafone. However, there are limited services within the parcel boundaries.

There is a VM cable at the south eastern corner of the northern boundary and an underground and overhead BT cable providing a service to Pastures Farm. If existing properties (ie Pastures Farm) are to be retained any OH cables would need to be considered in the development masterplan or diverted underground.

It is unclear as to the exact nature of each of the telecoms provider's apparatus and it should be noted that this apparatus may contain fibre optic, coaxial and/or power cables. As such, special care must be taken when excavating nearby such cables, all excavation adjacent to apparatus is to be carried out by hand under supervision until the exact extent and/or location of apparatus is known.

There is an existing mobile phone mast indicated which would need to be retained or relocated with the agreement of the operator.

Telecoms providers will need to provide new connections to serve the development.

Water:

Although there is a water distribution network in the surrounding roads and to neighbouring developments, there are no water mains present within the parcel boundaries.

As there are limited services shown within the site boundary, new services and some reinforcement is likely to be required for a major development of this size.

Existing water distribution pipes around the boundary borders will need a clear corridor/easement where they transgress the site boundary or will need to be diverted if they run into the development area. Typically, easements are 3m on either side, details of existing easements are to be confirmed with the asset owner and details are to be obtained by the legal representatives as the design develops. Any future developments would need to consider water distribution pipes in private land and any easements into a proposed layout.

Foul and Surface Water Drainage:

There are no surface water or foul water sewers shown within site boundary. However there is a network of surface water ditches and land drains which are assumed to serve existing properties on the site. It is understood a number of these will be maintained and incorporated within the emerging masterplan. A future development will likely be expected to drain via infiltration methods using SUDs. The local flood authority is likely to only expect run off which matches greenfield rates as such attenuation will be required.

It is assumed that given the scale of the development a new connection and reinforcement of the existing external foul drainage is likely to be required.

For existing sewers around the border of the parcel boundaries, an easement will be required if they cross the development land. For proposed sewers, unless they are to be located within publicly maintainable highway or subject to a S104 agreement, they will require easements.

The easement widths will vary depending on diameter of the pipe. Easements should be centred on each sewer and be clear of development (hardstanding is usually permitted). Typically, easements are 3m on either side, details of existing and proposed easements are to be confirmed with the asset owner and details are to be obtained by the legal representatives as the design develops. Any future developments would need to consider existing sewers in private land and any easements into a proposed layout.

4. Services Present in the Development Boundary

North

- Electricity;
 - Low Voltage Underground Cables (UKPN)
 - HV 11kV OH Cables (UKPN)

South

- Electricity;
 - Low Voltage Underground Cables (UKPN)
 - HV 11kV OH Cables (UKPN)

South Extended Parcel Boundary

- Telecoms cables Underground and overhead (BT Openreach)

5. Recommendation for Further Assessment

Once the masterplan is sufficiently developed it will be necessary to progress discussions with all Statutory Undertakers with apparatus affected by the proposed development. This will be required to undertake the necessary diversion, protection and disconnection works should this be necessary for the development proposals.

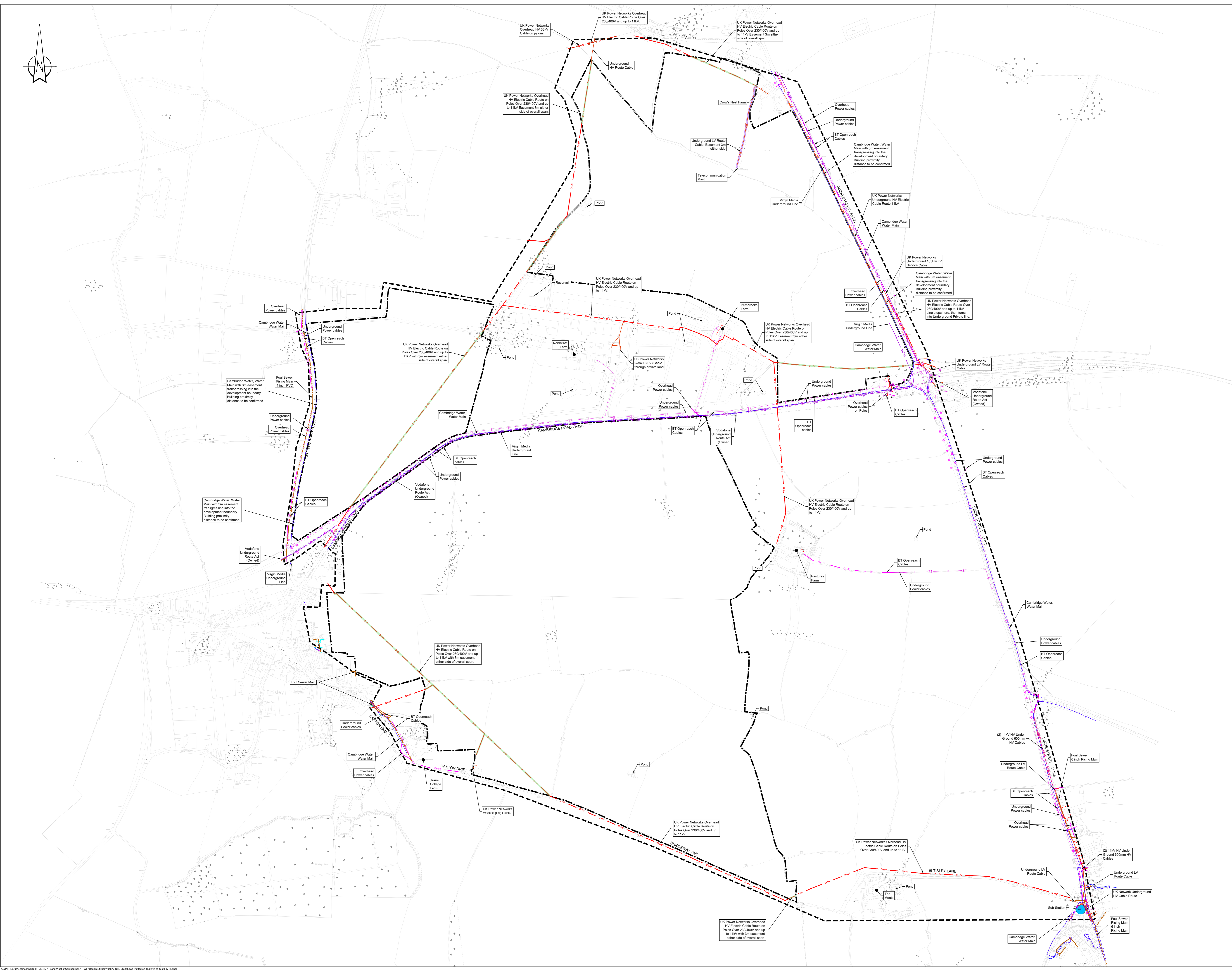
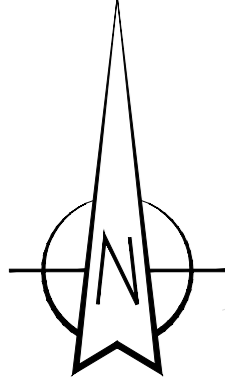
This would also include an assessment of the required development loads to begin applications for proposed utility connections to determine the approximate connection costs.

Pell Frischmann could complete both assessments and provide preliminary cost estimates for both diversionary works and the proposed site connections following liaison with all Statutory Undertakers.

We understand that Highways England have carried out consultation on major improvements to the A428 which currently splits the North and South sites. These improvements are known as 'Black Cat to Caxton Gibblet improvements'. As highlighted by our assessment a number of services currently run down alongside the existing A428, we need to ensure we are aware of how these services are diverted or rerouted.

Appendix A – Existing Utility Services and Constraints Drawing

104677-UTL-SK001 - Existing Utility Services and Constraints Drawing



- NOTES:**
1. Where the Contractor Undertakes or engages a third party to undertake temporary works design, or varies the Peil Frischmann design in any way, then the Contractor will take full responsibility and liability for all design aspects, including a design risk assessment. The Contractor shall inform Peil Frischmann of any proposed variations to the design.
 2. This drawing shall be read in conjunction with all other electrical, mechanical, public health & architectural drawings & the specifications.
 3. Easements are only shown within the development boundary and are shown individually, all easements are to be confirmed with asset owner as the design develops.
 4. Details of the existing easement are to be obtained by the legal representatives.
 5. Proposed services to be installed part of the development will also require easements to be factored into a masterplan, the easement will depend on size and depth of pipes and cables.
- DISCLAIMERS**
6. This drawing is an amalgamation of Statutory Undertaker information derived from record drawings. This drawing cannot be relied upon for accuracy. The size, material & depth of all buried services are not shown on this drawing. Such information must be obtained from record drawings or intrusive investigations.
 7. It is essential that any Statutory Undertaker enquiries are undertaken by the contractor prior to any construction works, cableage detection techniques, trial holes or other similar methods must be adopted by the contractor to verify this drawing and any subsequent plans obtained from Statutory Undertakers.

- KEY:**
- Development Boundary
 - Utility Search Boundary
- Anglian Water**
- Foul Water Sewer
 - Surface Water Sewer
- Cambridge Water**
- Water Main
- GTC Network**
- 11kV HV Under Ground 600mm Cable
- Openreach - British Telecommunications**
- Underground BT Cables
 - Overhead BT Cables
- Virgin Media**
- Duct, Trench
- Vodafone - Telecommunications**
- UG Route, Route Act
- UK Power Networks**
- Overhead 11kV HV Cable Route
 - Overhead 33kV HV Cable
 - Underground 11kV HV Cable Route
 - Underground LV Route
 - UK Power Service UG Lines
 - UK Power Networks - Substation
- Cambridgeshire County Council**
- Street Lights
- Easements**
- Electrical Cable Easement 3m either side
 - Overhead Line Easement 3m either side of overall span
 - Watermain Easement 3m either side

REV	DESCRIPTION	DRN	CHK	APP	DATE

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Client: **Church Commissioners for England**

Project: **Land West of Cambourne**

Drawing Title: **Existing Utilities Plan**

Name	Date	Scale	NTS @ AG
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Designed: JMH	Feb 2020		
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Drawing No: **104677-UTL-SK001** Revision: **-**

Appendix B – HSE Major Hazard Check

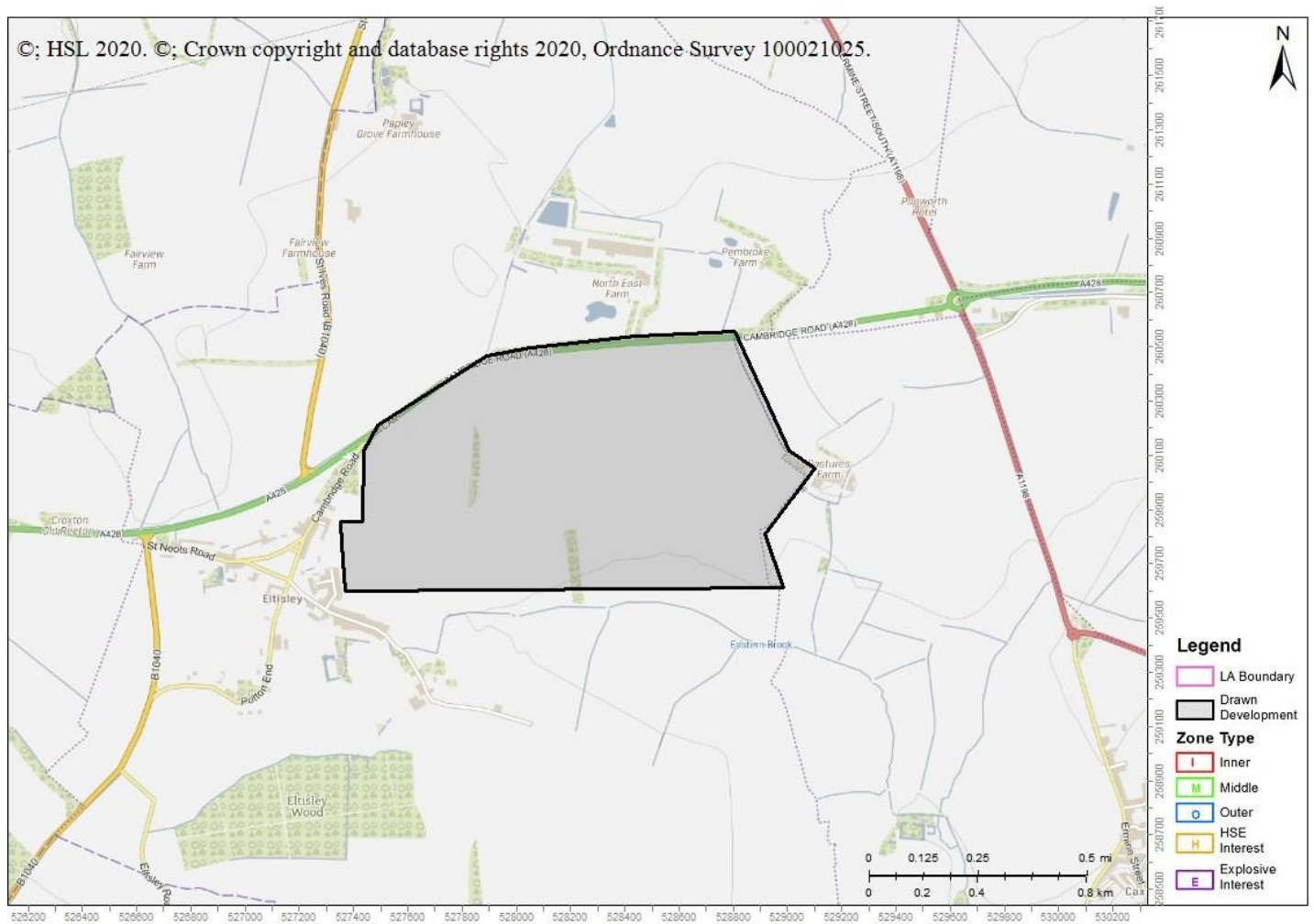
The proposed development site does not currently lie within the consultation distance of a major hazard site or major accident hazard pipeline

Advice : HSL-200921100030-1213 Does Not Cross Any Consultation Zones

Your Ref: Cambourne South 1

Development Name: Cambourne South 1

Comments:

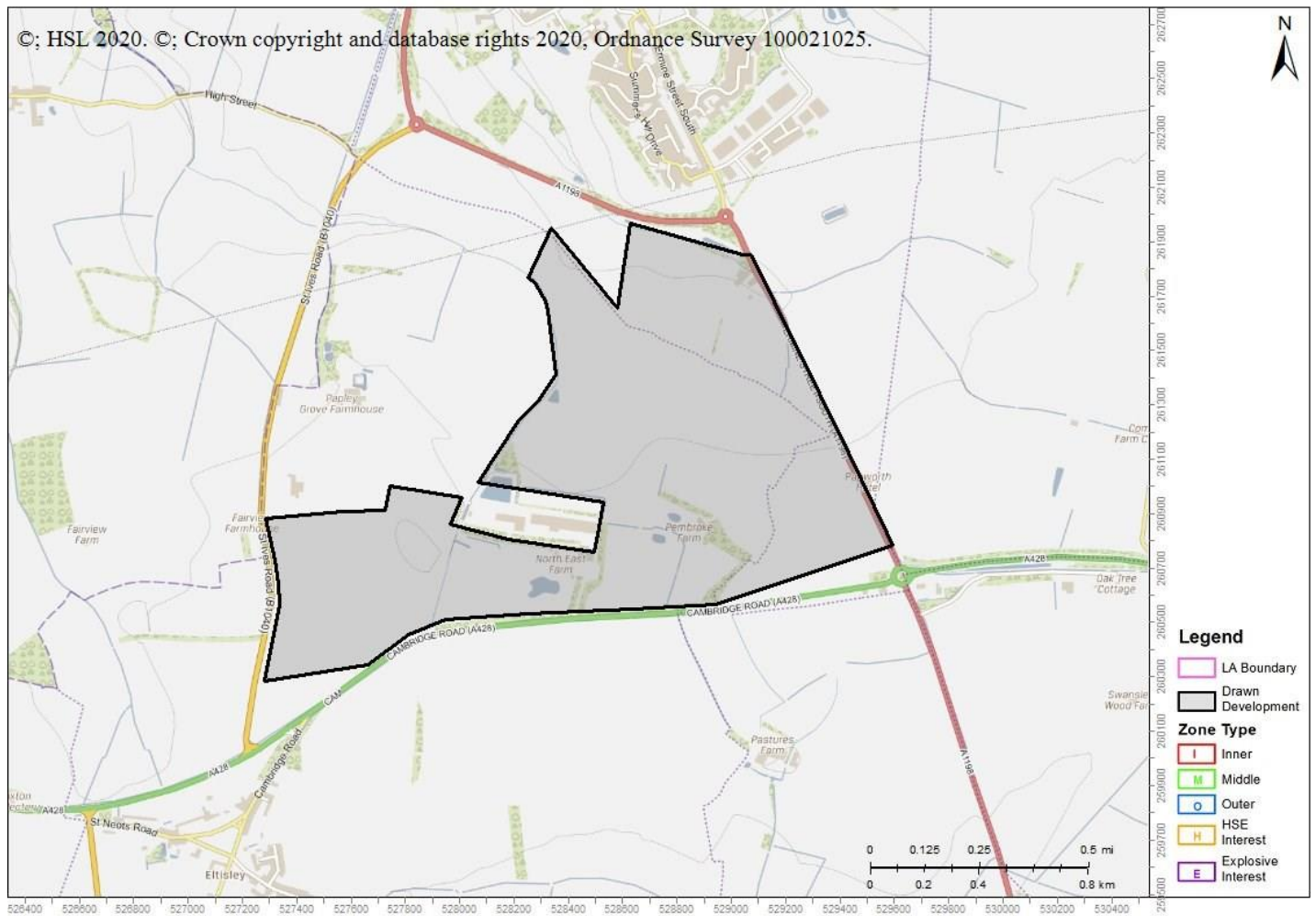


The proposed development site which you have identified does not currently lie within the consultation distance (CD) of a major hazard site or major accident hazard pipeline; therefore at present HSE does not need to be consulted on any developments on this site. However, should there be a delay submitting a planning application for the proposed development on this site, you may wish to approach HSE again to ensure that there have been no changes to CDs in this area in the intervening period.

This advice report has been generated using information supplied by Stuart Watts at Pell Frischmann on 21 September 2020.

Advice : HSL-200921094834-1213 Does Not Cross Any Consultation Zones

Your Ref: Cambourne North
Development Name: Cambourne North
Comments:



The proposed development site which you have identified does not currently lie within the consultation distance (CD) of a major hazard site or major accident hazard pipeline; therefore at present HSE does not need to be consulted on any developments on this site. However, should there be a delay submitting a planning application for the proposed development on this site, you may wish to approach HSE again to ensure that there have been no changes to CDs in this area in the intervening period.

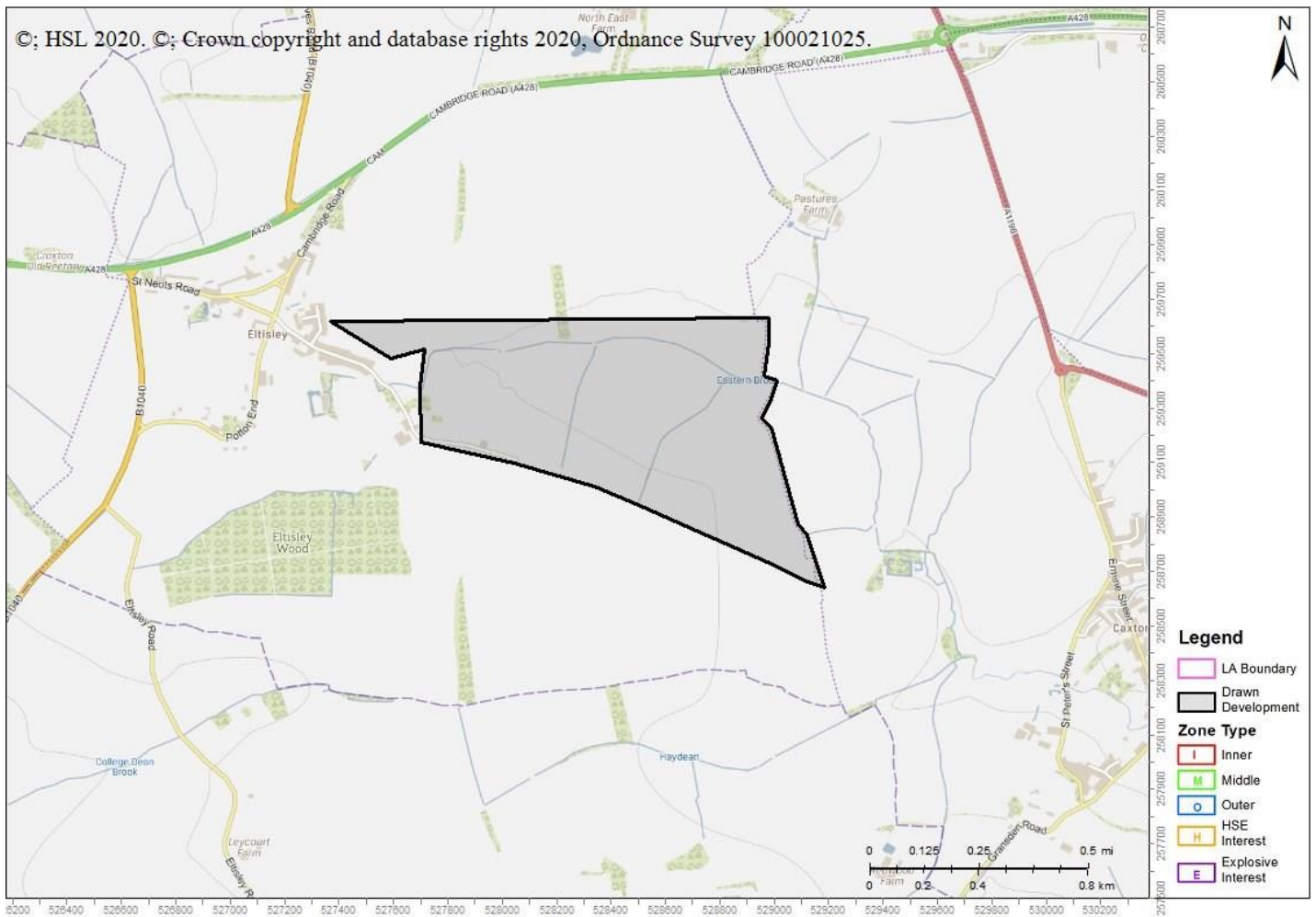
This advice report has been generated using information supplied by Stuart Watts at Pell Frischmann on 21 September 2020.

Advice : HSL-200921100611-1213 Does Not Cross Any Consultation Zones

Your Ref: Cambourne South 2

Development Name: Cambourne South 2

Comments:



The proposed development site which you have identified does not currently lie within the consultation distance (CD) of a major hazard site or major accident hazard pipeline; therefore at present HSE does not need to be consulted on any developments on this site. However, should there be a delay submitting a planning application for the proposed development on this site, you may wish to approach HSE again to ensure that there have been no changes to CDs in this area in the intervening period.

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