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Project: Middlewick Ranges, Colchester

Reference: Utilities Summary

File: 40472

Date: November 19, 2020

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## UTILITIES SUMMARY

Stantec undertook initial utility searches and enquiries to the incumbent undertakers to ascertain existing infrastructure in September 2018. This also sought to clarify likely points of connection for future supplies, and to determine if there is a need to reinforce any of the existing off-site utility networks.

An Existing Utility Infrastructure Constraint plan was prepared showing the extent of the existing utility infrastructure within and adjacent to the site, and this was used to undertake a preliminary assessment of the utilities provision in and around the site. The asset records and capacity investigations were supplemented by liaison with the utility companies to establish how the site could be served, and any constraints on development. The details they provided were correct at the time of the inquiry, but it should be remembered that networks can and do change, and so further investigation and clarification will be required during the planning process for the site and prior to any further construction.

The site may have its own private network for some utilities, which is a common occurrence on military bases in the UK, although the nature of the usage here, as a firing range, significantly reduces this likelihood. However, it will be sensible to carry out a more detailed utility survey prior to commencing construction work on the site.

It is clear from the plans provided that connections to the relevant utilities network operators in the area are either made at the boundary or through a spur that enters the site.

The site is in an area where UK Power Networks (UKPN) operate the electrical network, Cadent Gas Ltd operate the local distribution gas network and Anglian Water operates the potable water supply and drainage networks.

### Electricity Network

The site is located within an area served by UK Power Networks (UKPN), and the description below is based on the records that they provided.

A series of pylons carry a 132kV Overhead Lines (OHL) across the site. They enter the site from the intersection of Mountbatten Drive/Abbots Road, and continue in a north-westerly direction before turning west to exit from the north-west corner of the site to connect into the Mersea Road Substation (Ref no 0H3074), located in the residential estate west of Mersea Road.

An 11kV high voltage (HV) cable running south on Mersea Road enters the north-west corner of the site, close to the Abbots Road/Mersea Road intersection and runs south, broadly parallel to the western boundary before turning south-eastwards to follow the trail towards Birch Brook, where it exits the site into the adjoining estate.

UKPN's asset records show the Mersea Road Substation is within the residential estate located west of Mersea Road. The Substation is supplied by 132kV OHLs and there are multiple 33kV cables exiting the Substation.

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Two 33kV cables are shown to cross Mersea Road and run within the northern verge of the site along Abbots Road until they reach Mountbatten Drive where they then disseminate into the adjoining residential estates.

There are series of 11kV cables along Abbots Road and Mersea Road outside the site boundary, which are connected into Substations to supply the adjoin residential estates.

**Site connection**

UKPN has advised that the site can be served from the Mersea Road Substation which currently has spare capacity. Some localised network reinforcement would be required to provide supply to the site, and UKPN provided details of what would need to be done to achieve this. They proposed to install 375m of new cable from the Mersea Road Substation to the existing network at the “Willow Shops” feeder and to the primary 33/11kV Substation to supply the proposed site.

This level of localised reinforcement is consistent with the scale and nature of the development, and would be incorporated into a planning application and consent for the site in the usual way. It is not envisaged that the costs of this reinforcement would be excessive in the context of the scale of the site.

**Gas Supply**

The site is located within an area served by Cadent Gas Ltd, and the description below uses the information that they provided.

Until earlier this year, a 14” Cast Iron (CI) Medium Pressure (MP) gas main ran east to west through the middle of the site. However, this main was almost life expired, and so Cadent relocated it, as a modern pipe, with the agreement of DIO, to a new alignment a short distance within the site boundary running northwards up Mersea Road, and then eastwards along Abbots Road. The layout agreed allows for some junction improvement works to be accommodated at the Mersea Road / Abbots Road junction should this prove necessary in the future as a result of development at the site.

A Low Pressure (LP) 15in Spun Iron (SI) Gas main enters the site from Abbots Road on the north-east corner and runs across the site to the north-west corner of the boundary line. As it approaches the boundary line, it turns south and runs on-site parallel to the western boundary line before exiting the site near the location of the existing site entrance into Mersea Road.

There is an operational National High Pressure (NHP) 324mm steel (ST) gas main owned and maintained by Cadent Gas Ltd in the vicinity of the site, but not within it. The closest point of the NHP gas main is approximately 320 metres south from the site boundary. HSE have advised that the pipeline has a consultation distance on the outer zone of 37 metres. In this case, potential development is well beyond the consultation zone and is not affected by the proximity of this NHP gas main.

**Site connection**

The development masterplan is able to accommodate the existing gas main provision in the area, and so no adverse implications are expected. There may be a need to undertake localised protection or realignment works to accommodate the access junctions for the development, but this is in no way abnormal for a site of this nature and scale.

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Cadent Gas Ltd indicated that their preferred Point of Connection for the site would be at the intersection of Abbot's Road/Mountbatten Drive, on the 315mm MP main. They also confirmed that this main had sufficient capacity to supply the site.

It is possible that an alternative point of connection may now exist along the alignment of the re0aligned MP gas main on the Mersea Road / Abbots Road boundaries of the site. This would be a matter for Cadent at the time that a supply was requested, but it is clear that there is both sufficient capacity and alternative connection points available to serve the site.

### **Telecommunications**

The site is located within an area served by Openreach and Virgin Media (VM).

The existing on-site buildings close to the western entrance on Mersea Road are connected by an Openreach cable spurring from the main cable running along Mersea Road. There is also a disconnected Openreach cable located near the north-west corner of the site, which may be capable of reactivation to provide an alternative means of connecting the site.

Both Openreach and Virgin Media have telecommunication networks infrastructure running along both Mersea Road and Abbots Road to supply local residential estates, and these would be capable of supplying the site. There is nothing unusual or abnormal about the telecommunications provision in the area, and it would be expected that the connections could be made at no cost, or very low cost, to the developer of the site.

### **Potable Water**

The site is located within an area served by Anglian Water Services Ltd (AWS), and the description below uses their information.

The AWS Asset records do not show any existing on-site water main or private water networks.

There are two water mains running north to south along Mersea Road. The main closest to the edge of the site boundary is a 10in diameter PVC pipe, while a 4in GI water main runs in parallel. Meanwhile, a 125mm MDPE water main runs along the north side of Abbots Road, becoming a 180mm MDPE water main part way along its run, to the Mersea Road/Abbots Road intersection where it connects into the 10in PVC pipe along Mersea Road.

### **Site Connection**

AWS confirmed that there is insufficient capacity in the current network. Therefore, local reinforcements will be required to supply the proposed development. AWS advised that they would need to install 1.7km of 280mm HPPE water main from the site to the 500mm HPPE main running along Haven Road, Colchester. This would constitute an abnormal cost in respect of the development, but is not anticipated to render the site unviable, especially as the energy and telecommunications networks and foul water drainage are unlikely to incur any abnormal costs.

### **Foul and Surface Water**

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Anglian Water Services Ltd (AWS) are also responsible for the foul and surface water systems around the site, and their information has been used again.

There is a 914mm combined sewer running east to west through the site. The sewer enters the site from the green park on Speedwell Road between two residential estates next to Old Heath Road and runs west across the site towards the site entrance before exiting into Mersea Road. This sewer forms a constraint on development immediately over it, but this can be accommodated within the proposed masterplan for the site, and one way that this could be done is shown on the illustrative masterplan. A further 525mm diameter combined sewer runs north to south along the edge of the site at Mersea Road.

A 1350mm diameter surface water sewer enters the site from the south-east corner of the site boundary and runs onsite along the eastern boundary to the Abbots Road/Mountbatten Drive intersection, where it turns north and exits the site into Mountbatten Drive. A 300mm diameter surface water sewer runs north along Abbots Road and the outside edge of the site boundary before turning north in West Mountbatten Drive.

A 225mm foul water sewer splits from the 914mm combined sewer main in the green patch and runs north parallel to the 1350mm surface water sewer to the Abbots Road/Mountbatten Drive intersection, where it turns north and exits the site into Mountbatten Drive.

Anglian Water have indicated that the development site is within 15 metres of a sewage pumping station. The pumping station is location next to a residential estate near Queensland Drive, west of the site boundary.

**Site connection**

The site layout can easily accommodate the proximity of the sewage pumping station and the need for a local cordon sanitaire to ensure that development is not within 15 metres of the boundary of the facility.

AWS advised that the site falls within the catchment of Colchester Water Recycling Centre, which has capacity to accommodate the flows from the development site. A new 225mm diameter foul sewer would be needed to drain foul water from the development site. This would be likely to connect to the 600mm diameter combined sewer located on Mersea Road.

## **CONCLUSION**

The site lies within an established urban area, and consequently the utility networks in the area are comprehensive and easily accessible on all boundaries of the site. Connection points can be easily defined for all of the different utilities, with most having the option of multiple points of connection.

The only utility that requires any substantive off-site reinforcement work based on preliminary enquires is potable water, where a new main needs to laid to the works some 1.7km away. The other supplies, for energy, telecommunications and foul water have all confirmed that their networks have sufficient capacity and only localised connection upgrades or changes to establish new points of connection for the site would be required.

Although the costs of providing a new potable water main could be considered as “abnormal” costs, they are well within the range of costs that could be expected for a site of this scale and nature. In addition, the fact that this is the only utility where there may be an off-site cost to achieve a supply is relatively unusual in sites such as this, where upgraded utility provision is often required across most or all of the providers.