FOUL SEWERAGE & UTILITIES ASSESSMENT

Land East of Holt Road, Horsford

Client: David Wilson Homes (Eastern)

October 2016

Project no: 47172
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FOUL SEWERAGE & UTILITIES ASSESSMENT
Report Title:  Land East of Holt Road, Horsford
Client:  David Wilson Homes (Eastern)

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Project no: 47172
1. **Introduction**

1.1. Richard Jackson Ltd have been instructed by David Wilson Homes (Eastern) to undertake a foul sewage and utilities assessment to support a planning application on land east of Holt Road, Horsford, for the purposes of a new housing development of up to 259 residential dwellings.

1.2. The site, as shown in Figure 1, is located north of the village in Horsford, Norfolk. The site is east of Holt Road, Horsford and is currently used as farmland. To the west of the site are existing dwellings that front Holt Road, Olive Crescent and The Shrublands. To the north of the site are several dwellings that front Green Lane.

1.3. It has an approximate Ordnance Survey midpoint of 618831, 317401 and a postcode of NR10 3ED. The site is currently served by a single carriageway with no through road, giving vehicular access to the existing dwellings on Green Lane.

1.4. The topography of the site varies little from north to south; the northern boundary is at a level of approximately 36.72m GL, and the southern boundary is approximately 35.84m GL. The site slopes greatest from north east to south west. The north west boundary is approximately 36.76m GL and the south east boundary approximately 35.41m GL.

1.5. This report does not include an assessment of surface water drainage as this is considered as part of the Flood Risk Assessment (FRA).

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2. **Existing Utilities**

2.1. To enable a thorough assessment into existing mains utilities apparatus located on and around the immediate vicinity of the site, mains records plans are requested from the relevant statutory utility companies. The table below provides a summary of the responses received from the companies consulted (Existing statutory information supplied by David Wilson Homes (Eastern)):

**Table 2.1 – Existing Statutory Utility Providers**

<table>
<thead>
<tr>
<th>Company</th>
<th>Plant Present</th>
<th>Plant Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fulcrum Pipelines Ltd</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>GTC</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Linesearch</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>National Grid Gas Plc</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>UK Power Networks</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Energetics</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Anglian Water (Potable)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Anglian Water (Sewers)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>BT</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>BSKYB</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Instalcom Limited</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Verizon Business</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Interoute</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Trafficmaster</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Virgin Media</td>
<td>Awaiting</td>
<td>Awaiting</td>
</tr>
<tr>
<td>Vodafone (Ex Cables &amp; Wireless)</td>
<td>Awaiting</td>
<td>Awaiting</td>
</tr>
<tr>
<td>Colt</td>
<td>Awaiting</td>
<td>Awaiting</td>
</tr>
</tbody>
</table>

2.2. To identify the main services, a brief description of each company’s apparatus is indicated below. Where the apparatus is affected, the records are located in the attached appendices. Note the records plans obtained from the statutory utilities typically show approximate routes of mains only, not service cables, ducts or pipes, or private services which are unrecorded and appropriate precautions to identify utility infrastructure should always be undertaken prior to any excavating operations.

2.3. Additionally, a drawing is provided of the approximate locations of apparatus based upon the information received from the respective statutory utility company.

**Gas**

2.4. The existing gas network is operated by National Grid Gas Plc and GTC Pipeline Ltd. National Grid Gas Plc Mains record plans provided in **Appendix A** illustrates a 63mm PE gas main in Holt Road. GTC Pipeline Ltd records provided in **Appendix B**, indicate existing mains varying in
sizes from 63mm PE to 250mm PE, in the recently developed land to the south of the proposed new development.

2.5. Through the submission of a land enquiry, National Grid has highlighted that whilst the nearest main is 5m from the site boundary, this has insufficient capacity for the requested demand and will require reinforcement. The drawing within Appendix C indicates the charging point, and also the connection point, denoting the extent of the reinforcement works, (approx 70m). The extent of the offsite gas mains extension required from the connection point to the site boundary is approximately 350m, the cost of these works can only be obtained by the submission of a quotation request from your preferred connection provider.

2.6. As detailed above GTC Pipelines Ltd has apparatus to the south of the proposed development, this main has no available capacity and cannot be utilised to serve Phase 2.

Electric

2.7. The existing electrical distribution network is operated by Eastern Power Networks Plc, trading as UK Power Networks and GTC Pipeline Ltd. UK Power Networks record plans provided in Appendix D indicate apparatus on and adjacent to the site in this area. GTC Pipeline Ltd records provided in Appendix E, indicate existing LV in the recently developed land to the south of the proposed new development.

UK Power Networks

2.8. Inside of the site boundary there are four poles carrying an overhead high voltage network from the south west of the site, running north, these cables become centralised when the development area increases by the inclusion of the adjoining land to the north west. Also six poles are carrying overhead high voltage network running along the site boundary with Green Lane. In addition to this an existing electric pole (also BT apparatus attached to this pole, this will require removal prior to any relocation works) will require relocating as this is located within the new site entrance off Holt Road, leading onto Green Lane.

2.9. Following submission of an application to UK Power Networks they have confirmed that a budget cost of £30,000.00 should be allowed to underground the existing HV overhead line (diverting this main will require an easement width of 2m, 1m either side of the cable) and divert an existing HV underground cable crossing the site. An additional sum of £18,000.00 should also be allowed to underground the existing HV overhead line running along the site boundary with Green Lane. A further sum of £10,116.49, should be allowed for the relocation of the pole which is situated in the proposed new site access road.

GTC ELECTRIC

2.10. As detailed above GTC Pipelines Ltd has apparatus to the south of the proposed development, this main has no available capacity and cannot be utilised to serve Phase 2.
**Street Lighting**

2.11. Internet mapping and has not revealed any street lighting on Green Lane, or on the northern section of Holt Road. Street Lighting is situated further south on Holt Road towards the centre of the village.

**Anglian Water (Potable)**

2.12. Potable water mains records, provided in Appendix F, indicate that Anglian Water has assets located in the vicinity to the site. No mains are located at the northern boundary within Green Lane. Immediately adjacent to the western boundary, records indicate that there is a 4” galvanised iron water main on the eastern side of Holt Road, and a 9” Asbestos Cement main on the opposite western side. The water main is likely to be protected by a 4.5m easement (2.25m either side of the centreline of the main). The apparatus is unlikely to be affected directly by the development.

**Anglian Water (Sewers)**

2.13. Sewer records, provided in Appendix G, indicate that Anglian Water has assets located in the vicinity to the site. There aren’t foul water sewers on Green Lane but there is a sewer that runs from North to South along Holt Road towards the centre of the village itself. The mapping from Anglian Water shows that there is a potential for a foul water connection to manholes on Holt Road.

**British Telecom**

2.14. BT mains records, provided in Appendix H, indicate that telecom apparatus is present in the immediate vicinity of the site. Records show existing overhead apparatus running on the northern side of Green Lane, this may require diverting underground dependent upon the extent Green Lane is widened to accommodate the new development.

2.15. Existing BT mains records indicate a telegraph pole currently situated adjacent to no. 360, Holt Road, this pole is owned by UK Power Networks and has LV cabling attached. This will require diverting underground as this will form part of the new access to the development. Please note that BT have an agreement with UKPN that allows them 6 months’ grace to remove their pole attachments from date of notice to quit.

2.16. A speculative search using BT’s online Broadband Availability Checker (which gives an initial indication of the availability of broadband services for a particular phone line or postcode) has been performed using the postcode NR10 3ED. The search output indicates that ADSL 2+ (which is theoretically capable of doubling the frequency band of typical ADSL connections) is available, delivering a downstream line rate up to 2 Mbps with downstream range between 1 and 3.5 Mbps. It should be noted that
these figures are indicative and the most accurate results can be obtained from a telephone number check.

3. Proposed Utilities

3.1. Budget estimates were requested from the relevant statutory utilities and the correspondence is summarised below. It should be noted that the budget estimates, which exclude VAT unless otherwise stated, do not represent formal quotations and capacity cannot be secured until a formal quotation is acquired and accepted. Normally the statutory utilities can provide a firm quotation (which can be formally accepted) in approximately 4 to 6 weeks unless otherwise stipulated.

3.2. It should be noted that statutory utility companies typically undertake the excavation and reinstatement works in the public highway only. The budget costs noted above exclude on-site trenching and reinstatement, provision and laying of service and road crossing ducts, and the supply and fitting of meter boxes. The legal costs associated with administering any easements etc. are similarly excluded. Civil engineering construction costs for new surface and foul water drainage (i.e. sewers and manholes) and telecoms infrastructure are also additional.

**UK Power Networks**

3.3. UK Power Networks have been contacted, to establish the method of supplying electricity to the site, and to test whether adequate capacity is likely to exist on its network. A copy of the correspondence received is provided in Appendix I.

3.4. The correspondence states that UK Power Networks proposal is to connect to one of the HV cables which requires diverting (see paragraph 2.9), and the inclusion of a substation to serve the development. The cost of this and all subsequent cabling and 259 onsite connections (237 gas heated houses and 22 gas heated flats) is estimated at **£225,000.00**, excluding the diversionary works referred to in paragraph 2.9.

**GTC (Dual Fuel)**

3.5. GTC has provided a budget estimate to supply electric and gas to the site. Indicative costs are £126,602.14 for onsite electric and gas infrastructure and £13,072.71 for offsite electric and £144,666.00 for offsite gas. The total estimated cost is **£284,340.85**. A copy of the budget estimate is provided in Appendix J.

3.6. Domestic electrical loadings have been assumed by GTC based on gas heated dwellings. It should be noted at this stage, GTC has had no dialogue with UK Power Networks, the operators of the respective upstream electric network therefore an indicative point of connection has been assumed by GTC. The correspondence mentions that GTC has assumed a high voltage electric connection due to the size of the site and one number substation. The correspondence received from National Grid Gas, confirms that offsite reinforcement was provided to GTC, who have made allowance within their budget quotation accordingly (**£144,666.00**). Further, GTC’s quotation has been based upon the point of connection confirmed by National Grid.
3.7. Unfortunately, GTC are unable to provide a quotation for the diversionary works, as these are deemed non contestable and can only be undertaken by the Distribution Network Operator (DNO), UK Power Networks.

**Anglian Water (Potable)**

3.8. A Pre Planning Enquiry was made to Anglian Water, requesting feedback regarding the capacity of the local mains potable water network. The Pre Planning Assessment proposal has confirmed that presently there is sufficient potable water capacity available to serve the proposed units from its existing local network. Connection will be made to the 9” Asbestos Cement main in Haveringland Road. A copy of the correspondence is provided in Appendix K.

3.9. For budgeting purposes Anglian Water estimates the construction cost of new water mains to serve the site could be in the region of **£153,000.00**. As Anglian Water offsets future revenue from physical mains construction costs, it is possible that the above figure may reduce. The developer’s contribution for on-site water mains is usually much less than the cost of installation. This is in accordance with the legislation set out by the Water Industry Act 1991 for the recovery of water company costs. Anglian Water has estimated the likely contribution towards the water main to be **£25,796.00**. This cost would need to be confirmed by formal application in the future.

3.10. Each new connection will attract a connection charge and a water infrastructure charge. Connection charges vary depending on whether the connection may be made on-site or off-site. On the basis that connections can be made onsite, the connection and infrastructure charges are currently £433.00 and £354.00 respectively per domestic dwelling. Based on a development of up to 259 residential dwellings, this would therefore equate to approximately **£203,833.00**.

**Anglian Water (Foul)**

3.11. Anglian Water has undertaken a Pre Planning Assessment, provided in Appendix L. This indicates that the site is in the catchment of Whittingham Trowse Water Recycling Centre, which currently has capacity to treat the flows from the development site. It has been indicated that there are no capacity issues with the local sewer network.

3.12. The allowable connection for the development will be to manhole 6201 in Holt Road at National Grid Reference TG18636717252 at a discharge rate of 3.80l/s. A foul drainage strategy indicating this is included in Appendix L.

3.13. A connection to the public surface water sewer network was not requested, as the site is suitable for infiltration drainage techniques.

3.14. Each new connection will attract a sewerage infrastructure charge, currently £354.00 per domestic dwelling. Based on 259 residential units, this equates to approximately **£91,686.00**.
3.15. BT does not provide a duct and chamber design for new on-site apparatus or entertain any site specific dialogue until planning consent has been granted. BT provides free-issue materials for installation by the developer’s appointed ground worker. BT generally carries out any network reinforcement work outside of the site boundary and in the public highway to provide capacity to a development.

3.16. If BT considers that the cost of any reinforcement works will be higher than a total allowance of £3,400.00 (excluding VAT) per plot, it will seek to pass on the additional cost. It is not anticipated that reinforcement costs will be charged for this site.

4. **ESTIMATED UTILITIES COST SUMMARY**

<table>
<thead>
<tr>
<th>Utility Company</th>
<th>Description of Works</th>
<th>Reinforcement Costs (Abnormal)</th>
<th>Diversion Costs (Abnormal)</th>
<th>Infrastructure &amp; Connection Charges (Normal)</th>
<th>Mains Infrastructure Costs (Normal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas – National Grid</td>
<td>Approximately 70m of reinforcement work is required. National Grid has not provided cost for this, however from experience I would allow a sum of £24,500.00. Gas mains will also need to extend approx. 350m to the site boundary/green lane access, the cost of which is included within GTC Dual Fuel Proposal</td>
<td>£24,500.00</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Electric - UKPN</td>
<td>Underground existing overhead HV cable running along the western side of site. NB This will need to be diverted within the new road infrastructure, requiring an easement width of 2m (1m either side of cable)</td>
<td>N/A</td>
<td>£30,000.00</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Electric - UKPN</td>
<td>Underground existing overhead HV cables located at the Northern Site Boundary running adjacent with Green Lane (2m easement required)</td>
<td>N/A</td>
<td>£18,000.00</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Electric - UKPN</td>
<td>If the proposed new access into Green Lane is approved, an existing UKPN pole will need to be relocated. NB This pole also has BT apparatus attached – BT have an agreement with UKPN that allows them 6 months grace to remove their pole attachments from date of notice to quit</td>
<td>N/A</td>
<td>£10,116.49</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Electric – UKPN</td>
<td>Onsite Costs, substation, mains infrastructure, service and meters</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>£225,000.00</td>
</tr>
<tr>
<td>Dual Fuel – GTC*</td>
<td>Pending Dual Fuel Quotation</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>£286,340.85</td>
</tr>
<tr>
<td>Potable Water – Anglian Water</td>
<td>No diversions or reinforcement works</td>
<td>N/A</td>
<td>N/A</td>
<td>£192,815.00</td>
<td>£25,796.00</td>
</tr>
<tr>
<td>Foul Water – Anglian Water</td>
<td>No diversions or reinforcement works, point of connection confirmed, Pumping Station required</td>
<td>£100,000.00</td>
<td>TBC</td>
<td>£86,730.00</td>
<td>-</td>
</tr>
<tr>
<td>Telecoms - BT</td>
<td>Existing overhead apparatus running on the Northern Side of Green Lane, may require diverting underground dependent upon the extent that Green Lane is widened. No reinforcement works anticipated – Application to be submitted once planning permission has been obtained</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>-</td>
</tr>
</tbody>
</table>

*Alternative to UK Power Networks (UKPN)*

4.1. As stated previously, statutory utility companies typically undertake the excavation and reinstatement works in the public highway only. The budget costs in Table 4.1 exclude on-site trenching and reinstatement, provision and laying of service and road crossing ducts, and supply and fitting of meter boxes. Costs also exclude construction of floor slabs for the Pressure Reduction Station (if above ground) and substation, as well as the construction of brick built enclosures, or supply and fitting of a GRP enclosure if preferable and only where necessary. Legal costs associated with administering easements etc are similarly excluded. Civil engineering costs for new surface and foul water drainage (i.e. sewers and manholes) and telecoms infrastructure are also additional.
5. **LIMITATIONS**

5.1. This report has been produced for the sole use of David Wilson Homes (Eastern) as outlined above in Section 1.

5.2. The contents of this report should not be relied upon by others without the written authority of Richard Jackson Ltd. If any unauthorised third party makes use of this report, they do so at their own risk and Richard Jackson Ltd owes them no duty of care or skill. All information provided by others is taken in good faith as being accurate, however Richard Jackson Ltd cannot, and does not, accept any liability for the detailed accuracy, errors or omissions in such information.

5.3. No evidence of other utility apparatus has been reported by any other company contacted. Note that the records plans obtained from the statutory utilities typically show approximate routes of mains apparatus only, not service cables, ducts, or pipes, which are unrecorded. This assessment also does not rule out the potential for further private services to exist and usual searches and precautions should be undertaken when carrying out any excavation or probing work. Therefore, a check must be undertaken when carrying out any work beneath the ground, prior to any excavation taking place.

5.4. At the time of writing all statutory undertakers haven been contacted, however are yet to provide their confirmation that the increase from 245 to 259 dwellings is acceptable and renders their current advice on service provision unchanged.
Appendices