

FOUL SEWAGE & UTILITIES ASSESSMENT

Land at Sturgeons Farm, Diss

Client: G.N. Rackham & Sons Ltd

March 2018

Project no: 47455



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Contents:-

1.		. 2
2.	EXISTING UTILITIES	. 3
3.	PROPOSED UTILITIES	. 7
4.	ESTIMATED UTILITIES COST SUMMARY	. 9
5.	LIMITATIONS	10

Figures / Drawings

Figure 101 Site Location Plan

Appendix

Appendix A	Existing Records	Cadent Gas Ltd
Appendix B	Existing Records	UK Power Networks
Appendix C	Existing Records	Anglian Water (Potable)
Appendix D	Existing Records	Anglian Water (Sewers)
Appendix E	Existing Records	BT
Appendix F	Existing Records	Virgin Media
Appendix G	Existing Records	Vodafone
Appendix H	Budget Estimate	UK Power Networks
Appendix I	Budget Estimate	GTC
Appendix J	Pre Planning Assessment	Anglian Water
	Report	-

1. INTRODUCTION

- 1.1. Richard Jackson Ltd has been instructed by G.N. Rackham & Sons Ltd to undertake a foul sewage and utilities assessment to support a planning application on land at Sturgeon's Farm, located to the north west of Diss, for the purposes of a new residential housing development of up to 415 dwellings.
- 1.2. The proposal site comprises a greenfield/brownfield site, currently occupied by agricultural land. Immediately east of the site are the dwellings of Farm Close and Louie's Lane, beyond that is Shelfanger Road and Diss Sports Club. To the south of the site are allotments and residential dwellings, with the centre of Diss beyond. To the west of the site are agricultural fields. To the north of the site is KC Steward Recycling Plant (Steward Recycling), with agricultural fields beyond.
- 1.3. **Figure 101** illustrates the location and extent of the proposed site, equating to a developable area of approximately 13.5ha. This site has an approximate Ordnance Survey midpoint of 611055E, 280896N and Postcode IP22 4EE.
- 1.4. The topography of the site predominantly falls from south to north east from approximately 38m to 34m AOD to the northern half of the site.
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2. EXISTING UTILITIES

2.1. To enable an assessment into existing mains utilities apparatus located on and around the immediate vicinity of the site, mains records plans were collated from the client records of the relevant statutory utility companies. The table below provides a summary of the responses received from the companies data provided:

Company	Plant Present	Plant Affected
Energetics	No	No
UK Power Networks	Yes	Yes
Cadent Gas Ltd	Yes	No
GTC	No	No
Anglian Water (Sewers)	Yes	Yes
Anglian Water (Potable)	Yes	No
Transmitters	No	No
Mast Data	No	No
CityFibre	No	No
euNetworks	No	No
ВТ	Yes	Potentially
BSKYB	No	No
Virgin Media	No	No
Vodafone (Ex Cables & Wireless)	No	No
Logica	No	No
Colt	No	No
Instalcom Limited	No	No
KPN	No	No
SOTA	No	No
ТАТА	No	No
Vtesse	No	No
Verizon Business	No	No
Interoute	No	No
КСОМ	No	No
Trafficmaster	No	No
Network Rail	No	No

Table 2.1 – Existing Statutory Utility Providers

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.

Gas

- 2.3. The local mains gas distribution network is operated by Cadent Gas Ltd. Cadent mains records, provided in **Appendix A**, indicate that in the immediate vicinity of the site the gas distribution network operates at low pressure.
- 2.4. There are no gas mains present in Shelfanger Road close to the vicinity of the site. The closest main is Farm Close, where there is a 63 PE Low pressure main. This connects into a 90mm main just south of the junction of Farm Close/ Louie's Lane. The apparatus should not be affected by the development as their depth should be sufficient within the carriageway, however, this will require checking.

UK Power Networks

- 2.5. The existing electrical distribution network is operated by Eastern Power Networks Plc, trading as UK Power Networks. Mains records plans provided in **Appendix B** indicate that UK Power Networks has electrical plant on and adjacent to the site.
- 2.6. The records show that there are 6 No. high voltage overhead electrical poles within the site boundary. These high voltage power cables will either be incorporated into the architect's masterplan or diverted and grounded.
- 2.7. There is a transformer located on the northern side of the farm track just north of 91 Louie's Lane. The cables from this transformer are laid in the northern side of the farm track and also on the eastern side of Louie's Lane. There are also cables travelling east to the B1077 Shelfanger Road. They consist of underground cables of low voltage between 230/400V, supplying electricity to the dwellings on Farm Close and Louie's Lane. This is a potential connection point for the new development.
- 2.8. There is a possibility that the cables could be affected by the highway improvements necessary at the B1077/Louie's Lane junction, but this is unlikely. Care will need to be provided at this location prior to any amendments to the local highway network, to ensure that cables are avoided or diverted as necessary. The details are located in **Appendix B**.
- 2.9. Further underground network connect to high voltage cables in the Public Right of Way to the east, which travels towards Heywood Road.

Street Lighting

2.10. Internet mapping indicates no street lighting columns will likely be impacted by the proposed development. If there are any columns that require relocation an estimate of approximately £1,000 per column should be used.

Anglian Water (Potable)

2.11. Potable water mains records, provided in **Appendix C**, indicate that Anglian Water has a 90mm MDPE/PE80 water main located at the northeast access of the site, underneath the southern footway situated between No.1 and

No.6 Farm Close. But there is no record of any water mains along Shelfanger Road where an access is proposed.

2.12. There are additional mains serving local properties in and from Louie's Lane. The main trunk mains in Louie's Lane are a 4" AC serving Farm Close; a 6" PVCu serving the eastern side; and a 300mm DI that continues north and then along the Public Right of Way to the east.

Anglian Water (Sewers)

- 2.13. Sewer records, provided in **Appendix D**, indicate that Anglian Water has assets that run adjacent to the site along Louie's Lane to the east of the site. At Farm Close, east of the site, there is a 150mm VC public foul sewer flowing from Farm Close to join the Louie's Lane sewerage, before reaching the foul water Pumping Station on the east side of Louie's Lane. There are no assets shown on the mapping within the proposed site boundary.
- 2.14. Assets in the local area of the site in Louie's Lane are shown as 150mm diameter pipes that flow, in a northern direction towards the foul Sewage Pumping Station on the east side of Louie's Lane.
- 2.15. A 300mm surface water sewer extends from Louie's Lane past the Farm Close access, in the northern direction across in the northerly direction along Shelfanger Road into a 375mm pipe. There is a separate 450mm CO pipe that also flows north along Shelfanger Road. The 450m diameter sewer which flows from Diss appears to outfall north east of Shelfanger Road into the ditch on the western side of Shelfanger Road.
- 2.16. Upon further inspection of the maps sent by Anglian Water, the invert levels of the pipes underneath the Farm Close access are not deep enough for future connections and may need to be given a concrete cover slab to be protected under the road.

ΒT

- 2.17. BT mains records, provided in **Appendix E**, indicate that telecoms apparatus is present in the adjacent roads to the site boundary. These records show many existing underground ducts and chambers, and overhead lines, in the vicinity of the site.
- 2.18. BT plans show proposed plans for BT to connect the dwellings on Farm Close. Further investigation using internet mapping indicates that these proposed plans have already been implemented, meaning underground BT connections are present along Farm Close, Louie's Lane and Shelfanger Road.
- 2.19. Some of the apparatus may be affected by the development as there is a BT cable junction box located a few metres from the Shelfanger Road / Louie's Lane junction. The BT junction box may be impacted as it is unknown whether the box is within the site boundary or in the west verge of Shelfanger Road. Therefore, there is a slight potential risk of the apparatus being affected by the development, but this could be overcome if necessary by moving it either in to the site or the highway.

2.20. 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 IP22 4EE. The search output shown in **Appendix E** indicates that Unlimited Broadband is available, delivering a downstream line rate up to 3 Mbps with downstream range between 7.5 and 17.5 Mbps. It should be noted however that these figures are indicative, and the most accurate results can be obtained from a telephone number check.

Virgin Media

2.21. Virgin Media mains records, provided in **Appendix F**, indicate that the company has no underground ducts and chambers located around the site.

Vodafone

2.22. Vodafone mains records, provided in **Appendix G**, indicate that the company has no underground ducts and chambers located within the vicinity or surrounding area of the site.

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3. PROPOSED UTILITIES

- 3.1. Budget estimates were requested from the relevant statutory utilities for up to 420 dwellings and the correspondence is summarised below. This is to ensure that the costings are robust as the site is only proposed for 415 dwellings. 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.
- 3.3. Costs from Anglian Water are the post April 1 2018 costs, when AW will introduce zonal charging to replace connection charges, in this instance both costings have been provided in the AW Pre-Planning Assessment.

Cadent Gas Ltd

3.4. Cadent Gas were not contacted as they generally only provide connection point details, a budget estimate for supplying the site with gas was obtained by GTC, given time constraints.

UK Power Networks

- 3.5. UK Power Networks were 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 is provided in **Appendix H**.
- 3.6. UK Power Networks have confirmed that the current onsite 11kv and 33kv overhead lines within the site boundary can be utilised to supply the proposed development with housing. Also required will be two new onsite substations, and the low voltage cables to supply the dwellings. UK Power Networks have estimated this cost to be **£500,000.00**.
- 3.7. UK Power Networks have also stated that the cables currently within the site boundary will need to be grounded and then accommodated within the access roads of the proposed development. These high voltage cables will first go to the proposed onsite substations before following the route of their diversion. An estimate of **£210,000.00** is given for diverting the cables.

GTC – Dual Fuel

- 3.8. GTC has provided an updated budget estimate to supply electric and gas to the site. Indicative costs are £195,330.59 for on-site electric and gas infrastructure and £25,909.32 for off-site electric and gas infrastructure. The total estimated cost is **£221,239.91**. A copy of the budget estimate is provided in **Appendix I**.
- 3.9. Domestic electrical loadings have been assumed by GTC based on gasheated dwellings. It should be noted that at this stage, GTC has had no dialogue with either UK Power Networks or Cadent Gas Ltd, the operators of the respective electric and gas networks therefore indicative points of connection have been assumed by GTC.

Anglian Water (Potable)

3.10. Correspondence with Anglian Water was made via a Pre-Planning Assessment Report, which can be found in **Appendix J**. The report highlights that the existing connection can be made to the existing 300mm main in Louie's Lane, without the need for offsite reinforcement. The cost for laying the mains onsite has been budgeted at **£30,240.00**, with the new zonal charging connection charge of £458.50.00 per plot as additional.

Anglian Water (Foul)

- 3.11. The investigation into the possibility of a foul sewerage connection for the development has been made through a pre-planning assessment report, which is in **Appendix J**. There is currently sufficient capacity in the Diss Wastewater Recycling Centre to take the flows from the site. Some upgrades may be needed to the existing sewerage network to accommodate the flows to the WRC, which will be confirmed later via an addendum from Anglian Water.
- 3.12. It is likely that a foul water pumping station will be needed on the site to transfer the foul sewage from the northern boundary to the existing foul sewerage network in the B1077/Louie's Lane. This pumping station and the associated infrastructure can be accommodated within the development boundary and existing highway.
- 3.13. Onsite costs have not yet been identified but are expected in the addendum, not yet received from AW. The zonal charging per plot to connect to the fouls sewerage network will be £471.00.

ΒT

3.14. 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 developers 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.

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4. ESTIMATED UTILITIES COST SUMMARY

4.1. **Table 4.1** below provides a summary of the estimated diversion and connection costs (excluding VAT) as indicated within this report.

Utility Company	Disconnection Costs	Diversion Costs	Infrastructure & Connection Charges	Mains Infrastructure Costs	
Gas	N/A	N/A	See Dual Fuel	See Dual Fuel	
Electric	N/A	£210,000.00	£500,000.00 ¹	N/A	
Dual Fuel*	-	-	£195,330.59 ¹	£25,909.32	
Street Lighting	£1,000.00 (if required)	Unlikely	-	-	
Potable Water	N/A	N/A	£458.50 per plot	£30,240.00	
Foul Water	N/A	N/A	£471.00 per plot	Offsite Costs TBC	
Telecoms	N/A	N/A	N/A	-	

Table 4.1 – Estimated Utility Costs Summary

* Gas & Electrical connection

¹ - See Footnote 1 comments below – Not all both costs are required.

- 4.2. Footnote 1 The UK Power Network cost includes for connection to the local network, laying cables around the site and also two substations. The GTC cost includes a for connection to the local network, laying cables around the site and one substation. On this basis it is reasonable to expect that the cost for supplying the electricity, will be the GTC provision plus on additional substation, cost to be provided by GTC. Therefore the electricity supply is likely to be in the region of £195,000 plus a new substation. The diversion of the electricity supply will also be required at £210,000.
- 4.3. 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 PRS (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 G. N. Rackham & Sons Ltd as outlined above in **Section 1**.
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- 5.3. No evidence of other utility apparatus has been provided by the client. 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 place.



Figures





Appendix A











Appendix B







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	0 25 50 Dig Sites Area: 12.2.1 Line: The quality and accuracy of any print will depend on your printer, your computer and its print settings. Measurements	This plan must be used with The position of the apparatus shown on this drawing is believed to be correct but the original landmarks may have been altered U. W power hetworks does not warrant that the information provided to you is correct. You rely upon it at your own risk. This plan must be used with 1. The position of the apparatus should be verified us the drawing is believed to be correct but the original landmarks may have been altered 1. UK power hetworks does not warrant that the information provided to you is correct. You rely upon it at your own risk. 2. UK power the apparatus was installed. 2. UK power hetworks does not warrant that the information provided to you is correct. You rely upon it at your own risk. 2. UK power the apparatus was installed. 3. Uk power hetworks does not warrant that the information provided to you is correct. You warrely triath loss are carefully made avoiding the use of mechanical tools or picks untit the exact location: 610/192 280216 3. Uk power hetworks does not warrant that the information provided to you is correct. You warrely triath loss are mattered shared avoiding the use of mechanical tools or picks untit the exact location: 610/192 280216 5. Uk power hetworks does not warrant that the information provided to you is correct. You warrely triath loss are restored by the method of the exact location: 610/192 280216 5. Uk power hetworks does not warrant that the information provided to you is correct. You rely upon it as your own with the information provided to you is correct. You rely upon it as a result of using the use of motion triation is the information provided to you. It must that the information provided to you. It must the method and and preturn it to the exact readen in the exact readen in th	Reproduced by Permission or Didnere Survey on served. Source and water and served, or under card served, or under card served, or under card served, service and services are as that term is defined in such licensee's distribution services are as that term is defined in such licensee's distribution licensee under section 6(1)(1) of the Electricity Aut 1987 provided by the relevant services are as that term is defined in such licensee's distribution licensee under section 6(1)(1) of the Electricity Aut 1987 provided by the relevant services are as that term is defined in such licensee's distribution licensee and services are as that term is defined in such licensee's distribution licensee and services are as that term is defined in such licensee's distribution licensee and services are as that term is defined in such licensee's distribution licensee and services are as that term is defined in such licensee's distribution licensee and services are as that term is defined in such licensee's distribution licensee and services are as that term is defined in such licensee's distribution licensee and services are as that term is defined in such licensee and services are as the term is defined in such licensee's distribution licensee and services are as that term is defined in such licensee and services are as that term is defined in such licensee and services are as that term is defined in such licensee and services are as that term is defined in such licensee and services are as that term is defined in such licensee and services are as that term is defined in such licensee and services are as that term is defined in such licensee and services are as that term is defined in such licensee and services are as that term is defined in such licensee and services are as a services are as that term is defined in such licensee and services are as a services are aservices are aservices are as a services are as a services



















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a position of the apparatus shown on this drawing is believed to be correct but the original landmarks may is water position of the apparatus should be verified - use approved cable avoidance tools prior to the control of the apparatus should be verified - use approved cable avoidance tools prior to the control of the apparatus should be verified - use approved cable avoidance tools prior to the control of the apparatus should be verified - use approved cable avoidance tools prior to the control of the apparatus should be verified - use approved cable avoidance tools prior to the control of the apparatus should be verified - use of mechanical tools or picks until the exact 3. Subject to paragraph 2. UK power Networks have no lability to you in contract, in tort of all the cables have been determined. The mechanical tools or picks until the exact 3. Subject to paragraph 2. UK power Networks have no lability to you in contract, in tort of all the cables have been determined. The mechanical tools or picks until the exact 3. Subject to paragraph 2. UK power Networks have no lability to you in contract, in tort of all the cables have been determined. The mechanical tools or picks until the exact 3. Subject to paragraph 2. UK power Networks has no lability to you in contract, in tort of all the cables have been determined in the paragraph 2. UK power Networks has no lability to you in contract, in tort of the cables have been determined to the cables have been determined.	e finameter proved must be given to all people working near UK Power Networks plant and equipment. Do any economic loss (including without fimitation loss of profit, loss of opportunity, loss of people working near UK Power Networks plant and equipment. Do any economic loss of moduli loss of business, loss of any special or consequential as be avaited that a months after the seue date for excavation purposes. Second and the mage without fimitation loss of the terms of use of the terms of use set out in the present and it is your responsibility to kiendity their location.	be given, sold or made available upon payment of a fee to a third party.	roduced by permission of Ordnance Survey on behalf of HMSO. @ Crown copyright and database rights 2017. All rights reserved. Ordnance Survey Licence numbers 100019826, 100019826 and 100019420. Data has been added to the Ordnance Sur sive property of @ London Power Networks plc or South Eastern Power Networks plc each being a distribution licensee under section 6(1)(c) of the Electricity Act 1989 for the relevant distribution services area as served. Promission for the relevant distribution services area as Plans gen erated by DigSAFE Pro ^{mis} of threse arearcheforeUdig.



UK Power Networks	ALWAYS LOOK UP BEFORE YOU START WORK Refer to HSE Guidance note G56	eo-schematics which show LV mains cables and tages.) Phor to carrying out excavations you must refer ie focation of all known underground plant and	in such additional data are and shall remain the
F N DOURT -451, PHONE 0000 05, 3046 EMERCENCY - 1 you damage a calle a calle and Phone 0000 78, 95,30 (246 m) URGENTY	and i was	Maps produced at 1.2500 scale are G overhead lines (in some cases all volt to the 1.500 records to determine th equipment.	otex hase man : all proprietant rights
The position of the apparatus shown on this drawing is believed to be correct but the original landmarks may i. UK power Networks does not warrant that the information provided to you is correct. The exact position of the apparatus shown on this drawing is believed to be correct but the original landmarks may i. UK power Networks does not warrant that the information provided to you is correct. The exact position of the apparatus shown on this drawing is believed to be correct but the exact position of the apparatus shown on this drawing is believed to be correct but the exact position of the apparatus shown of the apparatus apparatus shown of the apparatus shown of the apparatus apparatus shown of the apparatus apparatus shown of the apparatus apparates apparatus apparatus apparatus apparates apparatus apparates a	The information proved must be given to all people working near UK power Network's plant and equipment. Do any economic loss (including without limitation loss of profit, loss of opportunity, loss of plane that and the first caller the subject or examined or any special or consequential loss of admined without limitation loss of use of	be given, sold or made available upon payment of a fee to a third party.	Benediced by nermission of Ordenance Streaw on behalf of M&CI. @ Fronce convicted and detebase disks 2017. All rights reserved. Ordenance Streaw Lisence numbers 100019626. 100019626. Data has been added to the Ordenance Streaw Stream St

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Appendix C




Appendix D



Manhole Reference	Easting	Northing	Liquid Type	Cover Level	Invert Level	Depth to Invert
0203	611097	280263	F	41.97	40.02	1.95
0205	611098	280295	F		+0.00 -	
us01 0302	611064 611020	280365 280354	F	43.22 42.96	42.45 41.83	u.77 1.13
0303	611018 611028	280388 280402	F	43.28 43.2	42.05 41.99	1.23
0501	611098	280529	F	40.65	40.312	0.338
1201	611199	280288	F			
1202 1203	611124 611143	280240 280247	F	41.43	39.76	1.67
1204 1205	611115 611109	280237 280270	F	41.39 41.9	39.6 39.91	1.79 1.99
1301 1302	611173 61118A	280388 280320	F		•	
1303	611118	280360	F			
1304 1305	611126 611155	280303 280311	F F			
1401	611112 611165	280400 280466	F	- 41.288	40.385	0.903
1501	611155	280560	F	40.19	39.65	0.54
1503	611151	280524	F	40.898	39.965	0.933
1504 1505	611144 611179	280509 280534	F	41.04 41.12	40.078 40.022	0.962
1506	611169	280600 280581	F	39.602 39.835	38.372 39.023	1.23
1508	611162	280593	F	39.574	38.926	0.648
1509 1600	611189 611145	280515 280608	F	- 39.358	38.549	- 0.809
1601 2201	611118 611255	280607 280299	F	39.346	38.779	0.567
2202	611278	280299	F			
2203 2204	611228	280229	F			
2205 2401	611218 611235	280265 280411	F		•	
2501	611236	280564	F	40.12	39.252	0.868
2502 2503	611214	280508	F	41.287	40.402	0.885
2600 2601	611239 611221	280634 280634	F	39.184 39.196	37.734 37.845	1.45 1.351
2602 2701	611217 611299	280604 280716	F	39.521 39.1	38.045 36.89	1.476 2.21
2702 2703	611297 611243	280749 280730	F	38.36 38.57	36.51 37.097	1.85
2704	611298	280734	F	38.759	36.72	2.039
2801 2802	611292 611286	280806 280834	F	11.15 37.43	9.008 35.33	2.142
2803 2804	611224 611240	280860 280869	F	10.097	8.95 8.842	1.147
2805	611281	280873	F	10.74	8.544	2.196 2.07
3201	611303	280252	F	42.76	41.35	1.41
3202 3301	611379 611310	280288 280349	F F	42.569 42.66	40.574 41.8	1.995 0.86
3302 3303	611308 611379	280338	F	42.7	- 40.99?	1.485
3304	611363	280315	F	42.606	41.141	1.465
3402	611306	280410	F	41.42	40.06	1.36
3403 3404	611305 611315	280496 280496	F	41.09 41.48	39.68 39.69	1.41
3405 3406	611308	280494 280410	F	41.03	39.64	1.39
3501	611301	280581	F	40.46	38.79	1.67
3503	611302 611338	280571 280501	F	40.51 41.94	38.88 39.92	1.63
3504	611370 611384	280506 280521	F	42.1 42.16	40.15	1.95
3506	611308	280519	F	40.77	39.5	1.27
3801	611388	280594	F	+1.508 39.52	+0.802 37.58	1.94
3602 3701	611342 611337	280672 280719	F	39.66 39.06	37.98 37.33	1.68
3702 3703	611360 61139A	280722 280733	F	39.28 39.57	37.45 37.83	1.83 1.74
3704	611362	280766	F	12.005	10.284	1.721
3802	611355	280818	F	37.79 11.478	9.434	2.044
3803 3804	611326 611323	280817 280842	F	11.07	9.241 9.404	1.829 1.546
3901 4200	611336 611446	280918 280295	F	36.8 42.343	35.19 39.853	1.61 2.49
4201	611438	280289	F	42.269	39.969	2.3
4301	611472	280329	F	42.435	39.385	3.05
4302 4303	611427 611408	280323 280374	F	42.749 42.335	39.804 40.27	2.945
4304 4305	611442	280389 280319	F	42.161	40.446	1.715
4401	611475	280463	F	42.49	41.23	1.26
4402 4501	611491 611496	280453 280589	F F	42.32 42.35	41.22 41.39	1.1
4502 4503	611496 611407	280595 280530	F	42.34 42.21	41.26 40.63	1.08
4601	611439	280602	F	40.033	38.353	1.68
4603	611463	280691	F	41.85	39.48	2.37
4604 4605	611495 611494	280604 280614	F	42.27 42.29	41.08 40.19	1.19 2.1
4606	611487	280688	F	41.3	40.62	0.68
4610	611486	280697	F	+1.22 40.52	+0.73	2.12
4611 4612	611406 611458	280696 280606	F	40.17	38.2	1.97
4701	611433	280776	F	40.69	38.78	1.91
5201 5205	611551	280275 280259	F	40.83 41.22	40.51	3.73 0.71
5301 5302	611501 611534	280326 280316	F	41.96 41.56	37.87 37.42	4.09 4.14
5401 5401	610592	280417	F		•	
5404	611506	280477	F			
5405 5406	611518 611529	280478 280477	F			
5407 5408	611543 611541	280476 280488	F			
5502	611542	280500	F		•	
5504	611526	280519	F			-
5505 5506	611517 611518	280530 280548	F			
5507	611525	280560	F			
5509	611548	280560	F			
5801 5802	611528 611529	280626 280605	F	42.06 42.26	40.07 40.4	1.99 1.86
5603 5701	611550 611520	280633 280702	F	41.89 41.39	39.98 40.29	1.91
6401	610668 610736	280418 280417	F	41,905	40,455	1.45
9201	610958	28041/	F	41.281	40.721	0.56
9202 9301	610999 610996	280262 280349	F	41.316 42.63	40.506 41.64	0.81
9302 9303	611001 610996	280336	F	42.56	41.6	0.96
9304	610963	280311	F	42.17	41.09	1.08
v305 0251	610993 611095	280361 280299	F S	42.7 42.51	41.91 41.5	0.79
0252 0253	611067 611021	280291 280271	S S	42.18 41.52	40.5	1.68
0351	611014	280385	8 8	43.27	41.1	2.17
0353	611018	280356	s	42.8	40.72	2.08
0452	611030	280430	a S	+2.1/8	41.18	2.02
0651 0652	611098 611067	280531 280519	S S	40.65 41.51	39.43 39.634	1.22 1.876
0653 0654	611080 611098	280590 280590	s s	39.578 39.62	38.016 38.044	1.582
0651	611070	280626	s o	39.075	37.956	1.119
1252	611190	280233	s			
1351	611109 611114	280392 280356	s s	42.68 42.75	41.92 41.62	u.76 1.13
1353 1354	611120 611155	280308 280313	s s	42.49 42.32	41.38 41.21	1.11
1355	611179	280314	S o		-	-
1451	611169 611158	280379 280477	d S	- 41.288	39.775	1.513
1551 1552	611153 611153	280559 280541	S S	40.19 40.805	38.83 38.877	1.36 1.928
1553	611149	280525	s s	40.898	39.237	1.661
1555	611142 611119	280502	d S	41.04 41.121	39.588	1.647
1556	611180 611170	280533 280599	S S	40.25 39.461	39.222 38.524	1.028
1558	611152	280578	s	39.835	38.336	1.499
1560	611132	280558	s	40.2	38.958	1.242
1561 1651	611112 611119	280556 280606	S S	40.22 39.346	38.856 38.083	1.364 1.263
1652	611145	280606	S S	39.388 34	38.117	1.271
2052	611290	281095	s	33.454	31.924	1.53
2053 2151	611292 611286	281067 281153	S S	34.012 32.88	32.502 31.41	1.51
2152 2153	611283 611287	281187 281155	s s	32.344 32.836	31.339 31.586	1.005
2252	611249	281266	s	31.91	30.63	1.25
2253 2254	611272 611277	281223 281230	S S	32.02 32.199	30.83 30.939	1.19
2551 2552	611213 611236	280531 280531	s s	41.281 40.64	39.344 39.534	1.937
2553	611214	280505	s	41.233	39.544	1.689
2851 2852	611219 611220	280603 280612	S S	39.521 39.312	38.787 38.84	0.734 0.472
2753 2853	611298 611288	280767 280876	S S	38.35 10.78	36.59 8.9	1.76
2854	611294	280809	s s	11.15	9.302	1.848
2856	611241	280872	s	10.25	9.18	1.07
2953 2954	611280 611299	280939 280980	S S	36.09 36.02	34.24 33.6	1.85 2.42
2955 3251	611298 611374	281000 280290	S S	35.469 42.592	33.779 40.827	1.69
3351	611374	280314	S o	42.397	41.022	1.375
3352	611340 611366	280313 280489	d S	42.666	41.256 40.2	1.41
3452 3453	611371 611313	280465 280457	S S	42.2 41.48	40.69 40.55	1.51
3454	611314	280413	s	:	-	•
3551	611399	280428	s	42.11	39.86	2.25
3652 3653	611384 611369	280519 280504	S S	42.17 42.08	39.91 40.08	2.26
3554	611310	280507	S S	41.03	40.21 39.41	0.82
3556	611304	280549	S		39.15	-
3853	611344	280674	S	39.67	38.25	1.42
3654	611304	280651	d	<i>3</i> 1.84	38.02	1.82

Manhole Reference	Easting	Northing	Liquid Type	Cover Level	Invert Level
3655	611306 611301	280635 280649	S S	39.87	38.93 38.06
3754	611304	280718	S	39.04	37.31
3756	611358	280724	S	39.28	37.7
3757	611397	280735	S 8	39.57	37.99
3/56 3851	611364	280873	S	37.669	35.729
3852	611358	280819	S	11.478	9.882
3854	611323	280819	S	11.07	9.416
3954	611333 611335	280924 280915	S S	36.766 36.977	35.246 35.547
1251	611444	280296	S	42.352	40.152
4252	611437	280291	S	42.287	40.247
4352	611473	280331	S	42.376	39.616
4353 4354	611428	280325	S	42.659	40.059
4355	611441	280390	S	42.156	40.826
4358 4551	611446	280320	S	42.542	39.902 39.52
4552	611462	280524	S	42.51	39.55
4658 4659	611403 611407	280677 280696	S	40.5	38.91 38.52
4663	611468	280610	S	42.016	39.216
4664	611464	280685	S	40.985	38.525
4666	611466	280651	S	41.542	38.752
4751 4753	611423	280791	S	39.117	37.027 38.213
4754	611460	280705	S	40.64	38.38
5251 5252	611526	280230	S	40.92	38.99 39.262
5351	611510	280333	s	42.057	39.517
5651 5652	611522 611519	280607 280651	S		
5653	611521	280636	S		
5654 5655	611552	280639 280667	S		
9251	610956	280257	S	41.315	38.775
9252 9351	610960	280217 280350	S	40.21 42.62	38.21 40.68
9352	610991	280360	S	42.2	40.94
9353 9354	610999	280336	S	42.53	40.57
9355	610958	280317	S	42.052	39.842
	310305	200433	-	14.04	
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fanhole Reference	Easting	Northing	Liquid Type	Cover Level	Invert Level	Depth to Invert
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	-					
	_					

Easting	Northing	Liquid Type	Cover Level	Invert Level	Depth to Ir
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Appendix E

IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy. It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.



email cbyd@openreach.co.uk

Advance Northce Required fice hours: Monday – Priday OB/00 to 17 day www.openreach.co.uk/cbyd

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Pond

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Planned Cabinet

Reproduced from the Ordnance Survey map by BT by permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationary Office (C) Crown Copyright British Telecommunications plc 100028040 BT Ref : XDD021911 Map Reference : (centre) TM1088581010

Easting/Northing : (centre) 610885,281010 Issued: 05/02/2018 14:20:00

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IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy. It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.



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Map Reference : (centre) TM1088580810 Easting/Northing : (centre) 610885,280810 Issued : 05/02/2018 14:20:35

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email cbyd@openreach.co.uk

ADVIANCE NOTICE REQUIRED (Office hours: Manday - Friday 08.00 to 17.00) www.openreach.co.uk/dayd

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	fo 🔟 Cornerstone Projects		n get BT TV.								£24.99 a month £24.99 a month 18 months Includes BT line rental Includes BT line rental Price after 18 months £42.99 £19 .99 upfront ①
h Telecommunications PLC [GB] https://www.productsandservices.bt.com/broadband/deals/	namb 🛃 V1 Project Accountine 🖽 Long term flood risk 🖷 Grid Reference Finder 🐠 Map abbreviations 😈 Bus Routes 👹 NDR inf	O Great news	You can get speeds up to 17.5Mb with our Unlimited Broadband, and you can	Ip22 4EE Change address >	Hide more about your speed details <	Standard broadband	Download Speed: 7.5Mb-17.5Mb 3Mb	Estimated download speed range*	This speed is an estimate, but it should be accurate to within 1 or 2 Mb Learn more >	Standard broadband	JNLIMITED BROADBAND Essential broadband for browsing and emailing Jp to 17Mb Broadband for browsing and emailing Unimited Monthly usage Free access to over 5 million UK wi-fi hotspots Unimited UK weekend calls



Appendix F





Appendix G

Searches - Cornerstone Projects Ltd

From:Kumar, Krishnaraj < Krishnaraj.Kumar@atkinsglobal.com>Sent:06 February 2018 11:24To:Searches - Cornerstone Projects LtdSubject:RE: Plant Enquiries - Site Ref. 47455 Land at Sturgeon's Farm, Diss - Land at Sturgeon's Farm, Diss - NGR E611055 N280896

Please accept this email as confirmation that Vodafone: Fixed **<u>does not</u>** have apparatus within the vicinity of your proposed works detailed below.

Many thanks.

Plant Enquiries Team T: +44 (0)1454 662881 E: <u>osm.enquiries@atkinsglobal.com</u>

ATKINS working on behalf of Vodafone: Fixed



This response is made only in respect to electronic communications apparatus forming part of the Vodafone Limited electronic communications network formerly being part of the electronic communications networks of Cable & Wireless UK, Energis Communications Limited, Thus Group Holdings Plc and Your Communications Limited.

PLEASE NOTE:

The information given is indicative only. No warranty is made as to its accuracy. This information must not be solely relied upon in the event of excavation or other works carried out in the vicinity of Vodafone plant. No liability of any kind whatsoever is accepted by Vodafone, its servants, or agents, for any error or omission in respect of information contained on this information. The actual position of underground services must be verified and established on site before any mechanical plant is used. Authorities and contractors will be held liable for the full cost of repairs to Vodafone's apparatus and all claims made against them by Third parties as a result of any interference or damage.

IMPORTANT - PLEASE READ:-

Diversionary works may be necessary if the existing line of the highway/railway or its levels are altered, where apparatus is affected and requires diversion, you must submit draft details of the proposed scheme with a request for a <u>'C3 Budget Estimate'</u> to <u>c3requests@vodafone.com</u> These estimates should be provided by Vodafone normally within 20 working days from receipt of your request. Please include proof of this C2 response when requesting a C3 (using the 'forward' option).



Please consider the environment before printing this e-mail

From: Searches - Cornerstone Projects Ltd [mailto:searches@cornerstoneprojects.co.uk]
Sent: 02 February 2018 21:24
To: National Plant Enguiry's <OSM.enguiries@atkinsglobal.com>

Subject: Plant Enquiries - Site Ref. 47455 Land at Sturgeon's Farm, Diss - Land at Sturgeon's Farm, Diss - NGR E611055 N280896

Dear Sirs.

Re: - Underground Apparatus / Plant

Site Ref. 47455 Land at Sturgeon's Farm, Diss - Land at Sturgeon's Farm, Diss - NGR E611055 N280896

In order that all reasonable precautions may be taken to avoid risk to health and safety through contact with any of your existing apparatus during execution of works at the above site location, please provide plan(s) indicating the general position and nature of your apparatus in the locality. In addition, please highlight any



Appendix H



Registered Office Newington House

237 Southwark Bridge Road London SE1 6NP Company: UK Power Networks (Operations) Limited

Registered in England and Wales No: 3870728

Mr. Joshua Pitcher Richard Jackson Ltd The Old Church 4, St Matthews Road Norwich Norfolk NR1 1SP

06 March 2018

Our Ref: 8500081667 / QID 3000012576

Your Ref:

Dear Mr. Pitcher,

Site Address: Sturgeons Farm, Roydon, DISS IP22 4EE

Thank you for your recent enquiry regarding the above premises. I am writing to you on behalf of Eastern Power Networks plc the licensed distributor of electricity for the above address trading as UK Power Networks.

I am pleased to be able to provide you with a budget estimate for the work.

It is important to note that this budget estimate is intended as a guide only. It may have been prepared without carrying out a site visit or system studies. No enquiry has been made as to the availability of consents or the existence of any ground conditions that may affect the ground works. It is not an offer to provide the connection and nor does it reserve any capacity on UK Power Networks electricity distribution system.

1. Budget estimate:

The budget estimation for this work is:

Description

Establish 2 new onsite substations and install LV cables around site to provide services to 420 new houses.

High Voltage Point Of Connection

£500,000 (exclusive of VAT) if the Point Of Connection (POC) is to our High Voltage network within your site.

Description

Existing 11kV and 33kV overhead lines existing through the site which will need to be replaced with underground cables through your access roads.

An additional sum of £210,000 may be chargeable if for diversionary or re-enforcement works.

Page 1 www.ukpowernetworks.co.uk This budget estimate is based on the following assumptions:

- The most appropriate Point of Connection (POC) is as described above.
- A viable cable or overhead line route exists along the route we have assumed between the Point of Connection (POC) and your site.
- In cases where the Point of Connection (POC) is to be at High Voltage, that a substation can be located on your premises at or close to the position we have assumed.
- Where electric lines are to be installed in private land UK Power Networks will require an easement in
 perpetuity for its electric lines and in the case of electrical plant the freehold interest in the substation site, on
 UK Power Networks terms, without charge and before any work commences.
- You will carry out, at no charge to UK Power Networks, all the civil works within the site boundary, including substation bases, substation buildings where applicable and the excavation/reinstatement of cable trenches.
- Unless stated in your application, all loads are assumed to be of a resistive nature. Should you intend to install equipment that may cause disturbances on UK Power Networks' electricity distribution system (e.g. motors; welders; etc.) this may affect the estimate considerably.
- All UK Power Networks' work is to be carried out as a continuous programme of work that can be completed substantially within 12 months from the acceptance of the formal offer.

Please note that if any of the assumptions prove to be incorrect, this may have a significant impact on the price in any subsequent quotation. You should note also that UK Power Networks' formal connection offer may vary considerably from the budget estimate. If you place reliance upon the budget estimate for budgeting or other planning purposes, you do so at your own risk.

If you would like to proceed to a formal offer of connection then you should apply for a quotation, Please refer to our website

http://www.ukpowernetworks.co.uk/internet/en/help-and-advice/documents/the_connection_process.pdf for `**The connection process'** which details our application process. To help us progress any future enquiry as quickly as possible please quote the UK Power Networks Reference Number from this letter on all correspondence.

If you have any questions about your budget estimate or need more information, please do not hesitate to contact me. The best time to call is between the hours of 9am and 4pm, Monday to Friday. If the person you need to speak to is unavailable or engaged on another call when you ring, you may like to leave a message or call back later.

Yours sincerely

allock

Sarah Bullock BARTON ROAD Suffolk, BURY ST EDMUNDS IP32 7BG 01284 726 519 sarah.bullock@ukpowernetworks.co.uk



Appendix I

GTC Ref: East/34107828/406899

Budget Quotation for: Sturgeons Farm, Shelfanger Road, DISS, Norfolk, IP22 4EE

Prepared for: Richard Jackson Partnership Ltd

GTC Contact: John Blowers Mob: 07747 567918 Tel: 01359 240154 Date of Quotation: 20 February 2018







1.0 INTRODUCTION

Summary of Offer

Following your recent enquiry regarding the project at Sturgeons Farm, Shelfanger Road, DISS, Norfolk, IP22 4EE, we have used the information you provided GTC to produce a budget costing to meet your requirements. GTC's price to provide to provide gas & electricity infrastructure (based on the terms of offer set out in this quotation) is a contribution from Richard Jackson Partnership Ltd to GTC of £221,239.90.

Breakdown of Offer

Onsite Costs

This is the cost to provide mains and services to the development within the site boundary:

On-site works	
You pay GTC	£195,330.59

Offsite Costs

These costs include any off-site costs that are required, including the costs of Upstream Network Operators (NWO), to complete the work to supply your site:

Off-Site Works	
Off-site works (GTC) – Gas:	£13,612.64
Network Operator Costs – Gas:	£0.00
Off-site works (GTC) – Electricity:	£4,296.67
Network Operator Costs – Electricity:	£8,000.00
TOTAL OFFSITE – You pay GTC	£25,909.32

2.0 SITE DETAILS

Schedule of Domestic Plots

Property Type	1BF	2BF	2BS	2BT	3BD	3BS	3BT	4BD	4BS	4BT	5BD	Total
Gas	8	42	46	29	29	109	33	71	29	8	16	420
Electricity	8	42	46	29	29	109	33	71	29	8	16	420

3.0 TERMS OF OFFER

Gas Terms

GTC have assumed there will be enough capacity in the Low Pressure network to feed this site. This costing excludes any reinforcement costs that may be necessary from connecting to the upstream gas transporters network.

This quotation includes the excavation and reinstatement costs in the public highway which will be carried out by GTC from the point of connection to the site. GTC have assumed a connection off the GDN/iGT 90mm PE Low Pressure main adjacent to the site entrance and have allowed for 26 metres off-site work (6m road, 20m footpath) from the connection point to the site entrance.

The Developer shall be responsible for all on-site excavation and reinstatement.

GTC have assumed that any existing mains on-site will be abandoned. It is the responsibility of the Developer to arrange works with the gas transporter.

GTC have assumed there are no environmental issues that may impact on the materials or methods of installation of its proposed networks.

GTC have assumed all mains and services feeding 420 properties will be in trenches pre-excavated by the Developer.

GTC's mains will typically be laid down one side of the estate roads to minimise on road crossings, service lengths and mains lengths.

This quotation is based on smart meters in cavity meter boxes.

This quotation is based on all smart meters at the properties being installed by GTC (or its subcontractor) and owned by GTC Pipelines Limited. If the Developer wishes to appoint a third party to install and/or own any gas meters at any of the properties, it shall obtain GTC's prior written consent to do so and, in such circumstances, GTC reserves the right to amend the amounts payable under this quotation accordingly.

GTC's Technical Guidelines for Gas can be found here: <u>http://www.gtc-uk.co.uk/technical-guidelines</u>

Electricity Terms

This quotation includes indicative electric point of connection (PoC) and off-site costs. Costs associated with the PoC are therefore subject to change.

Please note: PoC and off-site costs will be provided when the upstream DNO has provided these details in full. However, PoC and non contestable charges will be the same regardless of who is to own the network.

GTC have assumed a High Voltage (HV) connection due to the size of the site and as such 1 substation will be required and the costs are included in this quote. GTC have assumed that the Developer will carry out all civil works associated with the substation at their own cost.

This quotation includes the excavation and reinstatement costs in public highway , which will be carried out by GTC.

GTC have assumed that the Developer will construct a brick-built housing for the substation(s) to GTC specifications.

If the development is in an area that the environment agency consider to be susceptible to a risk of flooding, then any electrical plant and equipment will need to be established at a level 600mm above the 1 in 100 year predicted flood level, or the Developer will need to guarantee that they have mitigated the risk of flooding by incorporating suitable flood defences.

Diversionary or abandonment works may be required and are excluded from GTC's quote. The details can be obtained by contacting the upstream DNO.

The Developer shall be responsible for all on-site excavation and reinstatement.

GTC have assumed all mains and services feeding 420 properties will be in trenches pre-excavated by the Developer.

GTC's mains will typically be laid down one side of the estate roads to minimise on road crossings, service lengths and mains lengths. This quote does not include ducting as this is the responsibility of the Developer to install suitable ducts and jointing pits at the Developers cost to GTC specifications.

GTC's quote is based on 420 plots having gas heating.

GTC have calculated the total load for the site to be 657kVA.

GTC's quote is based on meter positions for the houses to be external on the front elevation of each property. Where internal meters are to be fitted, the Developer will be responsible for establishing a metering location in accordance with GTC standards (GE-TGI-IG-0015), details of which will need to be confirmed by the Developer.

GTC's quotation excludes meter boxes and hockey sticks. GTC can supply these at an additional charge of $\pounds 20.60$ each for standard meter boxes.

Based on the information you have provided GTC have not included for any lift motors, pumping stations or other disturbing electric loads (such as welders, motors, heat pumps or air conditioning equipment) in GTC's quotation.

GTC's quotation excludes the cost of Temporary Builders Supply (TBS). The indicative cost to connect this is \pounds 1,500, this cost assumes the Developer shall be responsible for all excavation and reinstatement; the Developer will provide a weatherproof lockable box/kiosk with suitable internal space to accommodate the meter board the meter location less than 25m from GTC's installed and energised mains. This price includes for the disconnection of the temporary supply upon request.

GTC's quotation excludes the cost to connect adoptable street lighting columns. GTC can connect these for an additional charge, the current price for this work is £275 per column. This cost includes the supply and lay of 9m of service cable between GTC's existing Low Voltage (LV) mains and the street lights, in this cost GTC have assumed you will provide ducting and excavation to GTC specifications. Prior to the energisation of the street lights you will need to have appointed an electricity supplier for the supply of the street lights. Following the first energisation the terms of connection will be as set out in the National Terms of Connection or in a separate agreement between GTC and yourself.

GTC's Technical Guidelines for Electricity can be found here: <u>http://www.gtc-uk.co.uk/technical-guidelines</u>

4.0 CONFIDENTIALITY

This quotation and associated documentation is confidential between GTC, Richard Jackson Partnership Ltd and their associated parties for this project. It contains commercially sensitive information and should not be divulged to any other party without written permission from GTC.

Should you be successful in obtaining and developing this site, GTC will be pleased to supply a firm quotation. Please return a detailed site plan and a completed quotation request form. GTC trust that this budget costing will be acceptable and look forward to receiving your instructions.

5.0 CONTACT DETAILS

Should you require further details please do not hesitate to contact your GTC Sales Contact, John Blowers (07747 567918) or the Sales Support Team (01359 240154) to discuss further.



Appendix J



Pre-Planning Assessment Report

Shelfanger Road, Diss

Pre-Planning Report

Friday, March 02, 2018

Section 1: Proposed Development

Thank you for submitting a pre-planning enquiry. This has been produced for Richard Jackson Ltd. Your reference number is **00026366**. If you have any questions upon receipt of this report, please contact the Pre-Development team on 0345 606 6087 or email <u>planningliaison@anglianwater.co.uk</u>.

The response within this report has been based on the following information which was submitted as part of your application:

List of Planned Developments								
Type of Development	No. Of Units							
C3 Dwellings	420							

The anticipated residential build rate is:

Year	2018	2019	2020	2021	2022	2023	2024	2025	2026
Build Rate	50	50	50	50	50	50	50	50	20

- The grid reference for the site is TM1105580896
- The site currently does not have planning permission and is located on a greenfield site.

Disclaimer: The accuracy of this report is therefore not guaranteed and does not obviate the need to make additional appropriate searches, inspections and enquiries. You are advised therefore to renew your enquiry should there be a delay in submitting your application for water supply/sewer connection to re-confirm the situation.

Section 2: Assets Affected

Our records indicate that there are no public water mains or public sewers or other assets owned by Anglian Water within the boundary or overlapping your development site. However, it is recommended that you carry out a thorough investigation of your proposed working area to establish whether any unmapped public or private sewers and lateral drains are in existence.

Due to the private sewer transfer in October 2011 many newly adopted public used water assets and their history are not indicated on our records. You also need to be aware that your development site may contain private water mains, drains or other assets not shown on our records. These are private assets and not the responsibility of Anglian Water but that of the landowner.
Section 3: Water Supply

In examining the available capacity for your development site we assess the capacity and costs for two categories of water main. These are:

Strategic – these are the offsite potable water mains which deliver water within an area to a large number of development sites often across a number of towns. The strategic provision of these water mains enables us to provide of the cheapest solution across a large geographical area.

Local reinforcement – these are the offsite potable water mains that connect your site to the closest available public water main. Alternatively, reinforcement may be needed to protect existing houses against the loss of water or water pressure.

On most sites we also have two categories of water mains the Spine Mains and Housing Estate Mains (HEMS). To support your budgeting arrangements we have also examined the estimated cost for delivering the onsite water mains needed for a site of your size.

Water Supply Network

The water supply to the proposed development site can be provided from the existing mains as listed below. The water main has adequate capacity for your development site. Anglian Water cannot reserve capacity and therefore you are recommended to formally apply for a connection at your earliest convenience. Please note that available capacity in our network can be reduced at any time due to increased requirements from existing businesses and houses as well as from new housing and new commercial developments.

The connection point for the site will be from the existing 300mm DI water main in Louies Lane at National Grid Reference TM1128880875

Water Budget Costs

Please note that our charging regime will be changing from the 1st April 2018. The costs below detail how you will be charged up to 31st March 2018 and how you will be charged from 1st April 2018.

Charges up to 31st March 2018

The costs provided in this report are based on the current information available. These costs are provided as an indicative estimate to help inform you on a budget for supplying water to your site.

• The strategic costs are based on a proportion of the total strategic scheme cost. These costs are calculated based on the flow rate that your development requires as compared to the total flow rate that the strategic main has been designed against.

• The local reinforcement costs have been calculated based on the typical costs of providing a length of water main across a similar distance as required for this development site.

• The onsite Spine mains and HEMS costs are provided based on historic Anglian Water construction information.

Based on these estimated and predicted costs, the cost to provide water to your site:

Predicted costs for supplying water to your development		
Strategic Water Mains	Based on	Cost N/A
Estimated Local reinforcement Mains		
Estimated Onsite Water Mains		
Onsite water mains costs		£ 252,000.00
Total Cost for providing the water infrastructure		£ 252,000.00

The above table provides an estimated breakdown of the costs to supply the water infrastructure. A more detailed cost provision will be provided following a formal application for a new water mains or water connection.

Financing your water costs

You will be required to partly contribute towards the cost of supplying water to your site. The amount that you contribute is dependent on your preferred method of financing the site. The Water Industry Act enables you to finance the water mains via either the relevant deficit or discounted aggregate deficit. A full breakdown of these methods is provided on our website at www.anglianwater.co.uk/developers.

In essence, the two deficit options allow us to offset future revenue (from the end customer after they purchase your houses) from the scheme cost. The scheme cost is determined as a hypothetical fixed rate loan provided over 12 years. The two statutory options are:

1. Relevant deficit. This takes the actual annual revenue offset from the actual annual scheme cost repayment. The difference is paid every year over the first twelve years of your site or until the revenue exceeds the annual scheme cost.

2. Discounted aggregate deficit. This enables us to offset the estimated future revenue from the scheme cost. This is calculated over the first twelve years of your site and a commuted sum is calculated as an upfront net present value amount.

Your estimated contribution towards the construction costs are provided in the table below:

Scheme Title:	Shelfanger Road, Diss
Developer:	Richard Jackson Ltd

Year	Occupation Rates
1	50
2	100
3	150
4	200
5	250
6	300
7	350
8	400
9	420
10	420
11	420
12	420
Total	420

Estimated Construction costs		
Onsite water	£	252,000
Offsite water	£	-
Estimated Scheme Cost	£	252,000

Your estimated contribution towards construction costsRelevant Deficit£Discounted Aggregate Deficit£

You will also need to budget for both infrastructure charges and connection costs. The 2017/18 charges are:

Infrastructure Charge	£361.00	per connection
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Please note that we offer alternative types of connections depending on your needs and these costs are available in our annual charges booklet, which can be downloaded from <u>www.anglianwater.co.uk/developers/charges</u>.

Charges from 1st April 2018

As a result of the recent charging rules published by Ofwat, as of the 1st April 2018 our charging regime will be changing. From this date, your development site will be required to pay a Zonal charge for each new property connecting to our water supply network that benefits from Full planning permission.

Payment of the Zonal charge must be made before premises are connected to our water supply network. More information on the Zonal charge can be found at www.anglianwater.co.uk/developers/charges

The Zonal charge consists of two elements. The first is called the 'Fixed Element' which is the same in nature to the Infrastructure charge applied prior to April 2018. The second is called the 'Variable Element' which may vary each financial year.

The elements are combined together to create the 2018/19 Zonal charge for Water:

Fixed Element	£370.00
Variable Element	£88.50

The total Zonal charge payable for your site for Water is:

Zonal charge per new connection - Water	No. Of Units	Total amount payable
£458.50	420	£192,570.00

The estimated* Onsite Water Mains cost for your site is:

Estimated Onsite Water Mains	
Onsite water mains costs	£30,240.00

*A detailed cost breakdown will be provided on receipt of a formal application for a new water main.

In addition, you also have the ability to construct the onsite water mains under a self-lay agreement. In such cases, an Asset Payment is made by Anglian Water following commissioning and adoption of the assets. The Asset Payment is calculated as required in the Water Act 2003. For more information on the self-lay of water mains please see www.anglianwater.co.uk/developers/self-lay.

You will also need to budget for connection costs.

Please note that we offer alternative types of connections depending on your needs and these costs are available in our annual charges booklet, which can be downloaded from <u>www.anglianwater.co.uk/developers/charges</u>.

Section 4: Water Recycling Services

In examining the used water system we assess the ability for your site to connect to the public sewerage network without causing a detriment to the operation of the system. We also assess the receiving water recycling centre and determine whether the water recycling centre can cope with the increased flow and influent quality arising from your development.

Water Recycling Centre

The foul drainage from the proposed development is in the catchment of Diss Water Recycling Centre, which currently has capacity to treat the flows from your development site. Anglian Water cannot reserve capacity and the available capacity at the water recycling centre can be reduced at any time due to growth, environmental and regulation driven changes.

Used Water Network

Anglian Water has assessed your proposals and a desktop study has indicated that a direct connection to the public foul sewerage system is likely to have a detrimental effect on the existing sewerage network. Therefore further hydraulic assessment is required to enable Anglian Water to provide you with a solution for draining the foul flows from the proposed development. There is no additional charge for this work.

Jonathan Hardy, our Pre-Development Senior Engineer for this area, will be responsible for undertaking this additional work. Jonathan will contact you shortly to discuss the timescales and to obtain any further information required. For your reference, Jonathan can be contacted on 0345 60 66 087 Option 1 or at jHardy3@anglianwater.co.uk

If this modelling work confirms your development will have a detrimental effect on the existing sewerage network, the drainage strategy will be detailed within the pre-planning addendum report. This will be issued to you under separate cover within the timescales advised by Jonathan. This will include a no detriment foul drainage solution which will encompass a connection point, details of any upgrades or work required and indicative budgetary costs.

If an alternative drainage solution is required following the work undertaken for the preplanning addendum report, any additional hydraulic modelling work will be at the cost of the developer. A cost and timescale is available upon request.

Please note that Anglian Water will request a suitably worded condition at planning application stage to ensure the strategy is implemented to mitigate the risk of flooding.

Surface Water Disposal

We have examined your development site for available surface water discharge options. It is our understanding that the evidence to confirm your compliance with the surface water hierarchy is not currently available. However once the evidence has been confirmed, then a connection point may be made to manhole 0651 in Newstead Walk at NGR TM1107080625 at a rate of 28.12l/s.

It is your responsibility to provide the evidence to confirm that all alternative methods of surface water disposal have been explored and these will be required before your connection can be agreed. This is subject to satisfactory evidence which shows the surface water management hierarchy as outlined in Building Regulations Part H has been explored. This would encompass the results from the site specific infiltration testing and/or confirmation that the flows cannot be discharged to a watercourse.

Anglian Water's surface water policy follows the Surface Water hierarchy, outlined in Part H of the Building Regulations. Should your assumptions or evidence change then an alternative solution, connection point or flow rate may be required. You are therefore advised to update Anglian Water with the key supporting evidence at your earliest convenience.

As you may be aware, Anglian Water will consider the adoption of SuDs provided that they meet the criteria outline in our SuDs adoption manual. This can be found on our website at <u>http://www.anglianwater.co.uk/developers/suds.aspx</u>. We will adopt features located in public open space that are designed and constructed, in conjunction with the Local Authority and Lead Local Flood Authority (LLFA), to the criteria within our SuDs adoption manual. Specifically, developers must be able to demonstrate:

- 1. Effective upstream source control,
- 2. Effective exceedance design, and

3. Effective maintenance schedule demonstrating than the assets can be maintained both now and in the future with adequate access.

If you wish to look at the adoption of any SuDs then an expression of interest form can be found on our website at: <u>http://www.anglianwater.co.uk/developers/suds.aspx</u>

Trade Effluent

We note that you do not have any trade effluent requirements. Should this be required in the future you will need our written formal consent. This is in accordance with Section 118 of the Water Industry Act (1991).

Used Water Budget Costs

Please note that our charging regime will be changing from the 1st April 2018. The costs below detail how you will be charged up to 31st March 2018 and how you will be charged from 1st April 2018.

Charges up to 31st March 2018

It is recommended that you budget for both infrastructure charges and connection costs. The 2017/18 charges are:

Infrastructure Charge	£361.00 per connection

Charges from 1st April 2018

As a result of the recent charging rules published by Ofwat, as of the 1st April 2018 our charging regime will be changing. From this date, your development site will be required to pay a Zonal charge for each new property connecting to the public sewer that benefits from Full planning permission.

Payment of the Zonal charge must be made before premises are connected to the public sewer. More information on the Zonal charge can be found at www.anglianwater.co.uk/developers/charges

Please note that Water Zonal charges are also applied to new water connections within the Anglian Water region.

The total Zonal charge payable for your site for Sewerage is:

Zonal charge per new connection - Sewerage	No. Of Units	Total amount payable
£471.00	420	£197,820.00

It has been assumed that the onsite used water network will be provided under a section 104 Water Industry Act application. It is recommended that you also budget for connection costs.

Please note that we offer alternative types of connections depending on your needs and these costs are available at our website.





@ Crown Copyright 2014. All rights reserved. Ordnance Survey License Number 100022432Figure 1: Showing your water point of connection at Louies Lane



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Figure 2: Showing your surface water point of connection at manhole 0651 with a Cover Level of 39.08m and an Invert Level of 37.96m

Section 6: Useful Information

Water

Water Industry Act – Key Water Sections:

• Section 41: This provides you with the right to requisition a new water main for domestic purposes to connect your site to the public water network.

• Section 45: This provides you with the right to have a connection for domestic purposes from a building or part of a building to the public water main.

• Section 51A - E: This provides you with the right to provide the water main or service connection yourself and for us to vest them into our company.

• Section 55: This applies where you request a supply of water for non domestic purposes.

• Section 185: This provides you with the right to make a reasonable request to have a public water main, sewer or public lateral drain removed or altered, at your expense. Details on how to make an application and the s185 form is available on our website at http://www.anglianwater.co.uk20/developers or via our Developer Services team on 08457 60 66 087.

Details on how you can make a formal application for a new water main, new connection or diversion are available on from our Developer Services team on 08457 60 66 087 or via our website at <u>www.anglianwater.co.uk/developers</u>

If you have any other queries on the rights to requisition or connect your housing to the public water and sewerage infrastructure then please contact our developer services team at: Developer Services, Anglian Water, PO Box 495, Huntingdon, PE29 6YY or Telephone: 0845 60 66 087 or Email: developerservices@anglianwater.co.uk

Water pressure and flow rate: The water pressure and consistency that we must meet for your site is laid out in the Water Industry Act (1991). This states that we must supply a flow rate of 9 litres per minute at a pressure of 10 metres of head to the external stop tap. If your water pressure requirements exceed this then you will need to provide and maintain any booster requirements to the development site.

Self Lay of Water Mains: A list of accredited Self Lay Organisations can be found at <u>www.lloydsregister.co.uk/schemes/WIRS/providers-list.aspx</u>.

Used Water

Water Industry Act – Key Used Water Sections:

• Section 98: This provides you with the right to requisition a new public sewer. The new public sewer can be constructed by Anglian Water on your behalf. Alternatively, you can construct the sewer yourself under section 30 of the Anglian Water Authority Act 1977.

• Section 102: This provides you with the right to have an existing sewerage asset vested by us. It is your responsibility to bring the infrastructure to an adoptable condition ahead of the asset being vested.

• Section 104: This provides you with the right to have a design technically vetted and an agreement reached that will see us adopt your assets following their satisfactory construction and connection to the public sewer.

• Section 106: This provides you with the right to have your constructed sewer connected to the public sewer.

• Section 185: This provides you with the right to have a public sewerage asset diverted.

Details on how to make a formal application for a new sewer, new connection or diversion are available on our website at <u>www.anglianwater.co.uk/developers</u> or via our Developer Services team on 08457 60 66 087.

Sustainable Drainage Systems:

Many existing urban drainage systems can cause problems of flooding, pollution or damage to the environment and are not resilient to climate change in the long term. Therefore our preferred method of surface water disposal is through the use of Sustainable Drainage Systems (SuDS). SuDS are a range of techniques that aim to mimic the way surface water drains in natural systems within urban areas. For more information on SuDS, please visit our website at http://www.anglianwater.co.uk/developers/suds.aspx . We also recommend that you contact the Local Authority and Lead Local Flood Authority (LLFA) for the area to discuss your application.

Private Sewer Transfers: Sewers and lateral drains connected to the public sewer on the 1 July 2011 transferred into Water Company ownership on the 1 October 2011. This follows the implementation of the Floods and Water Management Act (FWMA). This included sewers and lateral drains that were subject to an existing Section 104 Adoption Agreement and those that were not. There were exemptions and the main non-transferable assets were as follows:

• Surface water sewers and lateral drains that did not discharge to the public sewer, e.g. those that discharged to a watercourse.

• Foul sewers and lateral drains that discharged to a privately owned sewage treatment/collection facility.

• Pumping stations and rising mains will transfer between 1 October 2011 and 1 October 2016.

The implementation of Section 42 of the FWMA will ensure that future private sewers will not be created. It is anticipated that all new sewer applications will need to have an approved section 104 application ahead of a section 106 connection.

Encroachment: Anglian Water operates a risk based approach to development encroaching close to our used water infrastructure. We assess the issue of encroachment if you are

planning to build within 400 metres of a water recycling centre or, within 15 metres to 100 metres of a pumping station. We have more information available on our website at http://anglianwater.co.uk/developers/encroachment.aspx

Locating our assets: Maps detailing the location of our water and used water infrastructure including both underground assets and above ground assets such as pumping stations and recycling centres are available from <u>www.digdat.co.uk</u>. All requests from members of the public or non-statutory bodies for maps showing the location of our assets will be subject to an appropriate administrative charge. We have more information on our website at: <u>www.anglianwater.co.uk/developers/our-assets/</u>

Summary of charges: A summary of this year's water and used water connection and infrastructure charges can be found at http://www.anglianwater.co.uk/developers/charges/

Disclaimer: The information provided within this report is based on the best data currently recorded, recorded within the last 12 months or provided by a third party. The position must be regarded as approximate. If there is further development in the area or for other reasons the position may change.

The accuracy of this report is therefore not guaranteed and does not obviate the need to make additional appropriate searches, inspections and enquiries. You are advised therefore to renew your enquiry should there be a delay in submitting your application for water supply/sewer connection to re-confirm the situation.

Any cost calculations provided within the report are estimated only and may be subject to change.

The responses made in this report are based on the presumption that your proposed development obtains planning permission. Whilst this report has been prepared to help assess the viability of your proposal, it must not be considered in isolation. Anglian Water supports the plan led approach to sustainable development that is set out in the National Planning Policy Framework (NPPF). As a spatial planning statutory consultee, we assist planning authorities in the preparation of a sustainable local plan on the basis of capacity within our water and water recycling (formerly referred to as wastewater) infrastructure. Consequently, any infrastructure needs identified in this report must only be considered in the context of up to date, adopted or emerging local plans. Where local plans are absent, silent or out of date these needs should be considered against the definition of sustainability set out in the NPPF as a whole.

No liability whatsoever including liability for negligence is accepted by Anglian Water Services Limited for any error or inaccuracy or omission including the failure to accurately record or record at all, the location of any water main, discharge pipe, sewer, or drain or disposal main or any item of apparatus.



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