

PROJECT MANAGEMENT – DEVELOPMENT - UTILITIES

Richborough Estates Ltd and Lone Star Land
Heyford Park
Upper Heyford, Oxfordshire

Utilities Assessment Report

PROJECT MANAGEMENT – DEVELOPMENT - UTILITIES

Birmingham
Livery Place, 35 Livery Street, Colmore Business District
Birmingham, B3 2PB
T: 0121 233 3322

Leeds
Whitehall Waterfront, 2 Riverside Way
Leeds, LS1 4EH
T: 0113 233 8000

London
11 Borough High Street
London, SE1 9SE
T: 0207 407 3879



Manchester
11 Portland Street
Manchester, M1 3HU
T: 0161 233 4260

Nottingham
5th Floor, Waterfront House, Station Street
Nottingham, NG2 3DQ
T: 0115 924 1100

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				C.Hines	
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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY	
Electricity	<p>There is an existing network of Scottish and Southern Electricity Network (SSEN) Infrastructure maintained high voltage infrastructure shown within and in close proximity to the site boundary. Asset records obtained show underground (UG) and overhead (OH) 11kV assets running parallel with the southern and eastern borders of site (off Camp Road and Chilgrove Drive), this network supplies 11kV OH cables crossing through the centre of site to supply properties associated with Letchmere Farm. It is anticipated that diversion/protection works will be required on SSEN 11kV OH asset within the boundary to facilitate the on-site construction.</p> <p>Present to the south-west, on Camp Road and adjoining streets, GTC maintain HV and LV assets supplying residential and commercial properties in the local area.</p> <p>SSEN confirms in a supply enquiry, capacity for electricity heated and gas heated properties can be secured on their network, works entail installing a new circuit breaker at Heyford Park Intake Primary Substation approximately 481m from the site boundary, and lay associated cable; it is proposed that a Ring Main Unit will be installed within the site boundary and cost provided include the installation of Low Voltage cable downstream of the newly installed substation.</p>
Gas	<p>The proposed development is situated in an area where SGN provide the primary infrastructure and GTC maintain a small, imbedded network to the south of the proposed site development (on Camp Road and adjoining streets); no Gas assets are shown within the site boundary.</p> <p>A new development enquiry has been submitted to SGN (ref: 2252702 dated 14/12/2021) to supply circa 218 domestic dwellings, SGN have confirmed that they will provide a developer enquiry response by 25/01/2022.</p>
Clean Water	<p>Water records received from Thames Water Ltd (TWL) show a well-established clean water network to the south of the proposed development, on Camp Road. Shown running parallel with the southern site boundary, TWL maintain a 355mm Polyethylene (PE) large diameter trunk main and a 4" Cast Iron (CI) water main; no assets are shown within the site boundary.</p> <p>TWL have advised, there is sufficient capacity in the existing network to service circa 49 residential properties, it is advised that further network modelling is undertaken to understand the existing network constraints and highlight the need for network reinforcement.</p>
Foul Water	<p>The proposed development is situated in an area where the wastewater network is privately owned, with the parent infrastructure provided by Thames Water Ltd. The well-established privately owned networks are shown near the northern, western, and southern site boundaries; no wastewater assets are shown within the site boundary.</p> <p>The TWL developer response received) confirms there is sufficient capacity in the existing network to receive foul flows from the proposed development. TWL have advised following planning permission TWL would further assess the network to see if there is a more cost viable connection.</p>
Telecommunications	<p>Openreach asset records show a mature telecommunications network operating within and near the proposed site boundary. Entering the site boundary to the north, off Chilgrove Drive Openreach maintain OH cables and associated poles; further to OH cables, UG cables and chambers are shown in immediate proximity to the southern boundary (on Camp Road). It is not anticipated that diversionary works will be required to facilitate on site construction, protection/diversion works are anticipated to deliver road improvement works on Camp Road.</p>
<p>This summary should be read in conjunction with BWB's full report (UHO-BWB-XX-ZZ-RP-YE-SDS_0002-SO-P01) and reflects an assessment of the Site based on information received by BWB at the time of production.</p>	

All costs shown within this report are exclusive of VAT.

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1. INTRODUCTION

Instruction

- 1.1 BWB Consulting (BWB) has been appointed by Richborough Estates Ltd and Lone Star Land, to prepare a Utilities Assessment Report (UAR) to evaluate any potential impacts on the existing utility infrastructure from the proposed development, and to obtain relevant and intermediate level information regarding the requirement for any diversionary works.
- 1.2 The purpose of the UAR is to identify any existing utility infrastructure that may constrain the development within and around the site boundary, and to identify a strategy for the delivery of future supplies to the site. The assessment also considers whether any utility service diversions are required to facilitate the development proposals.
- 1.3 The proposed development site is anticipated to consist of 230 residential units. A proposed masterplan prepared by Edge Placemaking Group Ltd (ref: 167_SK02_- Illustrative concept plan) is contained within **Appendix 1**.

Scope of Works

- 1.4 The report will outline and assess the utilities issues in relation to the proposed development site and will identify the requirements for new utility infrastructure, potential upgrade/reinforcement works, and/or the need for further investigation/modelling. The scope of works include;
 - i. Asset Records – request the latest records showing the extents of existing statutory services present within the vicinity of the site and plot on topographical survey/OS background mapping to provide a Composite Services Plan (CSP).
 - ii. Diversion of existing services – undertake a review of the CSP against the proposed site layout to identify which utility assets are required to be diverted or accounted for within the development layout proposal.
 - iii. Demand calculations – estimate the total utility load demand requirements for the development, for each of the mains utility services.
 - iv. New connections – Identify points of connection and any reinforcement requirements for the provision of new supplies, including indicative infrastructure routes from the incumbent suppliers and independent provide.

2. THE SITE

Site Location

- 2.1 The layout of site is presented below, shown in **Figure 2.1**. The site is currently greenfield land located south of the former RAF Upper Heyford Airfield; The site is bordered by Camp Road to the to the south, Chilgrove Drive to the east and Trenchard circus along the western boundary. The proposed site development can be found at national grid reference SP521258.

Figure 2.1: Site Location Plan



3. UTILITY PROVIDERS

- 3.1 BWB has, for the purpose of this report, made initial utility search enquiries to the statutory undertakers to ascertain existing utility infrastructure within and adjacent to the proposed development site.
- 3.2 The site is shown to be situated in an area where Scottish and Southern Electricity Networks and GTC operate the electricity network. GTC operate the gas network and Thames Water maintain the clean, foul and surface water drainage. The telecommunications network is provided by Openreach.
- 3.3 The statutory undertakers who have assets within or in the vicinity of the proposed development site are listed in the **Table 3:1** below,

Table 3.1: Statutory Undertaker List

Utility	Provider	Location
Electricity	Scottish and Southern Electricity Networks	Within the site
Electricity	GTC	Near the Site
Gas	SGN	Near the site
Gas	GTC	Near the site
Potable Water	Thames Water Ltd	Near the site
Foul/Surface Water	Thames Water Ltd	Near the site
Telecommunications	Openreach	Within the site

- 3.4 From a review of the existing asset records obtained by BWB, a Composite Services Plan (Drawing No: UHS-BWB-GEN-XX-DR-VUT-001) has been prepared showing the extent of the existing utility infrastructure within and adjacent to the proposed development site boundary, this is contained within **Appendix 2**.
- 3.5 The information contained within this report is derived from data provided by the core main public utility companies. No information has been provided in relation to "private" infrastructure that might be present within or adjacent to the proposed development site.
- 3.6 It should be noted that all asset records obtained have a validity period of a maximum 3-6 months, and the capacity investigation responses received at the time of writing this report are correct and have a validity period which ranges from 3-12 months, the result of these enquiries may be subject to future reinforcement/change by network operators.
- 3.7 Where statutory undertakers have identified apparatus within or near the site proposal, those services are discussed withing the following sections.

4. UTILITIES INFRASTRUCTURE DEMAND ASSESSMENT

- 4.1 A speculative schedule was prepared by BWB, shown in **Appendix 3** for each respective utility company for the Upper Heyford project, this illustrates a load requirement for a circa 230 residential units. The speculative load schedule should be considered as aspirational at this stage but considered appropriate for the assessment of strategic utilities provisions, these figures are considered to be robust, as they represent a delivery programme.
- 4.2 To determine the predicted utility demands that will be generated by the development proposal, individual requirements have been calculated for electricity, gas, clean water and wastewater. These calculations have been based on the proposed land use and calculated using a range of sources, included but not limited;
- I. Assumptions on usage provided by the statutory incumbent utility providers.
 - II. Building Services Research and Information Associated publications (BSRIA).
 - III. British Water code of practice.
 - IV. Sewers for adoption 7th addition.
- 4.3 This approach has been taken to encourage further network assessments from the utility providers to provide an understanding of the existing capacity within their network and an indication of how much of the proposed development may be delivered without the need for reinforcement. Where reinforcement works are required, the network assessments should identify the likely trigger points for these works.

5. ELECTRICITY INFRASTRUCTURE

Existing Electricity Infrastructure

- 5.1 The proposed site development resides in an area where Scottish and Southern Electricity Networks (SSEN) maintain the parent electricity infrastructure and GTC maintain an independent network adjacent to the southern boundary (on Camp Road and adjoining streets). Records show no GTC assets within the site boundary, with SSEN high voltage (HV) assets within the proposed development boundary.

Existing Scottish and Southern Electricity Networks Infrastructure

- 5.2 Present within the site boundary, parallel with the southern and eastern boundaries, SSEN maintain both underground (UG) and overhead (OH) 11kV HV assets. Digitised parallel with the southern boundary (off Camp Road), 2 no. 11kV UG asset are shown adjacent to the existing hedge line, these assets are present along the southern boundary in its entirety and exit to the west onto land east of the proposed development. The UG 11kV HV assets are shown to be the primary feed to further OH 11kV HV assets within the site, HV assets are shown to transition above ground and run parallel with the eastern site boundary, crossing the development from east to west, terminating at Letchmere Farm.
- 5.3 SSEN have advised, the associated stand-off/easement associated with 11kV OG HV assets is 3m either side of the centreline, proposed permanent structures will not be permitted within this area; further consultation with SSEN will be required for works near these assets.
- 5.4 Further to HV assets shown within the site boundary, SSEN maintain a HV networks to the south of the proposed development boundary, a well-established network of 33kV HV OH assets and associated primary sub-station are shown within land adjacent to the southern boundary, off camp Road, records indicate these as integral the local area.
- 5.5 Shown to supply commercial and domestic properties associated with Letchmere Farm outside the north-western boundary, SSEN maintain a small LV network maintained by the HV OH assets crossing the proposed development.

Existing GTC Infrastructure

- 5.6 Present to the south-west, on Camp Road and adjoining streets, GTC maintain HV and LV assets supplying residential and commercial properties in the local area. The source location for this network is a primary sub-station associated with the 33kV and 11kV SSEN assets shown within and around the site boundaries; No GTC assets are shown within the site boundary.

Diversiory Works

- 5.7 As stated in section 5.2, SSEN maintain 11kV OH and UG assets within the boundary, along the southern and eastern boundary. It is anticipated that diversionary works will be required to relocate the OH HV asset present crossing the proposed development, permanent structures are shown within immediate proximity to the advised 3m stand-

off/easement corridor; SSEN will likely require an alternate route through the site development as this is the primary feed to commercial on residential premises associated with Letchmere Farm.

- 5.8 It is not anticipated that clashes will be identified with on-site construction and the UG 11kV present along the southern border, however, localised diversion/protection measures may be required to enable construction of the proposed site access and service road proposed off Camp Road.
- 5.9 SSEN records show an UG 11kV asset located in the adjacent land to the east of the proposed development, it is likely that diversion/protection will be required to facilitate the proposed carriageway alterations at the junction of Camp Road and Chilgrove Drive, further construction/level change detail will be required for SSEN to assess the potential constraints of these works before progressing to a detailed diversionary estimate.

Proposed Infrastructure

- 5.10 SSEN has been engaged with to provide costs to supply the full development of circa 230 domestic dwellings, a response has been received for 2 no. options, Gas central heated and all electric storage heaters.
- 5.11 Demand budget estimate received (ref: EVN636 dated 22/12/2021) states, to provide the proposed development with a 1.5MVA connection to facilitate electric heated properties will cost an estimated £336,192.00. Costs are based on laying 2 no. 240mm cables from Heyford Park Intake primary substation, approximately 481m away from the proposed development, 2 no. circuit breaker installations will be required to be installed at the primary substation to facilitate the new connection. It has been assumed that all on site connection works will be undertaken by SSEN, costs include the installation of a ring main unit on the southern site boundary, approximately 429m of 240mm cable has been assumed for the on-site infrastructure.
- 5.12 Budget estimate received (ref: ENV634 dated: 22/12/2021) for a 500KVA connection, for gas heated dwellings states, an estimated cost of £100,093.00 will be required. Costs are based on laying 2 no. 150mm cables from Heyford Park Intake, terminating at a proposed ring main unit inside the southern boundary. Costs include installing approximately 429m of 150mm cable to provide on-site infrastructure to individual meter points.
- 5.13 SSEN have advised, the initial proposal includes the installation of a new distribution substation on a 4x4m plot and require 24hour vehicular access for operations and maintenance, this land parcel should be provided by the customer at no costs to SSEN with all associated legal costs shall be borne by others. No costs have been included in the budget estimates to facilitate this land acquisition.
- 5.14 The costs provided are based on SSEN undertaking both contestable works and non-contestable works; you have the option to appoint an Independent Connection Provider (ICP) or Independent Distribution Network Operator (IDNO) to carry out all the onsite works, referred to as the contestable works, any connection to the existing HV network must be undertaken by WPD, these are the non-contestable works.

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- 5.15 SSEN have not carried out detailed design work or undertaken networks studies to confirm that the network can accommodate the requested capacity, therefore, the budget estimates are not a guarantee of capacity or confirmation that no further network reinforcements will be required to facilitate the proposed development. Any network assessment works will be carried as part of a formal connection request, these analysis works will be subject to charge which will be made clear upon request.

6. GAS INFRASTRUCTURE

Existing Gas Infrastructure

- 6.1 The proposed site development is situated in an area where SGN maintain the core gas infrastructure and GTC maintain an embedded network near the site boundary, no gas assets are shown within the site boundary.

Existing SGN Infrastructure

- 6.2 Asset records received from SGN show no assets within or in immediate proximity to the site boundary, SGN maintain a medium pressure network approximately 1.7km to the west of the proposed development supplying the area of Lower Heyford.

Existing GTC Infrastructure

- 6.3 GTC records received (dated 03/09/2021) show a mature gas infrastructure under construction to the southwest of site, it is anticipated that this recent this network has been installed serve the developing area, records show SGN's 250mm MP asset on Camp Road as the source point to this network.
- 6.4 Situated in close proximity to the western boundary, GTC asset records show a recently installed 90mm LP polyethylene (PE) gas main servicing properties in the area of Letchmere Farm (off Trenchard Circus), this asset is well reinforced by GTC PE assets installed to the west.
- 6.5 Plans received show, GTC plan to extend a 250mm MP asset from SGN infrastructure west of Camp Road, proposals show this asset terminating approximately 500m from the proposed site access on site.

Diversionsary Works

- 6.6 Asset records received from SGN and GTC show no live gas assets are present within the development boundary, therefore, it is deemed that no diversionsary works will be required to facilitate the current proposals. As the proposed site access will be through phase 1, it is not deemed that localised diversionsary works will be required to facilitate proposed site accesses.

Proposed Infrastructure

- 6.7 A new development enquiry has been submitted to SGN (Ref: 2252702 dated: 14/12/2021) for circa 230 domestic dwellings, SGN have advised that the enquiry response will be issued no later than 25/01/2022, BWB will update the report following receipt of this.
- 6.8 GTC have been approached in relation to availability in their proposed infrastructure located to the south-east of the proposed development, on Camp Road and adjoining streets. It has been confirmed, no connection can be made to their proposed infrastructure without first confirming with SGN if capacity is available.

7. CLEAN WATER INFRASTRUCTURE

Existing Clean Water Infrastructure

- 7.1 Water records received from Thames Water Ltd (TWL) have identified assets near the site boundary service the Heyford area, no clean water assets are shown within the boundary itself.
- 7.2 Adjacent to the southern boundary, in the south of Camp Road, TWL maintain a 355mm high performance polyethylene trunk main (HPPE), at the junction of Chilgrove Drive, this asset connects into the clean water network via a valve bridge situated in the carriageway; the trunk main continues to the east of Camp Road.
- 7.3 Shown running Parallel with the 355mm trunk main, TWL maintain a 4" Cast Iron (CI) water main in the southern footway of Camp Road, this asset continues to the south, away from site to supply the local area.

Proposed Diversionary Works

- 7.4 It is not anticipated that diversion/protection works will need to be considered in line with on-site development works, TWL asset records shown no clean water assets within the site boundary.
- 7.5 Consideration for the diversion/protection of the 355mm HPPE and 4" CI clean water assets at the junction of Camp Road and Chilgrove Drive is required, any level changes associated with highway improvement works will require approval prior to construction stage; further construction/level change detail will be required for TWL to assess the potential constraints of these works before progressing to a detailed diversionary estimate.

Proposed Clean Water Infrastructure

- 7.6 TWL have advised in their developer enquiry response (Ref: DS6090849 dated: 14/12/2021), has confirmed that there is sufficient capacity in the existing infrastructure to serve up to 49 residential dwellings; the point of connection advised in the capacity report is to a 4" CI water main located near the southern boundary, on Camp Road.
- 7.7 The developer response states, TWL are unable to confirm capacity for the full site allocation without further modelling; further investigation will highlight the need for network reinforcement. Network modelling will be undertaken at TWL cost if it can be proven that the land is owned by the applicant, it has been requested that Land Registry and Planning Application documents are submitted.
- 7.8 If relevant documentation is not available at this time, TWL will share the cost risk by entering into an underwriting agreement, whereby, if first occupancy has not been achieved within five years of the complete upgrade, the design study cost shall be payable by the applicant; TWL do not ask for payment upfront.

- 7.9 Once instructed, TWL advise lead times of up to 6 months to undertake modelling works, if reinforcement works are required, a further 12 months has been advised to design and construct network upgrades to provide a suitable connection point.

8. FOUL AND SURFACE WATER INFRASTRUCTURE

Existing Foul and Surface Water Infrastructure

- 8.1 The proposed site development is situated in an area where the foul sewer network is privately owned and Thames Water maintain the parent wastewater infrastructure, records show well-established privately owned sewers near the northern, western, and southern extents of the site, no wastewater assets are present within the proposed development boundary.
- 8.2 Shown adjacent to the northern boundary, a privately maintained pumping station associated with the northern combined sewer network, a well-established network of combined sewer assets is shown downstream of this asset servicing the locate area north and west of the proposed development.
- 8.3 In close proximity to the south of site, in the southern footway of Camp Road, further combined sewers are present terminating at private water treatment works and pumping station; These assets maintain supply to the east of Camp Road and adjoining streets.

Diversiory Works

- 8.4 A review of the TWL asset records in line conjunction with the proving layout show, no foul and surface water assets are present within the site layout itself; therefore, no diversiory works are anticipated to develop the proposed development.

Proposed Foul Water Infrastructure

- 8.5 The TWL pre-development enquiry (Ref: DS6090860 dated: 24/12/2021) confirms, there is sufficient capacity in their existing infrastructure to discharge foul flows from the proposed development. TWL have provided a point of connection to the manhole Ref: MH9901 located west of the proposed site development located within Camp Road.
- 8.6 TWL have advised, further investigation into the privately owned sewers and treatment works shown to be owned by STW Connect near the southern boundary can potentially provide foul water network which may offer a more financially viable option.
- 8.7 As stated within the BWB Drainage Strategy ¹, a further option could be to provide an on-site treatment works with the direct outfall to Gallows Brook, subject to the necessary consents and approvals from the Environmental Agency.
- 8.8 It is recommended that following planning permission the developer request TWL to re-assess the network, with consideration to the water usage restrictions imposed by Building Regulations, the capacity in the network to take foul flows will be more than sufficient to cater for the average daily flow from the development. If TWL during their assessment identifies improvements works are required to the existing network these

¹ UHO-BWB-XX-ZZ-RP-YE-SDS_0002-S0-P01

works will be implemented by TWL at their cost without impact upon the development timescales.

- 8.9 TWL are obligated to accept foul flows from the development with the benefit of planning consent and would therefore take necessary steps to ensure there is sufficient treatment capacity available. An S106 agreement of the Water Industry Act 1991, will need to be completed for the final connection to the existing foul water sewer network being undertaken via a S98 Agreement of the Water Industry Act 1991.

Proposed Surface Water Infrastructure

- 8.10 Under Section H of the Building Regulations state, the disposal of soakaways should be considered as the primary method for surface water drainage.
- 8.11 If soakaways are not possible, sewer records show watercourses in close proximity to the southern border of site. These options should be explored further with flow rates subject to Lead Local Flood authority approval.
- 8.12 If evidence can be provided that soakaways are not feasible, a connection to the 255mm VC surface water sewer to the west of the site in Buchanan Road, could be feasible subject to network modelling.

9. TELECOMMUNICATIONS INFRASTRUCTURE

Existing Openreach infrastructure

- 9.1 A review of the Openreach asset records show overhead (OH) and underground (UG) apparatus operating within and in close proximity to the proposed site development.
- 9.2 Entering the northern boundary, off Chilgrove Lane, Openreach manage a modest network of OH cables and associated poles; these assets are shown to service existing commercial premises in land north of the proposed development, these assets are supplied from an UG network to the west of site, along the western verge of Chilgrove Lane.
- 9.3 Further to OH assets to the north, Openreach maintain UG cables and chambers in immediate proximity to the southern border, on Camp Road; this asset is shown to be integral to surrounding networks to the east of site (on Trenchard Circus) and local areas south of Camp Road.

Diversionsary Works

- 9.4 As noted in section 6.3, Openreach maintain UG cables and chambers in immediate proximity to the southern boundary (on Camp Road), it is anticipated that diversionsary works will be required to suitably protect telecommunications assets in this area, due to road layout changes and proposed site access.
- 9.5 Although Openreach OH assets encroach into the northern boundary, off Chilgrove drive, it is not anticipated that diversion will be required to facilitate proposed permanent structures; It is advised that Openreach are consulted once the masterplan has been finalised to advise on safe working within close proximity to their OH lines.

Proposed Infrastructure

- 9.6 It is envisaged that the supply strategy will be via a new connection the existing infrastructure off Larsen Road as the locations of the proposed access to the site with new infrastructure running through the development in line with the proposed masterplan.
- 9.7 Early engagement with telecommunications providers is required to understand the potential to supply the proposed development. Openreach normally provide telephone and broadband services to all new developments free of charge, with the end user ultimately paying for the connection costs. All civils works will typically be undertaken by the developer using free issue. Openreach ducts and Openreach specified duct boxes to the Openreach confirmed design which will allow for Openreach to pull cables through newly installed ducts as and when required.
- 9.8 Openreach will make payments to the developer for construction and installation of the Openreach network on new developments on a per plot basis. The payment amounts are agreed between Openreach and the House Builders Federation (HBF).

- 9.9 Further enquires to alternative telecommunications companies is also recommended to understand the telephone and broadband service offerings available to the future on site customers.

10. CONCLUSION AND RECOMMENDATIONS

Summary of Investigations

10.1 The table below summarises the result of investigations undertaken by BWB Consulting.

Table 10.1: Summary of Investigations

UTILITY PROVIDER	EXISTING UTILITY INFRASTRUCTURE		NEW UTILITY INFRASTRUCTURE REQUIREMENTS
	ONSITE / NEAR DEVELOPMENT	DIVERSION REQUIREMENTS	
Scottish and Southern Electricity Networks/GTC (Electricity)	<p>OH and UG 11kV HV assets shown within and crossing through the site boundary.</p> <p>UG 11kV shown parallel with the western and southern site boundary (on Chilgrove Drive and Camp Road)</p>	<p>Diversion works anticipated to relocate the 11kV HV OH asset present through the site boundary.</p> <p>Diversionary works anticipated to facilitate road alteration works on Camp Road, UG 11kV asset shown within work area.</p>	<p>SSEN have confirmed, capacity can be achieved for full site development.</p> <p>Connection to Heyford Park Intake approximately 481m from the site boundary, Ring Main Unit to be installed on the site boundary to provide either 1.5MVA and 500KVA (electricity heated and gas central heating)</p>
SGN/GTC (Gas)	<p>Parent gas network provided by SGN, no asset shown near the proposed site development.</p> <p>GTC show a proposed embedded gas network in close proximity to the southern boundary (on Camp Road)</p>	<p>No SGN/GTC assets shown within the site boundary, protection/diversionary works not anticipated to facilitate the on-site development or highway improvement works.</p>	<p>Developer enquiry submitted to SGN 14/12/2021, response expected no later than 25/01/2022.</p>
Thames Water (Clean)	<p>TWL maintain a 355mm PE large diameter trunk main and 4" CI asset to the south of the site boundary, on Camp Road.</p>	<p>No TWL assets shown within the site boundary, protection/diversionary works not anticipated to facilitate the on-site development, however, protection/diversionary works may be required to facilitate highway improvement works on Camp Road.</p>	<p>TWL developer enquiry states, the existing infrastructure has sufficient capacity to service circa 49 domestic dwellings, further network modelling required to understand reinforcement requirements.</p>

<p>Thames Water (Waste)</p>	<p>Records indicate, TWL maintain the primary infrastructure in the area, no TWL assets are shown within the vicinity of the site boundary. Privately owned sewers shown adjacent to the northern, southern and western site boundary.</p>	<p>No waste-water assets shown within the site boundary, protection/diversionary works not anticipated to facilitate the on-site development or highway improvement works.</p>	<p>TWL developer enquiry response states, their existing infrastructure which has sufficient capacity to receive foul flows from the proposed development.</p>
<p>Openreach (Telecommunications)</p>	<p>Openreach overhead and underground assets are shown within and adjacent to the site boundary.</p>	<p>Disconnection works anticipated to facilitate the site development. Diversion/Protection works may be required to facilitate the highway improvement works proposed to the south of site (on Camp Road).</p>	<p>Openreach normally provide telephone and broadband services to all new developments free of charge.</p>

Conclusions

- 11.1 The existing site surrounds appear to be well served by the main utility services. Based on the information obtained from the utility providers, a few localised diversions may be required to facilitate the development and site entrances. However, please note that it is not anticipated that any of these requirements provide a barrier to the development.
- 11.2 Following a review of the existing assets shown in the composite Utility Plan in conjunction with the current site boundaries, it is anticipated that diversion works will be required to facilitate construction of permanent structures, likely routing for these assets would be in the service road maintaining access to the domestic properties in the centre of site; consideration for the requirement of wayleaves should be considered for future means of access and maintenance when relocating into privately maintained roads.
- 11.3 Following a review of the TWL used water conveyance to the connection point is considered as Onsite Work and includes all work carried out upstream from of the Point of Connection, including making the connection to TWL's existing network.
- 11.4 Capacity supply responses have been procured by BWB for the electricity and foul water networks, showing a tiered approach to a supply strategy for the proposed development, they have confirmed that there is sufficient capacity within there existing infrastructure to provide supply to circa 230 dwellings; This now sets a foundation for further engagement with the utility providers once the development proposal is fixed.
- 11.5 Supply response received for foul water has confirmed that the existing network would have sufficient capacity to maintain foul flows from the proposed development. TWL

have advised further modelling assessment would be required for the clean water which will require reinforcement to their existing network.

- 11.6 BWB will update SGN developer enquiry response (Ref: 2252702 dated: 14/12/2021) for circa 230 domestic dwellings, SGN have advised that the enquiry response should be issued no later than 25/01/2022,

Recommendations

- 11.7 Following submission of the planning application, BWB recommend further consultation with Thames Water Limited and investigate ownership of the privately owned (STW Connect) foul water and treatment works shown south of the development, this network may offer a more cost viable point of connection.
- 11.8 It is recommended that the developer enters an underwriting agreement with TWL to model the clean water network to cater for the full development.
- 11.9 Early consultation with SSE is advised to understand constraints and potential costs relating to the diversion of the overhead 11kV asset shown crossing the site boundary; this asset is shown to be integral to Letchmere Farm, to the west, a suitable route though the site will need to be agreed.
- 11.10 It is advised, once the masterplan has been finalised that a trial hole program is undertaken to trace the line and level of assets that may clash with utilities located on Camp Road, this will identifying the exact line and level of assets effected by highway improvement works and may negate the need for diversion for the proposed site entrance.
- 11.11 It is recommended that further consultation with the relevant companies is undertaken closer to the time of development to confirm the availability of capacity within the relevant utility networks.
- 11.12 We recommend that detailed proposals and quotations are sought from the utility providers, and the open market at detailed design stage to realise the best financial offering.

APPENDICES

APPENDIX 1: Proving Layout



Do not scale from this drawing.

This drawing is for planning purposes only. It is not intended to be used for construction purposes. The accuracy of this drawing may be reliant upon survey information provided by third parties. Whilst all reasonable efforts are used to ensure drawings are accurate, edge Placemaking Group Ltd accept no responsibility or liability for any reliance placed on, or use of, this plan by anyone for purposes other than those stated above or for errors arising from third party information.

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DISCUSSION

- Site boundary (11.69ha)
- 1 bed
- 2 bed
- 3 bed
- 4bed

Rev.	Date	Description
Heyford Park NORTH		
Proving Layout		
Job ref: 374	Drawing number: SK02	Revision: -
Scale: 1:2,000 @ A3	Date: Nov 2021	



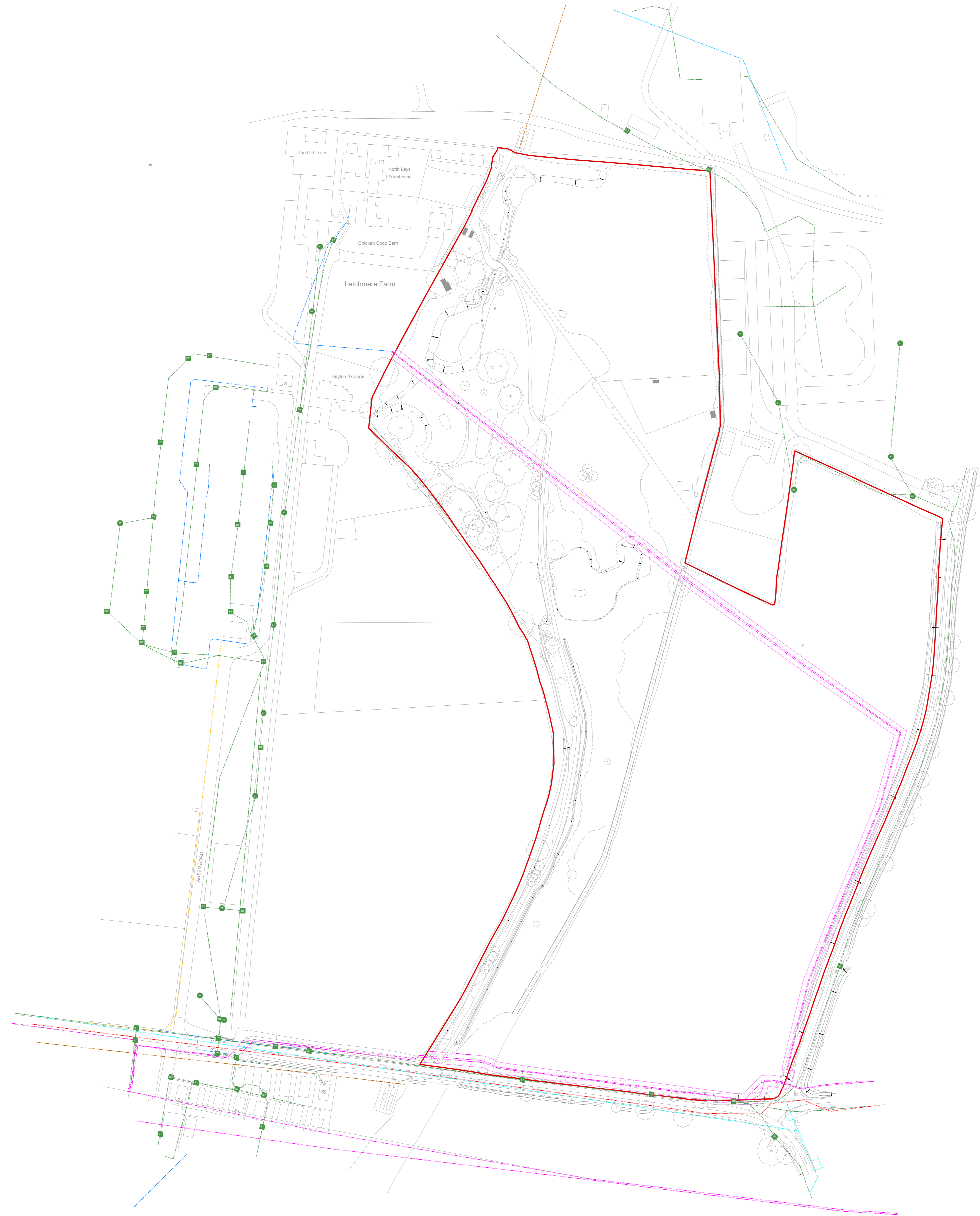
part of
edge Placemaking Group Ltd
Company Reg No: 11447550 VAT No: 299072069

Suite 2
7 Buttermarket
Thame
Oxfordshire
OX9 3EW

01865 522395
enquiries@edgeUD.co.uk
www.edgeUD.co.uk

Dwelling Size	Required			Actual		
	Market (65%)	Affordable (35%)	TOTAL	Market	Affordable	TOTAL
1 bed	6.37	17.15	24	0	0	22
2 bed	31.85	24.01	56	0	0	48
3 bed	57.33	24.01	81	0	0	80
4+ bed	31.85	3.43	35	0	0	39
	127.4	68.6	196	0	0	189

APPENDIX 2: Composite Services Plan



Notes

1. Do not scale this drawing. All dimensions must be checked/verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialist drawings and specifications.
3. All dimensions in metres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.
5. The accuracy of the services information shown on this drawing cannot be guaranteed and is only an indicative representation. The information shown is based upon asset record drawings from statutory authorities. It is given without liability or warranty.
6. The contractor shall be responsible for verifying the exact location of all statutory undertakers apparatus and other public/private underground services in consultation with the relevant operator/service provider.
7. BWB has the capability of tracing and recording on-site services with locations recorded on topographical survey data.
8. All services are taken from record (FRR) unless otherwise noted as surveyed (S) or proposed (P).
9. All services are underground unless otherwise noted as overhead (OH).
10. Abandoned services may not be shown on this plan.
11. Information concerning the position of existing utility infrastructure has been extracted from record mapping obtained from statutory undertakers.

Statutory Undertakers	Date Obtained
Southern and Southern Energy (SSE)	03/09/2021
GTC Gas	03/09/2021
Thames Water (STW) Clean	06/09/2021
Thames Water Waste	06/09/2021
Openreach (BT)	03/09/2021

Legend

- SITE BOUNDARY
- EXISTING FOL WATER SEWER PRIVATELY OWNED
- EXISTING COMBINED WATER SEWER PRIVATELY OWNED
- EXISTING TV SURFACE WATER SEWER
- EXISTING TV CLEAN WATER MAIN
- EXISTING CLEAN WATER MAIN OWNED BY OTHERS
- EXISTING SSE HV OH ELECTRICITY APPARATUS
- EXISTING SSE HV ELECTRICITY APPARATUS
- EXISTING GTC LV ELECTRICITY APPARATUS
- EXISTING GTC LP GAS APPARATUS PROPOSED
- EXISTING BT OPENREACH COMMS APPARATUS
- EXISTING BT OPENREACH CHAMBER
- EXISTING BT OPENREACH POLE
- SSE 11kV HV ELECTRIC SAFE WORK ZONE 3 METER

UTILITIES NOTICE

The position of any existing public or private sewers, utility services, plant or apparatus shown on this drawing is believed to be correct, but no warranty is given to this effect or implied. Other such plant or apparatus may also be present but not shown. The Contractor is therefore advised to undertake their own investigations where the presence of any existing sewers, services, plant or apparatus may affect the operations.

Rev	Date	Details of issue / revision	Drawn	Checked
P01	06.09.21	For Information	LGS	RM

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT | INFRASTRUCTURE | BUILDINGS

Birmingham | 0121 233 3322
 Leeds | 0113 233 8000
 London | 020 7407 3879
 Manchester | 0161 233 4280
 Nottingham | 0115 924 1100
www.bwbconsulting.com

Client
Richborough Estates Ltd and Lone Star Land Ltd

Project Title
Upper Heyford, Oxfordshire

Drawing Title
Composite Services Plan

Drawn: L Screen	Reviewed: R McGregor
BWB Ref: BMW3171	Date: 06.09.21 Scale: A0 1:1000

For Information

Project	Originator	Zone	Level	Type	Number	Status	Rev
UHO-BWB-GEN-XX-DR-VUT-001	S2						P01

APPENDIX 3: Estimated Load Demand Schedule

Utility Loadings

Utility	Dwellings	EV Chargers	Output		
Electric With Storage Heaters	230	Yes	1.9	MW	
Electric With Storage Heaters	230	No	1.2	MW	
Electric With Gas Central Heating	230	Yes	1.2	MW	
Electric With Gas Central Heating	230	No	0.5	MW	
Gas	230	N/A	35,949,961	kWh	Annual
Water Clean	230	N/A	3.83	l/s	
Water Foul	230	N/A	920,000	l/day	



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