



BETTER SOLUTIONS, INTELLIGENTLY ENGINEERED

INFRASTRUCTURE MANAGEMENT UTILITIES

Richborough Estates
Sandwich Road, Sholden
Kent

Utilities Assessment

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March 2021

DOCUMENT ISSUE RECORD

Document Number:	SRS-BWB-VUT-ZZ-RP-G-0002_UA
BWB Reference:	BMW-2914_UA

Revision	Date of Issue	Status	Author:	Checked:	Approved:
P01	19/02/2021	S1	Thirushan Moodley	Nisha Mistry	Jas Bains
					
P02	25/02/2021	S2	Nisha Mistry	Jas Bains	Nisha Mistry
					
P03	03/03/2021	S2	Dan Bailey	Jas Bains	Dan Bailey
					
P04	03/03/2021	S2	Dan Bailey	Jas Bains	Dan Bailey
					
P05	11/03/2021	S3	Nisha Mistry	Dan Bailey	Nisha Mistry
					

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1. INTRODUCTION

Instruction

- 1.1 BWB Consulting (BWB) was instructed by Richborough Estates (The Client) to provide technical services to support an outline application for the erection of up to 117 dwellings with associated parking and means of access (all matters reserved except for access).

Objectives

- 1.2 The objectives of the report are to:
- Describe the locations of existing utilities apparatus in the vicinity of the site.
 - Provide an account of the viability of servicing the proposed development with suitable mains services infrastructure.
 - Undertake an assessment for any services diversions that are likely to be required as a result of the development proposals.

Scope of Works

- 1.3 The Utilities Assessment will outline and assess the utility issues in relation to the proposed site and will identify the need for new utility infrastructure, potential upgrade/reinforcement works and/or the need for further investigation/modelling.
- (i) Asset Records – request latest records of the existing statutory services from the utility providers operating in the area and plot the locations onto topographic survey/OS background mapping to provide a combined composite utility plan,
 - (ii) Diversions of existing services – review the utility constraints against the proposed site layout to identify which utility assets need to be diverted, and/or protected to accommodate the site proposals,
 - (iii) Demand calculations – estimate the total utility requirement for the development.
 - (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 providers,
 - (v) Combined infrastructure summary – summary of the above items to understand the potential works required to service the proposed development.

2. THE SITE

Site Description

- 2.1 The site is 4.99ha and is located off Sandwich Road in Sholden. The site is bound to the north east by the A258 Sandwich Road beyond which is an area of existing residential properties. Agricultural greenfield land surrounds the site beyond the northern, western and southern boundaries.
- 2.2 The site's location is illustrated within **Figure 2.1**.



Figure 2.1: Site Location

- 2.3 A proposed Masterplan (275_SK05-Proving Layout) has been prepared by EDGE Urban Design for the proposed development site and is contained within **Appendix 1**.

3. Utility Providers

- 3.1 BWB has for the purpose of this report, made initial utility search enquiries, to statutory undertakers to ascertain existing utility infrastructure within and adjacent to the proposed development site.
- 3.2 The site is in an area where, UK Power Networks and Scottish and Southern Electricity Networks operate the electrical network, SSE Utility Solutions (Indigo Pipelines) and Southern Gas Networks operate the local distribution gas networks, Southern Water operate the potable water supply and drainage network, and Openreach operate the telecommunications network.

Statutory Undertakers List

- 3.3 The affected utility providers who have assets on site or in the vicinity of the development area are shown in **Table 2.1**.

Table 2.1: Statutory Undertakers List

Utility	Provider	Existing Infrastructure	Diversionary Works
Electricity	UK Power Networks	Near the site	No
Electricity	Scottish & Southern Electricity Networks	Near the site	No
Gas	SSE Utility Solutions	Near the site	No
Gas	Southern Gas Networks	Near the site	No
Potable Water	Southern Water	Near the site	No
Foul/Surface Water	Southern Water	Near the site	No
Telecommunications	Openreach	Near the site	No

- 3.4 From a review of the existing asset records obtained by BWB, a Composite Utility Plan (Drawing No. SRS-BWB-GEN-XX-DR-CU-0002 Composite Utility Plan [S2-P3]) has been prepared showing the extent of the existing utility infrastructure within and adjacent to the development site and is contained within **Appendix 2**.
- 3.5 The information on utilities contained within this report has been derived from data provided by the main public utility companies. No information is provided in relation to "private" infrastructure that might be present on site.
- 3.6 It should be noted that all asset records and capacity investigations were correct at the time of writing this report and the results of these enquiries may be subject to future reinforcement or change by network operators.
- 3.7 Where statutory undertakers have identified services within or near the proposed development site, those services are discussed within the following sections.

4. ELECTRICAL INFRASTRUCTURE

Existing Electrical Infrastructure

- 4.1 The following section details the existing electrical utility infrastructure network identified within the UK Power Networks (UKPN) record drawings received on 30/03/2020.
- 4.2 The UKPN record drawings indicate that there is no electrical utility infrastructure located within the development site.
- 4.3 The UKPN record drawings show that there are 3no. High Voltage (HV) Overhead (OH) cables located adjacent to the development site to the south. These cables are located on Pole Mounted Transformers (PMT) and provide Low Voltage (LV) UG and OH HV supplies to the existing local area to the north and west beyond the respective site boundaries.
- 4.4 The plans further show a network of LV Underground (UG) cables present within Sandwich Road and London Road.

Diversions Works

- 4.5 A review of the UKPN asset record plans against the masterplan have identified that the site is clear of any electrical infrastructure, however the record plans show a network of LV UG cables within Sandwich Road in the vicinity of the proposed access into the site. It is anticipated that these assets may require protecting or diverting to facilitate the site access proposals. As such further consultation with UKPN is advised to understand any further requirements ahead of construction for this access.

Proposed Infrastructure

- 4.6 The supply response received from UKPN (Ref 8500143985_4, Dated 25/02/2021), confirms there is sufficient capacity and further reinforcement works is not required for the Point of Connection to the High Voltage network along the A258 London Road. A ringed HV supply to a new substation is to be provided in the middle of the proposed development, to lay LV main cables through the site. This assessment is based on a load not exceeding 688kVA which also includes the load for Electric Vehicle Charging (EVC).
- 4.7 The client is responsible for the on-site excavations and reinstatements, with UKPN laying the associated services within these trenches and making the connections for the development. An area of land at least 5m x 5m will need to be provided by the client for the substation to be installed and will be required to be sited next to the public highway with 24 hours, 365 days a year unrestricted vehicular access.

5. GAS INFRASTRUCTURE

Existing Gas Infrastructure

- 5.1 The following section details the existing gas utility infrastructure identified within Southern Gas Networks (SGN) and SSE Utility Solutions (SSE) record drawings received 13/10/2020.

Southern Gas Networks

- 5.2 The SGN record plans show a network of Medium Pressure (MP) and Low Pressure (LP) gas mains present within Mongeham Road. These mains are shown to be serving the existing residential development within the vicinity of the site.
- 5.3 The record plans received confirm that the site is clear of SGN assets.

SSE Utility Solutions

- 5.4 The SSE record plans show a network of gas apparatus present within London Road adjacent to the site. This apparatus is part of a wider network shown to be serving the local existing residential properties.
- 5.5 The SSE record plans confirm that the site is clear of SSE assets.

Diversiory Works

Southern Gas Networks

- 5.6 The SGN record plans have been reviewed in conjunction with the proposed development masterplan. The site area is clear of assets; therefore, no diversory works are anticipated.

SSE Utility Solutions

- 5.7 Further, a review of the SSE owned Indigo Pipelines assets against the proposed development masterplan indicate that the proposed site is not anticipated to be affected by the development proposals as such no diversions are expected to be required to the existing SSE assets.

Proposed Infrastructure

- 5.8 The supply response from SGN Connections (Ref 2132766, Dated 04/03/2021) confirms that there is sufficient capacity in the SGN owned Low Pressure gas main within Mongeham Road to accommodate a development of up to 117 units.
- 5.9 BWB have liaised with SGN to confirm the proposal of supplying 117 units and they have advised that the Point of Connection will also be taken from the LP gas main with a reduction in the indicative estimate to supply the development proposal.
- 5.10 It is recommended that a formal application is requested from SGN for a detailed design and cost estimate to supply the proposed development. It should be noted where

applicable SGN will seek new easements for any gas main assets which will be required to facilitate the development.

6. TELECOMMUNICATIONS

Existing Telecommunications Infrastructure

- 6.1 The following section details the existing telecommunications utility infrastructure network identified within the Openreach and telecommunications asset record drawings.

Openreach

- 6.2 Asset records from Openreach obtained 15/10/2020, indicate an existing network of overhead and underground apparatus present adjacent to the proposed development site.
- 6.3 There is a network of underground cables present within Sandwich Road, bordering the site boundary, where they are shown to be serving the existing local residential properties to the north.
- 6.4 The Openreach record plans confirm that the site area is free of assets.

Diversionsary Works

- 6.5 Following a review of the surrounding assets in conjunction with the current site masterplan, the proposed site area is shown to be clear of Openreach owned assets.
- 6.6 It is further anticipated that diversion or protection works may be required to the Openreach underground cables present within Sandwich Road during construction to facilitate the site access proposals. As such consultation with Openreach is advised to understand any further requirements ahead of the construction of these accesses.

Proposed Infrastructure

- 6.7 It is envisaged that the supply strategy will be via a new connection to the existing infrastructure off Sandwich Road at the locations of the proposed access to the site with new infrastructure running through the development in line with the proposed masterplan.
- 6.8 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 ducts boxes to the Openreach confirmed design which will allow for Openreach to pull cables through the newly installed ducts as and when required.
- 6.9 Openreach will make payments to the developer for the 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).

7. CLEAN WATER

Existing Clean Water Infrastructure

- 7.1 The following section details the existing Clean Water utility infrastructure identified within the Southern Water (SW) record drawings obtained 27/03/2020.
- 7.2 The SW record plans show a clean water main present within Sandwich Road and London Road. This water main is further shown to supply the existing residential properties to the north-east of the development site beyond Sholden Drive.

Diversionsary Works

- 7.3 The SW asset records have been reviewed in conjunction with the current site masterplan, which confirm that there are no SW assets present within the proposed development boundary. As such, no diversionsary works are anticipated in order to facilitate the proposed development or access into the site.

Proposed Infrastructure

- 7.4 The budget response letter from Southern Water (Ref. DS_CC_FW-116113, dated 27/03/2020) confirms that there is capacity within the existing clean water network to serve the proposed development. SW have provided a point of connection to the 3" Cast Iron water main located within London Road.
- 7.5 As part of the budget response letter, Southern Water have not provided an indicative cost for supply. They have advised that the S41 schedule of rates, as well as the further New Connections and Infrastructure Charges within their New Connections Services Charging Arrangement Document will allow for budgeting of application fees, metering costs and infrastructure charges associated with supply to the proposed development.
- 7.6 BWB has confirmed with SW that the existing SW clean water network has adequate capacity to supply the proposed development of 117 units and would not be subject to any further works or change in supply strategy.
- 7.7 It is recommended that a formal application is submitted to SW to allow for specific costs to be determined once the development proposals are reasonably fixed.

8. FOUL AND SURFACE WATER

Existing Foul and Surface Water Infrastructure

- 8.1 Asset records from Southern Water (SW) obtained 27/03/2020, indicate that there is a network of surface water and foul sewers present within the vicinity of the site.
- 8.2 The SW record plans show a network of foul water sewers present within Mongeham Road. A further network of foul water sewers is shown to be present within the existing roads serving the residential properties beyond Sandwich Road and London Road to the north-east of the site.
- 8.3 The record plans show a surface water sewer present within Mongeham Road adjacent to the development site in the south serving the existing residential properties in the local area of Sholden.
- 8.4 The SW record plans confirm the site is clear of SW owned sewer apparatus.

Diversionsary Works

- 8.5 The SW Sewer record plans have been reviewed in conjunction with the current site masterplan and confirm that the site area is free of SW owned sewer apparatus. Therefore, no diversionsary works are anticipated to facilitate the proposed development or access proposals into the site.

Proposed Infrastructure

- 8.6 The SW Wastewater response received (Ref. DS_CC_PDE_116260, Date: 27/03/2020) provides a capacity check for the surface water networks within the vicinity of the proposed development site. The SW response indicates that there is sufficient capacity in the local network to accommodate additional surface water flows of 11.6l/s. A point of connection has been confirmed at manhole reference TRR35514851, the development proposed surface water strategy will be via an infiltration system this will be subject to further on-site assessments.
- 8.7 The SW Foul Water response received (DS_CC_PDE-116260, Date 19/02/2021), confirms that the network has been assessed to determine the available capacity for the proposed development. SW has determined that there is sufficient capacity in the local network to accommodate some if not all of the additional flows from the proposed development via a connection to the public sewer in Mongeham Road at either manhole references TR35514801 or TR35515901 for foul flows of up to 1.5 l/s and/or to the public sewer network within Sholden Drive manhole reference TR35524601 for flows of up to 0.5 l/s. With consideration to the water usage restrictions imposed by Building Regulations the above available capacity will be more than sufficient to cater for the average daily flow from the development.
- 8.8 In the event that improvements works are required to the existing network these works will be identified and implemented by SW at their cost without impact upon the development timescales.

- 8.9 SW are obligated to accept the foul flows from the development with the benefit of planning consent and would therefore take necessary steps to ensure that 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 S98 Agreement of the Water Industry Act 1991.

9. Conclusion & Recommendations

Summary of Investigations

9.1 The table below summarises the results of the investigations undertaken by BWB Consulting.

Table 9.2: Summary of Investigations

Utility Provider	Existing Utility Infrastructure		New Utility Infrastructure Requirements
	Onsite / Near Development	Diversion Requirements	
UK Power Networks (Electricity)	UKPN Network of High and Low Voltage apparatus within the vicinity of the development site.	Diversion or protection measures anticipated to facilitate site access.	UKPN confirm there is sufficient capacity in the HV network along London Road to supply the development including EVC. Installation of 1no. new substation on-site including associated LV supplies will be required.
Southern Gas Networks / SSE Utility Solutions (Gas)	SGN LP and MP apparatus present within Mongeham Road.	No diversionary works anticipated.	Connection to LP gas main within London Road possible without reinforcement to cater for the proposed development.
Openreach (Telecommunications)	Openreach overhead and underground cables present within Sandwich Road, London Road and Mongeham Road, serving the local area.	Diversion or protection anticipated to facilitate site accesses.	Openreach normally provide telephone and broadband services to all new developments free of charge.
Southern Water (Clean)	Clean water mains present within Mongeham Road.	No diversionary works anticipated.	Point of Connection provided to the existing water main present within London Road.
Southern Water (Waste)	Foul and Surface Water Sewer present within Sholden Drive, Mongeham Road, further Foul Sewer present within residential properties	No diversionary works anticipated.	Surface water network has adequate capacity to accept flows from the development. Foul Water Drainage network has sufficient capacity to

	bordering London Road.		accommodate some of the additional flows from the proposed development via a public sewer in Mongeham Road and/or to a public sewer network within Sholden Drive.
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Emerging Strategies and Conclusion

- 9.2 The information that has been obtained by BWB Consulting shows that the site is in close proximity to existing electricity, gas, telecommunications and foul water infrastructure networks.
- 9.3 Capacity supply responses have been procured by BWB for the electricity, gas and clean/wastewater networks, confirming capacity within the respective networks to supply the development, as well as any additional works that will be required to facilitate these supplies. Based on this information it is not anticipated that any of the utilities identified are in any way a barrier to the development site, and at this stage there appear no reasons for the development to not be allocated from a utility's perspective.
- 9.4 Diversionary works are not anticipated for clean/wastewater and gas networks however consideration will need to be given to access into the site for the Electricity and the telecommunications apparatus located within Sandwich Road whilst ensuring continuity of supply to existing customers.
- 9.5 UKPN have confirmed that there is sufficient capacity from the HV network with London Road to supply the development without any need for reinforcement works.
- 9.6 The Openreach infrastructure supply strategy will be affected by the construction of the proposed development access. To assess the extent of the works, Openreach will need to undertake a detailed survey.
- 9.7 SGN has provided a point of connection to the Low-Pressure gas main within London Road, and cited the need to apply for a firm quotation to provide further details once the masterplan is reasonably fixed.
- 9.8 Southern Water have indicated that the existing surface water network has sufficient capacity in the local network to accommodate additional flows. The foul water network within the vicinity of the site has been assessed and SW has confirmed that there is adequate capacity in the local network to accommodate some of the additional flows before reinforcement works is required.
- 9.9 Further consultation with the utility companies has been undertaken for the development and supply response will be updated once received from SGN.
- 9.10 The information provided by the utility companies at this stage are early assessments only and will be subject to a more detailed analysis once the design of the scheme develops post-planning and formal applications are submitted.

Recommendations

- 9.11 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 utility networks.
- 9.12 It is recommended that consultation is undertaken with the relevant companies to confirm any easements and protections that may be required to the assets shown within Sandwich Road to facilitate the site access proposals.
- 9.13 Formal quotations for Electricity Gas and Waste and Clean Water supply will be required to commit the capacity for the development.
- 9.14 It is envisaged that there may be private utility infrastructure on-site, which may be uncharted, as such it is recommended that a below ground survey is undertaken prior to commencing site works to determine whether there are any unknown/private apparatus present within the proposed development site boundary.

APPENDICES

APPENDIX 1: Masterplan

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PLANNING

- Site Boundary (4.99ha)
- Land in same ownership



Rev.	Date	Description
		Land South West of Sandwich Road, SHOLDEN

Illustrative Masterplan

Job ref: 275	Drawing number: P01	Revision: -
Scale: 1:1,500 @ A3	Date: March 2021	



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