ROWDEN PARK, CHIPPENHAM

PLANNING UTILITIES REPORT

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This report is based on preliminary development information, layout, surveys and other information provided by the Client together with copies of utility information provided by the statutory undertakers. It should be noted that WERM has not undertaken any site surveys or visits in preparing this report.

The limited window for the completion of this study necessitates that all solutions are purely indicative, and/or based on the copies of asset plans for the relevant utility service provider. Further, it has not been possible to undertake any detailed modelling works so all final solutions could vary from those identified in this report. Care has been taken to collate written confirmation of each solution from the relevant utility providers wherever possible or in the absence of this an anticipated worst case scenario has been cited. Any additional correspondence in relation to the proposed development will be forwarded under separate cover when received.

All budget costs presented in this report are an indication of the capital sums required for procuring services based on experience of similar projects and information provided by the various utility providers. The sums presented should be used for budgeting purposes only and will need to be refined and confirmed during formulation of a detailed design, and fixed at each procurement stage thereafter.
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1.0 Introduction

This preliminary infrastructure assessment provides a baseline assessment of existing utility services within the area of the proposed development at Rowden Park, Chippenham.

All existing service records have been compiled as a single drawing included in Appendix A.

The currently proposed development comprises up to 1000 residential units with a small local centre and school. The proposed site comprises of three distinct character areas: an area north of Pudding Brook (The Valley), a middle area centred on Milbourne Farm (The Farmsteads) and a southern area (The Woodland).

Consideration has also been given to utility supplies required to the adjacent Showell Farm commercial development when assessing loads and network capacities.

Specifically this report examines the utility requirements generated by the proposed development and provides an assessment of any resultant issues with regard to capacity, potential enabling works such as diversionary works that might be required, and reviews new connection options. This report describes the potential infrastructure solutions for the proposed development.

It is recommended that consideration be given to physically locating the following existing services in order to assess their potential impact on the development or vice versa.

1. 250PE MP gas main crossing the southern part of site.
2. 2” water main to the Patterdown Rifle Range.
3. BT ducts along site boundary with A350.

This report does not constitute a preliminary design however WERM would be pleased to undertake this function on behalf of the Developer upon further instruction.
2.0 Foul Drainage

The incumbent sewerage company for the area is Wessex Water. Asset records show:

- 825mm foul pipework crossing the site north of and approximately parallel to Pudding Brook joining with;
- 1200mm foul sewer running north to south/south-east towards;
- Chippenham Sewage Treatment Works located approximately 500m east of Showell Nurseries.

All existing service records have been compiled as a single drawing included as Appendix A.

The preliminary site masterplan has been developed to accommodate the existing sewer such that no diversions are anticipated. The existing 825mm sewer is between 3 – 5m depth for the majority of its length requiring no building within 5m.

Wessex Water has confirmed that there is adequate spare capacity at Chippenham sewage treatment works to serve the proposed development and that connections may be made to the 825mm sewer and downstream pipework.

It is anticipated that the development will connect to the Wessex system via five separate connections. An outline foul drainage strategy is shown on the plans included in Appendix B.

The northern (The Valley) area of site located to the north of Patterdown Range will drain by gravity to the 825mm foul sewer. It is expected that this will require at least 2 connections in order to minimise depths of drainage pipework.

The whole area to the south of the Patterdown Range will require pumped connections to the public sewer due to ground topography and to also overcome periodic surcharging which is liable to occur in the 1200mm sewer. A single pumping station would not provide the most economical drainage design and would result in very deep sewerage.

It is anticipated that the development will be split into three catchment areas, each served by its own adoptable pumping station. This will also suit phased construction of the development. The Farmsteads area will be split north/south of the natural ridge approximately following the line of the access to Milbourne Farm. Pumping Stations will be located towards the eastern boundary with the Rowden Valley Park; one towards the north-east corner and another towards the south-east corner of The Farmsteads area respectively.

The southern Woodlands area will also drain towards the east to another adoptable pumping station located close to the boundary of the site. This southern system will be designed to also accommodate a pumped discharge from the Showell Farm development.

Pumped rising mains will be laid beneath the adjacent land forming the Rowden Valley Park to connect with the existing public sewer.

Wessex Water has been consulted during the development of the foul strategy. They have reviewed and commented on preliminary drainage proposals and have not raised any significant concerns or issues.
3.0 Water

The incumbent water company for the area is Wessex Water. Asset records show:

- 3" CI pipework along the west side of Patterdown Road feeding;
- 2" GA main running from the A350 towards the Patterdown range crossing the north of the main site, with a private main/service feeding south to Milbourne Farm.
- 3" CI pipework alongside the A350 from the south as far as Patterdown Farm.
- Substantial water main assets to the north along the A4 Bath Road/Rowden Hill including a 10" PVC main at Rowden Lane.

All existing service records have been compiled as a single drawing included in Appendix A.

The 2" main towards Patterdown Rifle Range will need to be diverted. This will either be diverted around the perimeter of the development or reconnected to the proposed on-site mains should the supply need to be retained. It is anticipated that the supply to Milbourne Farm will also be reconnected to new site distribution mains.

An existing 3" CI water main could potentially be affected by construction of the proposed southern access roundabout. This is not a major supply main and any required diversionary work would be relatively simple to effect incidental to the highway works.

Wessex Water has confirmed that off-site reinforcement will be required in order to enhance network capacity at the likely point of connection for the development. They have provisionally identified a scheme which would include installing approximately 600m of new 300mm main between Wessex Water’s ring main west to the Hardenhuish 10” main near Bumpers Farm roundabout on the A420. The reinforcement costs would be chargeable to the Developer but could be included in requisition arrangements with costs being off-set by the anticipated additional income to Wessex Water from the development.

The anticipated point of connection will be to the 10" PVC main near the junction of Rowden Hill with Rowden Lane. A new suitably sized main will be installed between there and the site along the A350 with new distribution mains designed and suitably sized to supply the development.

It is not anticipated that the land will be considered contaminated and the use of standard PE water pipework should be appropriate.
4.0 Gas

The incumbent gas transporter for the area is Wales & West Utilities (WWU). Asset records show:

- 250PE Medium Pressure gas main crossing the southern part of the site.
- Various low pressure mains serving existing development in Chippenham north of the site, including a 63mm LP main at Patterdown Road extending approximately 100m south of Coppice Close.

The 250PE medium pressure gas main crossing the site will be retained in situ and will coincide with a green corridor across the development. The position of the main should be physically verified. No building will be permitted and only low level shrub planting within 3m of the MP main.

The main also runs through the area of the proposed southern access roundabout. The exact position (line and level) of the main will need to be ascertained and referenced against highway design proposals to determine whether any diversionary or protection works might be required or these could be designed out.

WWU has confirmed that the 250PE MP main crossing the site has sufficient capacity to supply the entire Rowden Park development. It is anticipated that a MP point of connection will be utilised and a below ground gas governor provided to supply LP mains and services within the development site.

Dwellings on the northern (The Valley) area of the development will likely be supplied via a separate low pressure gas connection to the 63mm main near the entrance of Coppice Close off Patterdown Road. WWU has confirmed that up to 93 units could be supplied from that connection before reinforcement will be required. It would be possible to supply some further properties situated towards the north of the The Farmsteads area if necessary but chargeable reinforcement of the network would be required.

Gas supply and multi-utility proposals will be sought from independent gas transporters and multi-lay organisations as appropriate in order to derive best value for supplying the development.
5.0 **Electricity**

The incumbent electricity company for the area is Scottish & Southern Energy Power Distribution (SSE). Asset records show:

- Numerous 11kV & 33kV high voltage (HV) overhead lines crossing the site.
- Pole mounted transformers located near Milbourne Farm and Patterdown House with associated LV mains and services.
- Various HV & LV mains serving existing development in Chippenham to the north of the site.

Extensive undergrounding of HV assets would be anticipated in both The Valley and The Farmsteads character areas. The route of replacement underground mains will be around the development perimeter and following the on-site road network where appropriate. SSE has completed a feasibility study and confirmed a possible solution, cable route and likely cost to be borne by the developer for this work.

Network capacity is constantly changing and cannot be assured however there is understood to currently be approximately 2MVA available at the Rowden primary substation and only limited capacity in the local 11kV HV network.

The anticipated total development load, taken in conjunction with low demand development/usage at Showell Farm is estimated at 3.5MVA. SSE has confirmed that this will require the installation of a new circuit breaker at Rowden primary substation and a new 11kV cable to provide one point of connection near the north of the development. A second proposed point of connection would be a new pole termination on the existing 11kV overhead near the north of Showell Farm. The Developer would contribute towards the reinforcement and off-site works with costs apportioned according to load.

It is anticipated that 3 substations will be required to be located within the development. These would serve the three distinct character areas respectively and should ideally be located reasonably centrally within each parcel. Potential locations are indicated on the Outline Utilities Strategy plan in Appendix C.

Combined loads in excess of 3.5MVA would trigger further reinforcement including a new 33kV feeder to the Rowden primary substation and additional circuit breakers and 11kV mains between there and the development site.

Electricity supply and multi-utility proposals will be sought from independent gas transporters and multi-lay organisations as appropriate in order to derive best value for supplying the development.
6.0 BT

BT Openreach asset records show:

- Underground ductwork along the eastern verge of the A350 adjacent to the west site boundary and from the north as far as Patterdown Farm along the western verge.
- Some poles and overhead assets towards the northern and southern ends of the A350 boundary.
- An overhead supply toward Patterdown Range.

The feeds to Patterdown Rifle Range and Milbourne Farm are likely need to be diverted. The range service will likely be diverted around the perimeter of the development should the supply need to be retained. The farm will be transferred to new infrastructure installed to serve the development.

Some overhead and below ground ductwork along the A350 verge may be impacted by the formation of each new site access or cross over. Poles may need to be diverted and ducts lowered or protected. The full extent of this will need to be assessed once detailed proposals are available but works will be readily achievable following standard processes.

The site is served by the Chippenham telephone exchange. It is assumed that new underground ducting will be installed from existing ductwork running alongside the A350 and that no charges would be raised by Openreach. If new site ductwork is installed by the developer under contract to Openreach then standard rebates should apply.

The Chippenham exchange is currently enabled for superfast fibre broadband and fibre to the cabinet solutions are available within the vicinity of the development. BT Openreach is currently undertaking a trial roll out of its fibre to the premises (FTTP) services. These are not currently available in the development area but it is anticipated that a site of this size would likely qualify for inclusion, or depending on timescales, FTTP solutions may have become a standard offering.

7.0 Cable

There are no cable broadband or TV services such as virgin Media available in the locality.

8.0 Linesearch Before U Dig

Asset searches have not identified any other utility service assets that would potentially be affected by the development.

There is a Government Oil Pipeline located to the north of the site but not in the zone of interest.
Appendix A – Existing Utilities Plans
Appendix B – Outline Foul Drainage Strategy Plans
Appendix C – Outline Utilities Strategy Plans