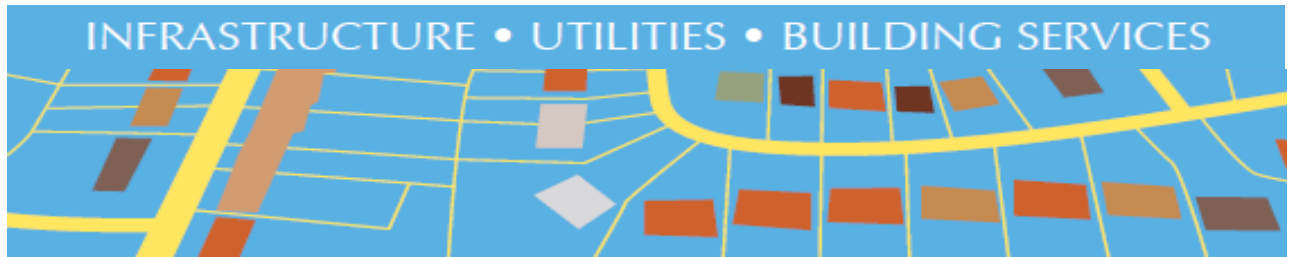


# TONY MALKIN CONSULTING



## THE OAKS DEVELOPMENT WREXHAM

### UTILITY SERVICES INFRASTRUCTURE ASSESSMENT

May 2019/V2/TMC

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# THE OAKS DEVELOPMENT, WREXHAM

## UTILITY SERVICES INFRASTRUCTURE ASSESSMENT

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## **THE OAKS DEVELOPMENT, WREXHAM UTILITY SERVICES INFRASTRUCTURE ASSESSMENT**

### **EXECUTIVE SUMMARY**

The proposed development site area has existing Utility Company statutory electrical, gas, water, and telecommunication network services in the locality of the site.

The existing electric, gas, water and telecommunications networks are all located close to the development, being either within the highway zones bounding the site or across the site.

These utility services are considered capable of serving the proposed development, subject to the respective utility service network being adapted and extended into the site.

In conclusion, the proposed development site is capable of being provided with mains electrical, gas, water and telecommunication utility services.

Refer to the respective sections of this report for greater detail of the existing utilities, their associated considerations and constraints and availability, including their respective record plans provided.

## **THE OAKS DEVELOPMENT, WREXHAM UTILITY SERVICES INFRASTRUCTURE ASSESSMENT**

### **Introduction**

The location of The Oaks proposed development is directly south of Wrexham Industrial Estate between Redwither Road, Oak Road and River Clywedog.

The site was part of the former Royal Ordnance Factory (ROF).

The proposed development comprises of a mix of industrial, commercial, retail and leisure building plots

Refer Appendix A – Proposed Development

The scope and occupancy of the proposed development will require the connection of statutory utility company network connections as part of the development proposals.

Initial contact has been made and liaison undertaken with the respective statutory utility companies to determine:-

- The scope of their existing network distribution apparatus,
- Associated considerations and constraints,
- Their ability to serve the development.

The following sections of this report detail the finding to the above.

## EXISTING UTILITY NETWORKS

In the general locality of the proposed development, and specifically within the adjacent highways, there are existing Utility Company supply networks.

A review of Utility Company record plans, has determined the following:-

**Electrical** – Scottish Power Energy Networks (SPEN), comprising:-

- 132kV high voltage (HV) (identified in blue) pylon supported overhead transmission network cables, routed across the middle of the site from the north to the south/southeast including a change of direction.
- 33kV HV (identified in green) pole supported overhead transmission cables, rising from underground cables adjacent to Oaks Road and routed southwest across the site with a 'dog-leg' change of direction.
- 11kV HV (identified in red) part underground and part pole supported overhead transmission network cables, routed from a position south of the Oaks Road junction with Bryn Lane routed across the middle of the site in a southwest direction.
- 11kV HV (identified in red) part underground and part pole supported overhead transmission network cables, routed from adjacent to the Oaks Road junction with Bryn Lane in a southeast direction across the site, having a number of pole mounted transformers, referenced:-
  - 04/3849/001/P-The Oaks
  - REL-SJ3849/045 ABSW The Oaks
  - 04/3949/004/P-R & R Engineering
  - 04/3949/002/P-Lower Oak
- 11kV HV (identified in red) underground cables route at the south side perimeter of Redwither Road and Oaks Road highway zone.
- HV/LV substations, comprising of HV transformers and LV distribution, referenced:-
  - 04/3849/034/P-Bluestone Chemicals, located at the northwest end of the site
  - 04/3849/023/-Flexaulic Redwither, located at the northwest end of the site.
  - PS-SJ3849/006 Firestone, located southwest of the site boundary.
- Street lighting columns and associated supply cables within the Redwither Road and Oaks Road highway zone.

Refer to Appendix B – SPEN Electrical Record Plan

**Gas:** Wales & West Utility Gas (W&WU) comprising:-

- A MP (medium pressure) network distribution main located with the north side of Oaks Road highway zone, following the northwest and northeast boundary of the site.
- MP network distribution mains within the roads stated below, all connecting to the network main in Oak Road.
  - Dunster Road
  - Abbey Raod
  - Bryn Lane

Refer to Appendix C – W&WU Gas Record Plan

**Water:** Dee Valley Water (DWW) Water Record Plan, comprising:-

- A grouping of four water mains encircling the site at the southwest and northeast boundaries, and also cross the middle of the site. The group of mains were originally provided as part of the ROF site and comprise of:-
  - 9" CI (cast iron) fire water main
  - 6" CI (regular) water main
  - 15" CI (regular) water main
  - 18" CI raw water
- A 3" AC (asbestos cement) water main from the four pipe grouping 9" regular main route directly opposite and in to the highway zone of Bryn Lane.
- A 150mm DI (ductile iron) and 300mm DI main from the four pipe grouping 92 and 15" mains respectively to the buildings beyond the site's southwest boundary.
- A 6" AC main on the north side of the Redwither Road highway zone.
- An 8" AC fire and 4" AC (regular) mains on the south side of the Redwither highway zone.

Refer to Appendix D – Dee Valley Water Record Plan

**Sewerage:** Welsh Water (WW), comprising:-

- A combined (foul & surface water) sewer routed across the site flowing in a northeast to southwest direction from a position close to the Oak Road and Abbey Road junction.
- A combined sewer also routed across the site approximately a 120 metres south east of the above sewer, flowing in a northeast to southwest direction from a position just south of the Oak Road and Bryn Lane junction.
- A combined sewer routed partly in Redwither Road and property on the south side of the highway zone flowing in an east to west direction.
- Two combined sewers routed close together and adjacent to the north end of the south west site boundary, discharging to northerly sewer crossing the site.
- A sewer pumping station located approximately 30 metres south west and midway along the site's south west boundary. The pumping station discharge rising main is routed away from the site in a south west direction.

Refer to Appendix F– Welsh Water, Sewer Record Plan

**Telecommunications:** Openreach (OR), comprising:-

- The locality is served by an OR network of buried cable ducts and chamber network containing voice and data cables with a number of pole supported overhead cables in the general locality.
- Two cable duct and chamber routes are located within Redwither Road highway zone north of the site.
- A cable duct and chamber route located within the north side of the Oak Road highway zone extending from Redwither Road.
- A cable duct and chamber route from Oak Road highway zone towards the site's northwest boundary and looping back to Oak Road, but following the concaved curved section of the site boundary.
- Underground cable ducts and chambers and overhead pole mounted cables within and following closely the northwest side of the Oaks Road highway boundary.

Refer to Appendix G - OR Cable Duct & Chamber Record Plans

**General**

The specific location and routes of the existing services, whilst known in general terms from the respective Utility Company's record plans, will require to be accurately identified along their whole route where it is considered that they may impact on proposed works. This will be achieved at the early design stages, through liaison with the respective Utility Company, consulting existing records, and the undertaking of specialist search and survey techniques.

## CONSIDERATIONS AND CONSTRAINTS

### General

The existing utility services extend both within designated public and into private land.

Where utility services are within the public highway zones, these are secured by the highway status.

Where utility services are within private land, these potentially are secured under easements and wayleaves for electrical, gas and telecommunication services or in the case of water and sewerage services by statutory restrictions.

Easements and wayleaves are required to be formal agreements between the Utility Company and the land owner and can pass from previous Utility providers and landowners unless specifically identified and altered/terminated.

With regard specifically to the SPEN (Scottish Power Energy Networks) electrical HV cables crossing the site, SPEN have been consulted and those with and without formal agreements have been confirmed and identified.

Refer to Appendix C

The utility services which impact on the proposed development site area are:-

- The SPEN 132kV overhead cables, (blue on the plan) routed across the centre of the site, is a key element of the network and is secured by a formal agreement, with any changes/diversions to suit the development proposals being at the land owner/developers cost.
- The SPEN 33kV pole and overhead cables (green on the plan) routed across the northern section of the site, is a key element of the network but has been declared by SPEN as having no formal agreement, and therefore any changes/diversions to suit the development proposals being at SPEN's cost, subject to them being given notice.
- The SPEN 11kV part underground and overhead cables (red on the plan) across the northern section of the site has been declared by SPEN as having no formal agreement, and therefore any changes/diversions to suit the development proposals being at SPEN's cost, subject to them being given notice.
- The SPEN 11kV overhead cables (red on the plan) across the west section of the site, including the undergrounded section linking to the Oak Road HV, has a formal agreement, but this can be terminated on the 30<sup>th</sup> June in any year by giving six calendar months previous notice, with removal/diversion being at SPEN cost.
- The DVW's (Dee Valley Water) group of four water mains crossing the southern section of the site and routed close and parallel to the northeast site boundary are

secured by a Statutory Act which determine that if they exist, they have a right to be there; therefore any changes/diversions to suit the development proposals will be subject to notice to and liaison with DVW at the land owners/developers costs.

- The WW (Welsh Water) sewers crossing the middle section of the site and routed close and parallel to the southwest site boundary are secured by a Statutory Act which determine that if they exist, they have a right to be there; therefore any changes/diversions to suit the development proposals will be subject to notice to and liaison with WW at the land owners/developers costs.

It is been recommended that the legal land status and right of access of all these services are checked and confirmed by a legal advisor.

### **Site Access**

Where road and pavement access is required as part of the proposed development to connect to an existing highway, then the existing utility cables, pipes, ducts and apparatus within a pavement zone or verge may result in the cables, pipes and ducts having to be lowered or protected as part of the condition of creating the access.

This would be conditional upon:-

- The scope of a proposed highway alteration,
- Consideration of the position and depth of the utility services;
- Formal approval from the respective Utility Company, and
- A requirement for diversions, replacements and reinforcement of utility services affected.

These considerations will likely impact on the services that are in the following locations:-

Oaks Road, specifically:-

- SPEN HV cables on the south side of the highway zone
- OR (Openreach) cable ducts on the south side of the highway zone.
- Street Lighting columns and associated supply cable, albeit only subject to any alteration of the road width or overall levels.

If the development's proposed vehicle and pedestrian entrance sufficiently impacts on both sides of the Oak Road highway zone, then the W&WU gas main will be impacted.

**Existing/Former Site Use Services**

It is known that the existing site formed part of a former Royal Ordnance Factory site, which it is anticipated that there will have existed for its function a range of cables, pipes and conduits services.

The type, location and routes of such services is unknown, nor is their current status, whether identified, disconnected, abandoned or removed and consequently surveys will be required to be undertaken by specialist using specialist techniques for their identification, establishment of status, making safe and removal as necessary.

## **NEW SUPPLIES FOR THE PROPOSED DEVELOPMENT**

An assessment of the utility services in the vicinity of the existing site has been undertaken.

The proposal for the development has been reviewed in order to be able to determine the utility services demand to provide for the purpose of the development

It has been determined that the utility services within the surrounding area are capable of being reinforced and extended to serve the proposed development, based upon the current proposals for the site.

The scope of the development's requirement for electric, gas, water, sewerage disposal and telecommunications are within the utility network capacities presently within the greater surrounding area, and in conjunction with the respective Utility Company through application and negotiation, their networks can be modified and extended into the proposed development to serve the proposed buildings and their occupants.

In addition, the overall assessment of the utility demand has taken into account the energy conservation features, including as appropriate energy reduction and the potential use of renewable energy technologies where appropriate.

The actual scope and layout of the utility supply networks will be planned to provide resilience, utilising ring main circuits whenever practicable to provide a robust supply installation.

The supplies will be sized to provide for a margin of demand growth and modest expansion to minimise the necessity for future reinforcement, therefore minimising disruption and the impact of subsequent upgrade of buried utility apparatus.

It is anticipated at this stage that the scope of the required utility installations will be:-

### **SPEN (Scottish Power Electrical Network) Electrical Supply**

Informal liaison with SPEN has indicated that the electrical supply for the proposed development will be fed from a combination of the 11kV HV transmission network to the north and across the site, serving a number of network and consumer HV/LV substations.

Network and consumer LV supplies would extend from the respective substations to serve the buildings with the development.

### **W&WU (Wales & West Utilities) Gas Supply**

Informal liaison with W&WU has indicated that the gas supply for the proposed development will be fed from the existing MP (medium pressure) network mains north of the development.

Buildings within the proposed development would be supplied with gas either at MP to a consumer MP/LP (low pressure) governor within the building plot, or at LP via a network MP/LP governor located on a designated plot.

### **DVW (Dee Valley Water) Water Supply**

Informal liaison with WW has indicated that the water supply for the proposed development will be fed from the existing group of four network mains encircling and crossing the site, providing a capability for the development as a whole or individual building as required, to be supplied with one or more of group of four mains, being:-

- Fire water main
- (Regular) water main (large)
- (Regular) water main (small)
- Raw water main

Fire hydrant fire-fighting requirements whether within the surrounding highways, or within the development area, will be as determined by North Wales Fire & Rescue Service.

### **WW (Welsh Water) Sewerage Disposal**

Informal liaison with WW has indicated that the domestic-use foul water drainage from the proposed development will be permitted to outfall to the one or more of the combined sewers crossing the site and route along and adjacent to the site's southwest boundary.

Trade drainage disposal/discharges will be subject to the approval of WW and the nature, content, constituent and volume of the discharge.

Surface water drainage from the development will be subject to any planning approval constraints and Welsh Water consultation and agreement in conjunction with SuD's disposal and management requirements, for achieving disposal either within the development area, combined with development or individual plot attenuation, prior to discharge to the existing combined sewers.

### **BT Openreach Telecommunications**

Informal liaison with BTOR has indicated that the cable ways for the development will be provided from the existing cable ducts and chamber network within the Oaks Road highway zone.

A cable duct and chamber network would extend into the development to enable network and consumer voice and data cable services to connect to the individual buildings as required.

It is understood that fibre ready exchange apparatus is available within the locality, as well as access for other providers.

**Utility Report Considerations**

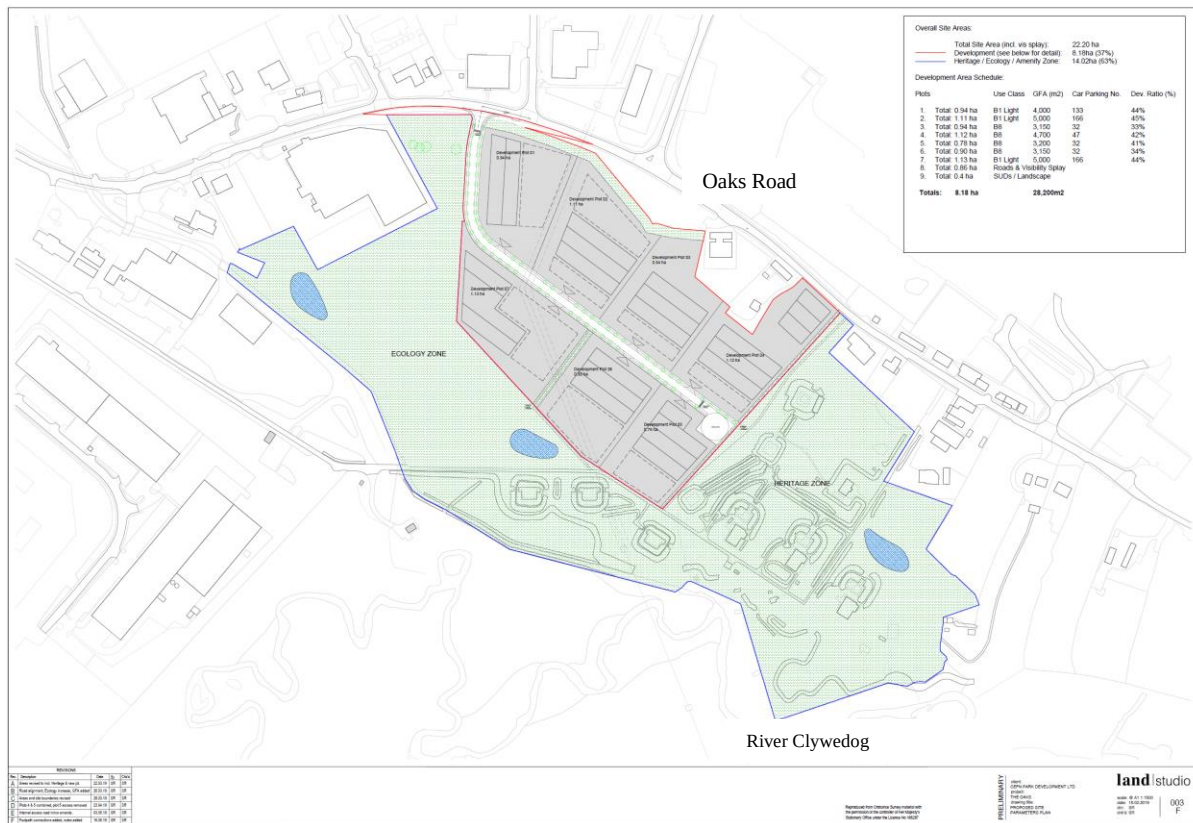
This utility supply assessment report is based on the respective Utility Company records and the statutory requirement for them to provide connections where planning and development is approved.

The information provided does not replace a requirement for a legal land search to be undertaken to identify land ownership, covenants, rights of way, wayleaves, easements, rights under Acts of Parliament.

The assessment has been undertaken without any on-site services surveys and it is understood that these will be carried out at an early design stage incorporating below ground services search/identification techniques.

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## APPENDIX A – Development Area Plan

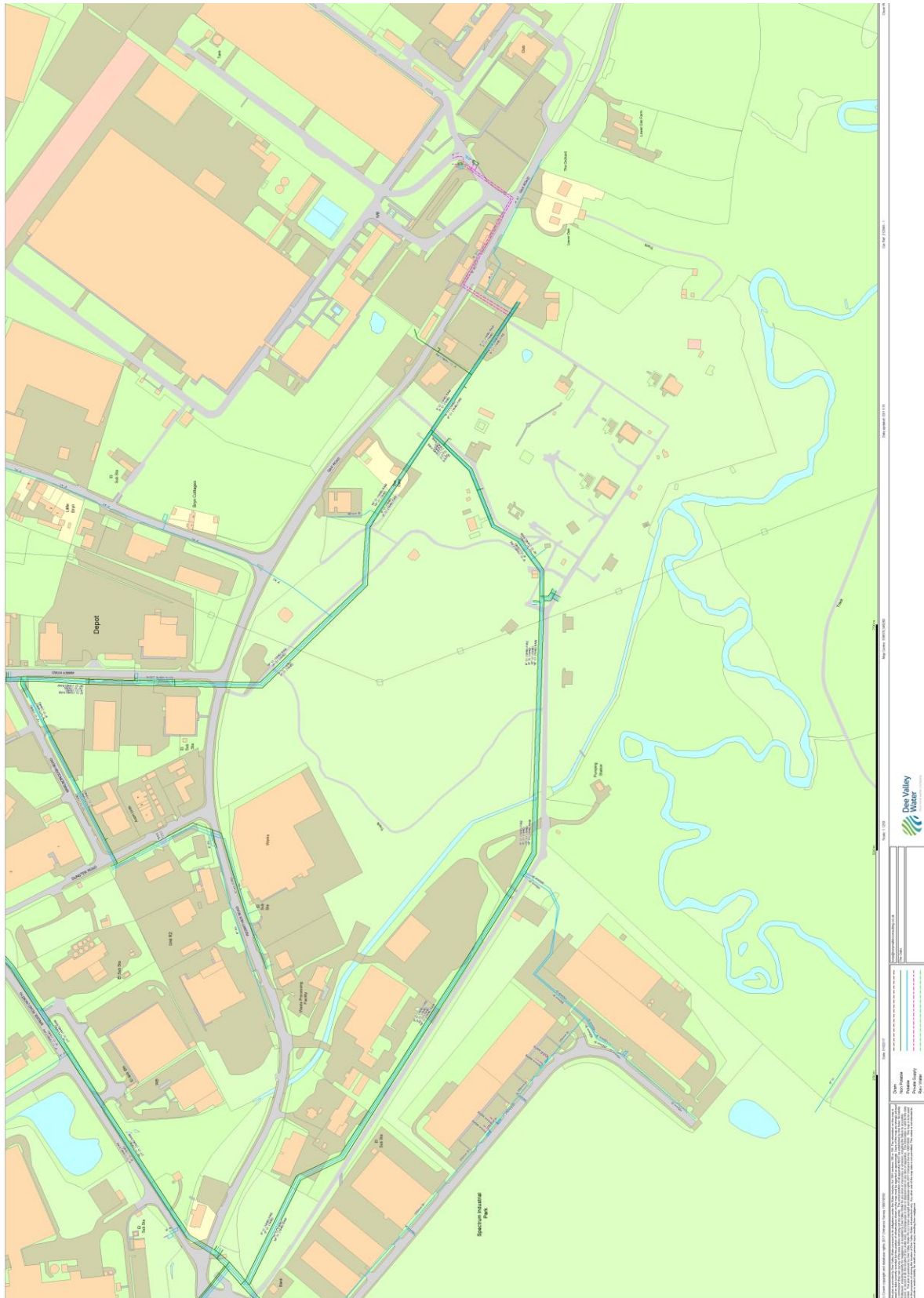




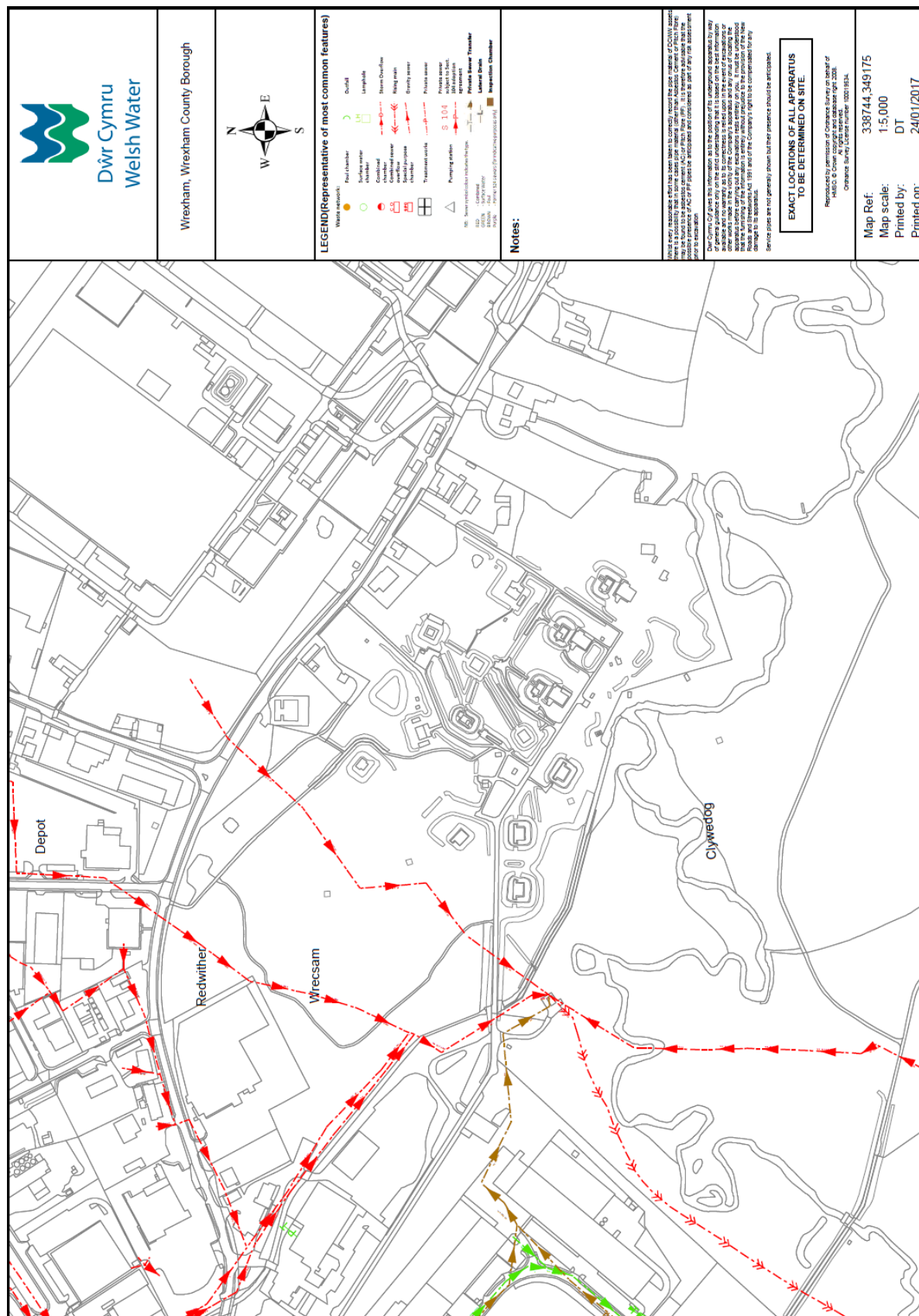




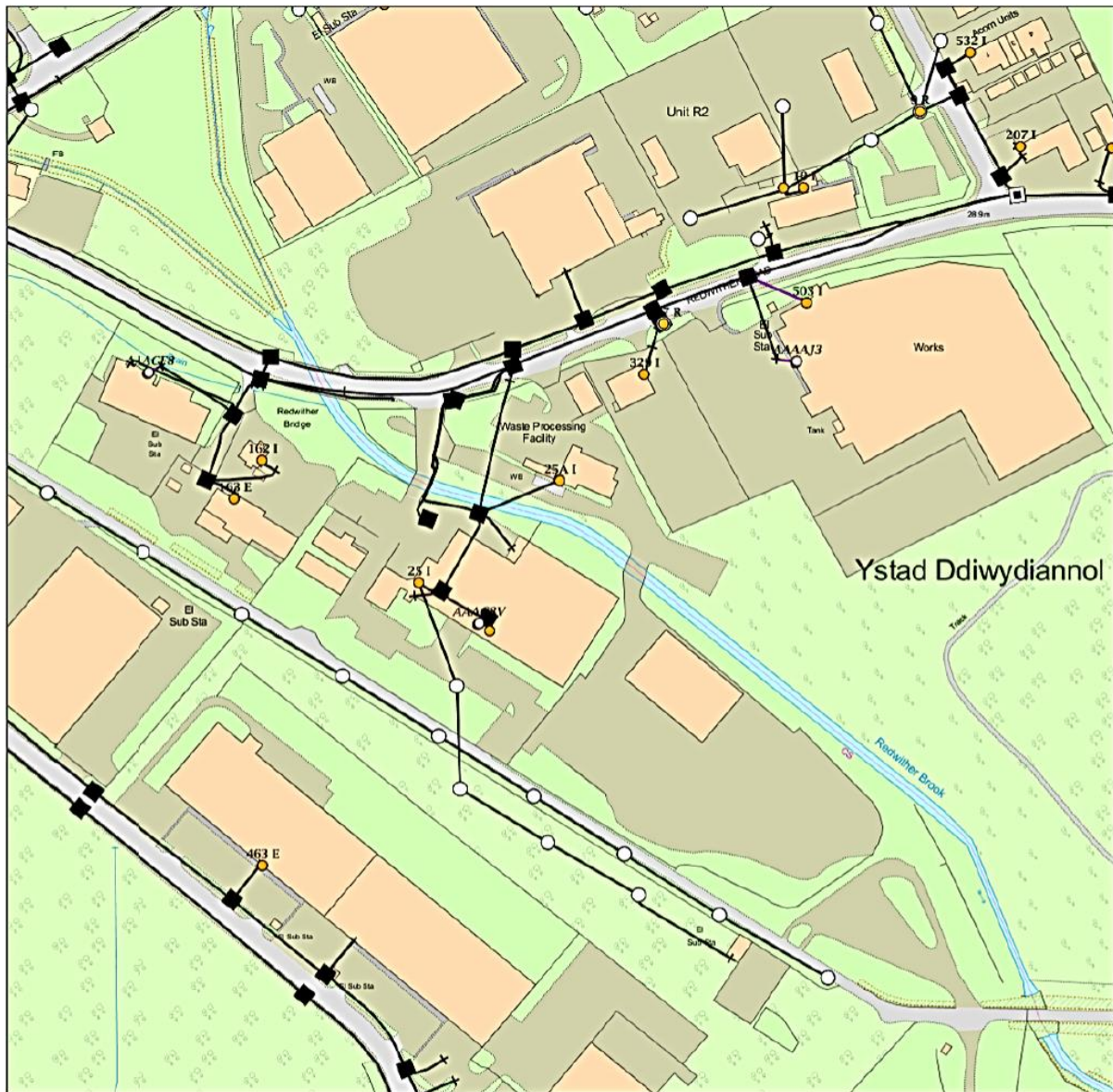
## APPENDIX E – DVW Water Record Plan



## APPENDIX F – WW Sewer Record Plan



# APPENDIX G – OP Telecommunications Record Plan 1 of 3



## 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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## KEY TO BT SYMBOLS

|             |  |
|-------------|--|
| DP          |  |
| Planned DP  |  |
| PCP         |  |
| Planned PCP |  |
| Built       |  |
| Planned     |  |
| Inferred    |  |
| Building    |  |
| Kiosk       |  |
| Hatchings   |  |

|                 |  |
|-----------------|--|
| Pole            |  |
| Planned Pole    |  |
| Joint Box       |  |
| Change Of State |  |
| Split Coupling  |  |
| Duct Tee        |  |
| Planned Box     |  |
| Manhole         |  |
| Planned Manhole |  |
| Cabinet         |  |
| Planned Cabinet |  |

Other proposed plant is shown using dashed lines.  
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BT Ref : GUH04049T  
Map Reference : (centre) SJ3829449360  
Easting/Northing : (centre) 338294,349  
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# APPENDIX G – OR Telecommunications Record Plan 2 of 3



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## KEY TO BT SYMBOLS

|             |  |
|-------------|--|
| DP          |  |
| Planned DP  |  |
| PCP         |  |
| Planned PCP |  |
| Built       |  |
| Planned     |  |
| Inferred    |  |
| Building    |  |
| Kiosk       |  |
| Hatchings   |  |

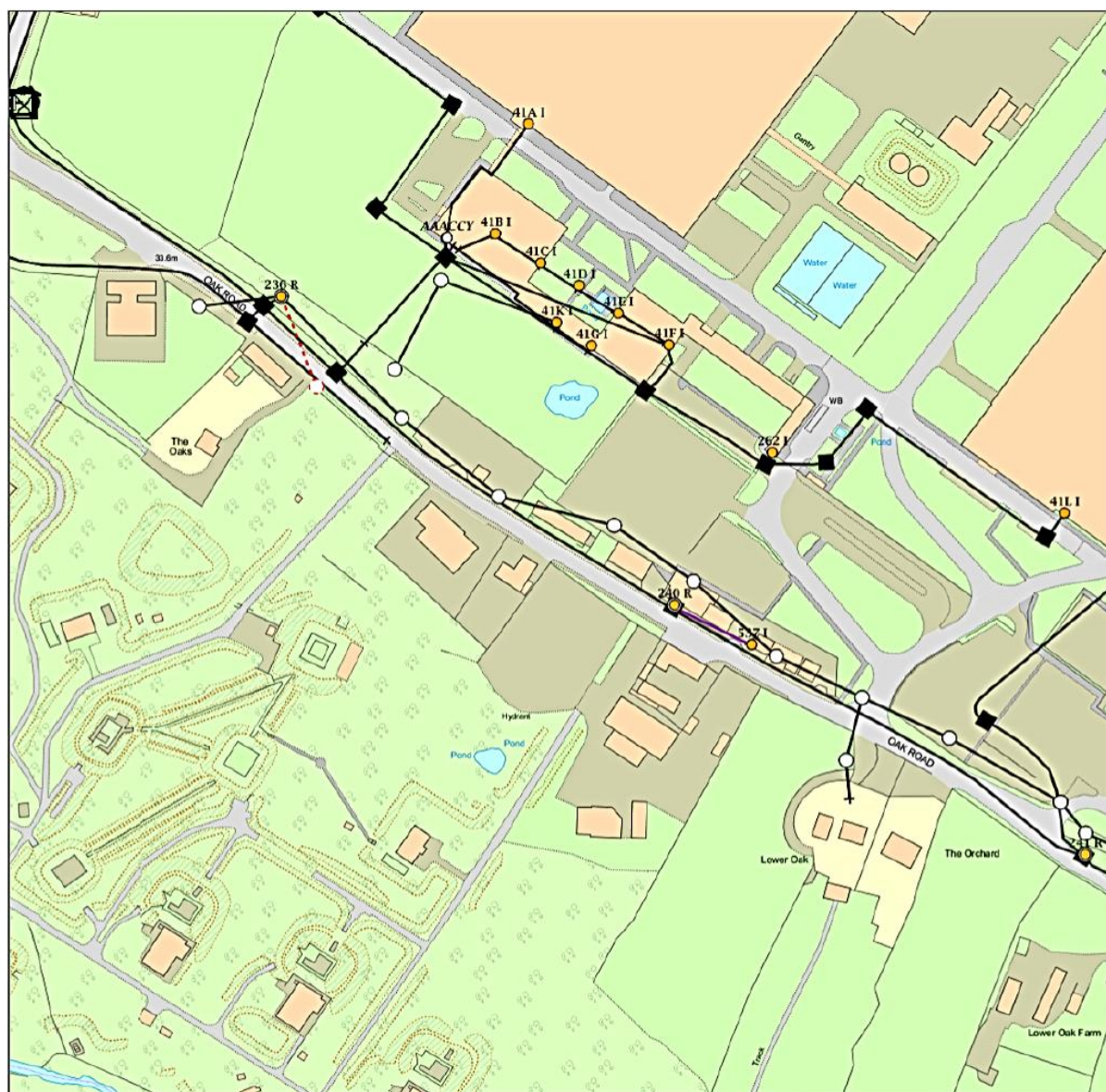
|                 |  |
|-----------------|--|
| Pole            |  |
| Planned Pole    |  |
| Joint Box       |  |
| Change Of State |  |
| Split Coupling  |  |
| Duct Tee        |  |
| Planned Box     |  |
| Manhole         |  |
| Planned Manhole |  |
| Cabinet         |  |
| Planned Cabinet |  |

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## APPENDIX G – OR Telecommunications Record Plan 3 of 3

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**KEY TO BT SYMBOLS**

|             |  |
|-------------|--|
| DP          |  |
| Planned DP  |  |
| PCP         |  |
| Planned PCP |  |
| Built       |  |
| Planned     |  |
| Inferred    |  |
| Building    |  |
| Kiosk       |  |
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| Planned Cabinet |  |

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