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# Drainage Strategy For:

CLDP PROPOSED RESIDENTIAL ALLOCATION ON LAND AT WATERLOO ROAD, PENYGROES.

## Prepared for:

Mannor Homes

**DATE OF REPORT**

24th August 2018

**REF: 7690-01**

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**Contents**

## 1.0 Introduction

Vale Consultancy were instructed by our client Manor Homes to undertake a Drainage Strategy Assessment, CLDP proposed residential allocation on land at Waterloo Road, Penygroes and adjacent land at Waterloo Road, Penygroes, Carmarthenshire, SA14 7PS. The site is located at NGR: SN 58810, 13028.

The candidate site is currently open grass land, and due to the site location it is not expected that the site has been significantly developed in the past, as such the site will be classified as Greenfield.

This report has been produced with respect to the candidate site being offered for inclusion in the revised 2018-2033 Carmarthenshire Local Development Plan, and is part of a wide submission from other Consultants.

The report outlines the existing and proposed site drainage at a strategic level, summarising what would be provided for surface water and foul water schemes to satisfactorily manage the flow generated, with respect to the site and the surrounding area. A full drainage strategy will be required for any subsequent planning application.

In association with the drainage strategy, the report also outlines current flood risks and potential flood risks post development. A full Flood Consequence Assessment (FCA) may be required to support subsequent planning application.

## 2.0 Site Description and Context

### 2.1 Location, Description & Topography

The site is located on land east of Waterloo Road., and is open grassland which is not thought to have been significantly developed in the past. The site is slightly sloping, with the topography of the ground reducing from west to east. An open water course forms the south eastern boundary to the site. The water course is thought to eventually discharge into the Afon Lash 2.5km east of the site, which in turn feeds into the River Lougher.

### 2.2 Proposed Development

The proposed development is shown on DP Architecture drawing 17-023/LDP1, included in **Appendix A**, and comprises 20 No. dwellings and access road infrastructure. With access provided at a dedicated new entrance onto Waterloo Road, the access road would be offered for adoption to Carmarthenshire Council, under the provision of a 278/38 agreement, Highway Act 1980.

## 3.0 Drainage Systems

### 3.1 Existing Drainage

The candidate site is crossed by DCWW sewerage infrastructure, of both combined and surface water sewers, which serve the existing properties of Bryndedwyddfa, immediately north of the site. The current DCWW apparatus record plan is included in **Appendix B**, which shows the combined sewer crossing the site in a south westerly direction to a manhole on Waterloo road, and a surface water sewer crossing the northern part of the site in a north easterly direction, which discharge at a headwall.

### 3.2 Proposed Drainage

The existing ground conditions are unknown, in relation to porosity to accept surface water discharge, so as part of any future detailed drainage design percolation tests will be required at appropriate locations to suit the proposed site layout. However the ground was relatively waterlogged when the site was visited with reed grass covering parts of the site indicating that this is a common occurrence. The underlying ground conditions are expected to be unfavourable for the use of soakaways, however as part of any future detailed drainage design percolation tests will be required at appropriate locations to suit the proposed site layout to validate the assumption that the ground has a low porosity.

The surface water drainage scheme design would be based on an attenuated and discharge to the water course to the south east boundary of the site. This is applicable for both the private surface water and the adoptable highway surface water. To provide the appropriate attenuation storage, a two tank system will be required, to satisfy differing requirements of DCWW and Local Lead Flood Authority. The attenuation rate will be set at the greenfield rate. Initial assessment identifies a total of circa 250 $m^3$ of attention storage will be required. This is based on an accepted minimum discharge rate of 5 l/s, which is expected to be higher than the QBAR rate. The attenuation will be located in public open space, or in a combination of adoptable highway land and public open space, which will depend on the spatial constraints of the site, and the requirements of approving bodies.

Foul discharge from the development will discharge into a new adoptable DCWW gravity foul sewer which will connect to the existing DCWW combined sewer network near the south west corner of the candidate site.

The location of the existing DCWW combined and surface water sewer that cross the site is restrictive to the nature of the proposed development. As such. A diversion of both the combined and SW sewer will be required. The relocated sewers will be within either, gardens,

public open spaces or adopted highway land, with the regulatory 6m easement to provide DCWW access to maintain the sewers.

## 4.0 Dwr Cymru Welsh Water Infrastructure Capacities

A Pre App enquiry has been submitted to DCWW, to determine the current spare capacity in water supply and sewerage systems in the vicinity of the candidate site. It is noted that Pre App enquiries are assessed at a high level without any detailed capacity modeling. As such the findings may not be conclusive, this is particularly the case in areas where there is the possibility of other candidate sites with Pre App enquiries that may potentially make demands on the DCWW networks. The Pre App response from DCWW is including in **Appendix C**. It is noted in the DCWW response that some public sewers and lateral drains may not be recorded on the DCWW apparatus maps, if they were originally privately owned and were transferred into public ownership by nature of the Water industry (Scheme for Adoption of Private Sewers) Regulations 2011.

### 4.1 Sewerage

The DCWW response states that foul flows only can be accommodated within the public sewerage system. With flows communicated to the foul sewer between manholes SN58138106 and SN58127901 crossing the site. The communication point would be controlled via a planning condition, if an alternative connection point is preferred, a drainage strategy should be submitted to DCWW prior to a planning application being submitted. If critical to the scheme the developer could apply for a sewer diversion under Section 185 of the Water Industry Act.

The response recommends that a sustainable drainage strategy be developed and submitted with any formal planning application, taking account of Planning Policy Technical Advice Note 15 (TAN15) and SuDS in Wales guidance.

Drainage strategy and flood risk are outlined in this report, which outlines the proposed surface water management mechanisms and the appropriate siting of the developable area with the boundary of the candidate site. This would be developed and expanded as part of a full planning application.

The response also highlights that the 3m easement from the centerline of the foul sewer and surface water sewers has to be maintained. As noted in Section 3.2, a sewer diversion will be required for both the combined and SW sewers that cross the site. Discussions will be held with DCWW prior to a planning application being submitted.

### 4.2 Sewerage Treatment

No problems are envisaged with the Waste Water Treatment Works for the treatment of domestic discharge from the site.

### 4.3 Water Supply

A water supply can be made available to service the development of the candidate site, with initial indications that a connection can be made from the 110mm diameter HPPE water main with NGR: 258782, 213020, immediately west of the candidate site in Waterloo Road. The costs can be established by DCWW when they are in receipt of detailed site layout plans.

## 5.0 Flood Risk

The Natural Resource Wales (NRW) development flood risk maps for the three main modes of flooding are included in **Appendix C**. These include risk of flooding from rivers and sea, surface water and reservoirs. As shown on the risk maps, the only mode of flood risk is from surface water. The area is a localised zone, extending from the south east boundary of the site (adjacent to the open water course), to the north east corner of the site. Development will be restricted in these zone, which are likely to remain as public open spaces, or ecology zones, alternatively the risk can be managed. The impact of the minor surface water flooding within the site will be investigated further as part of scheme detailed design. The overall current risk of flooding from all three modes of flooding is deemed to be low.

## 6.0 Conclusion

The above assessment describes the strategy for managing foul and surface water arising from the development and also the current and post-development flood risk.

It is concluded that following detailed design, foul and surface water discharge can be adequately managed.

Surface water runoff from private and adoptable highway areas will be discharge to the adjacent water course at an agreed attenuated rate.

The DCWW Pre-App response states that **foul flows only** can be accommodated within the public sewerage system. With flows communicated to the combined sewer between manholes SN58138106 and SN58127901, which are immediately north and south of the site respectively. The communication point would be controlled via a planning condition. However the scheme will require sewer diversion, for both the combined and SW sewers.

No problems are envisaged with the DCWW Waste Water Treatment Works for the treatment of domestic discharge from the site.

A water supply can be made available to service the development of the candidate site from the existing supply in DCWW supply in Waterloo Road.

The flood risk to the site is currently low, and with the appropriate detailed drainage design the risk to the candidate site and immediate surrounding area will remain low. The only identified risk is low risk surface water flooding from the south east boundary of the site (adjacent to the open water course), to the north east corner of the site, and which will remain in undeveloped areas of the site.

Further investigations and assessments may be required as part of any future full planning application for this site.

# APPENDIX A

## Proposed Development Plan

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# APPENDIX B

## DCWW Apparatus Record Plans

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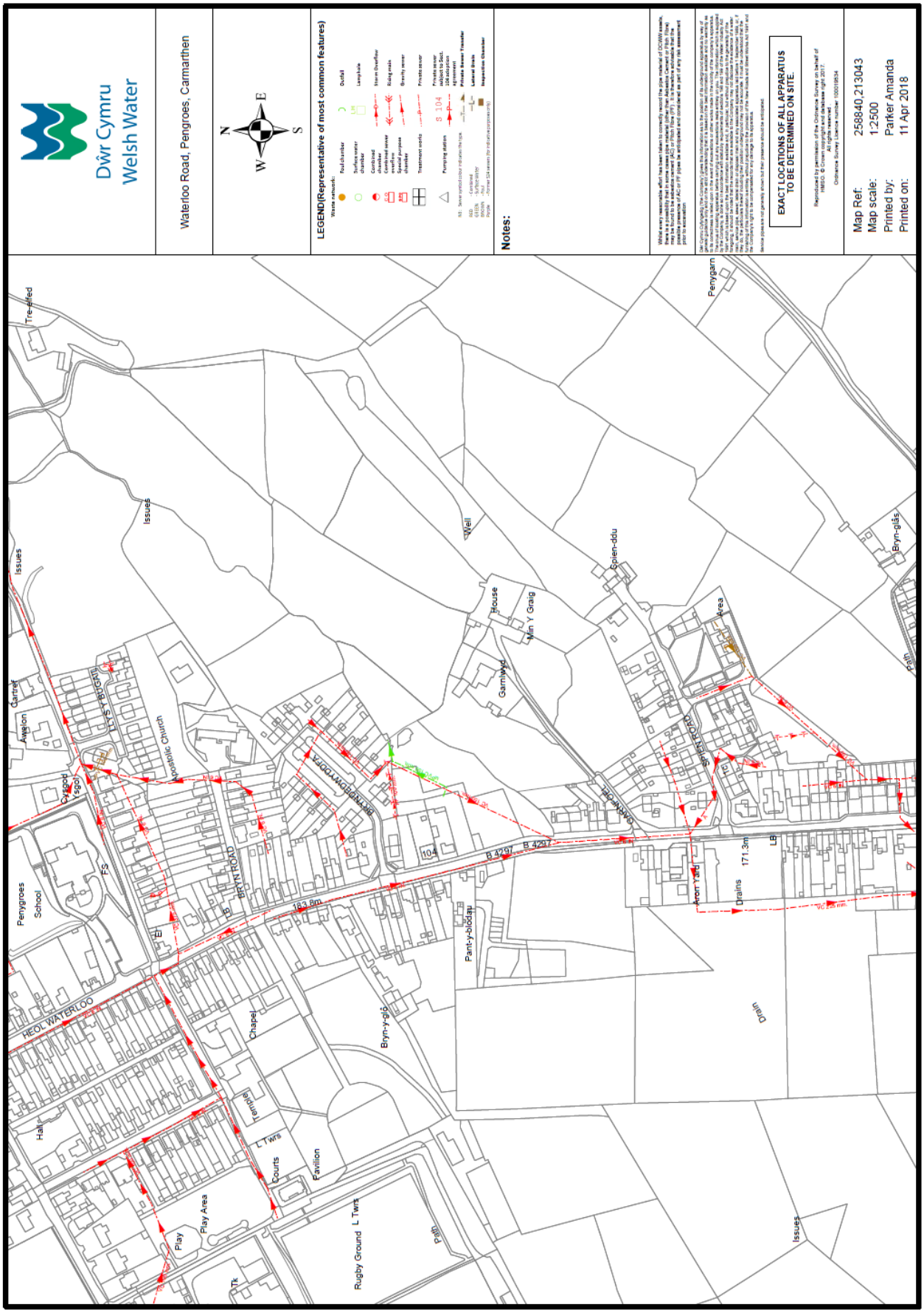

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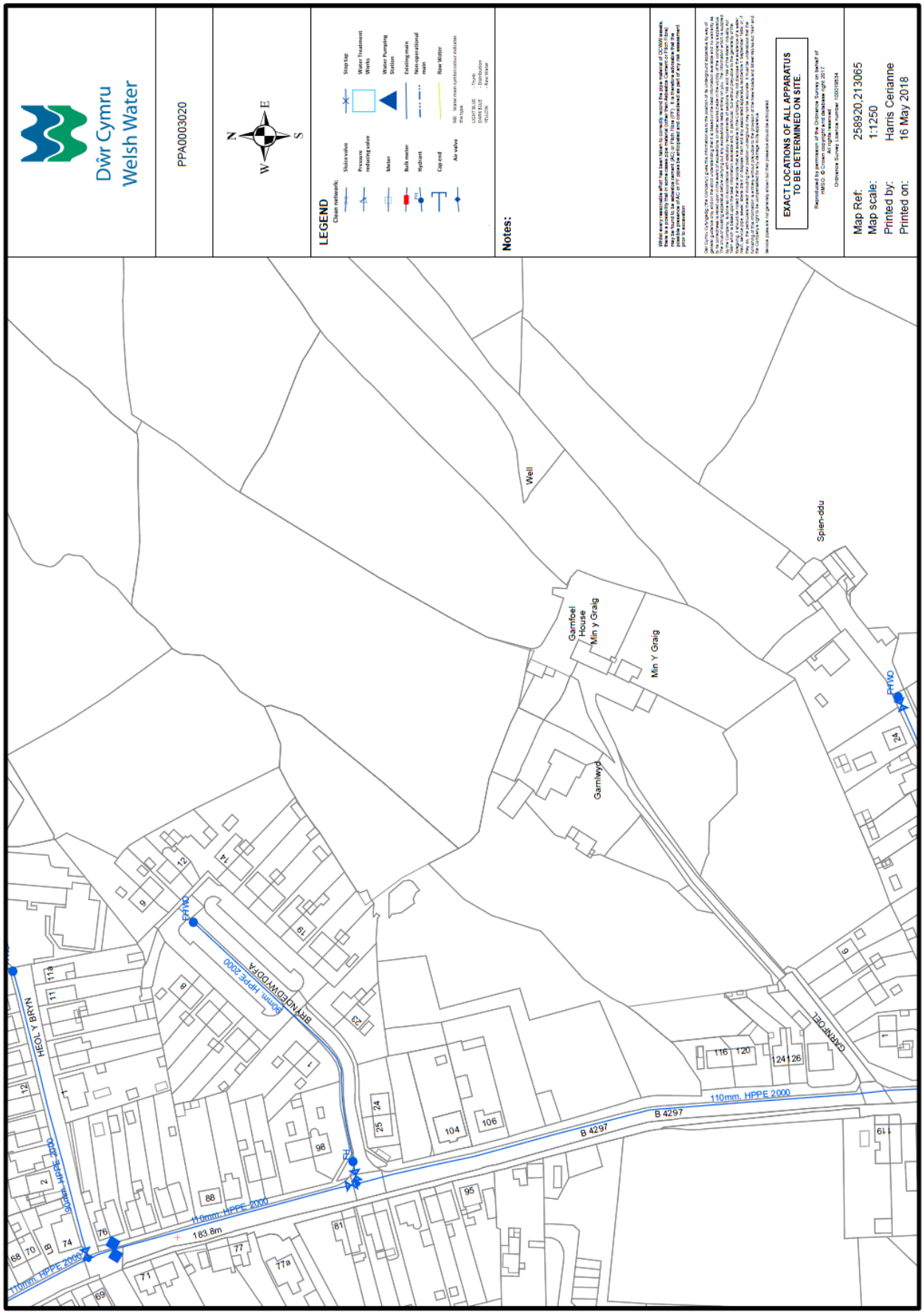

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# APPENDIX C

## DCWW Pre App Response

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Welsh Water

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Mr Nick Clifford,
Manor Homes,
Garnfoel House ,
Garnfoel,
Penygroes,
Carmarthenshire.
SA14 7PS

**Date: 17/05/2018**
**Our Ref: PPA0003020**

Dear Mr Clifford,

**Grid Ref: 258867 213062**
**Site Address: Land adjacent to 106 Waterloo Road, Penygroes**
**Development: Residential Development of up to 25 Dwellings**

I refer to your pre-planning enquiry received relating to the above site, seeking our views on the capacity of our network of assets and infrastructure to accommodate your proposed development. Having reviewed the details submitted I can provide the following comments which should be taken into account within any future planning application for the development.

**SEWERAGE**

The foul flows only from the proposed development can be accommodated within the public sewerage system. We advise that the flows should be communicated with to the 150mm combined sewer crossing the site between manholes SN58138106 and SN58127901.

Should a planning application be submitted for this development we will seek to control these points of communication via appropriate planning conditions and therefore recommend that any drainage layout or strategy submitted as part of your application takes this into account.

However, should you wish for an alternative connection point to be considered please provide further information to us in the form of a drainage strategy, preferably in advance of a planning application being submitted.

With reference to the surface water flows from the proposed development, we recommend that a sustainable drainage strategy be developed and submitted with the formal planning application. We will not allow any surface water whatsoever to be drained to this sewer. We strongly recommend that you take account of the guidance offered by Planning Policy Technical Advice Note 15 (TAN15) section 8 and "Recommended non-statutory standards for sustainable drainage (SuDS) in Wales – designing, constructing, operating and maintaining surface water drainage systems" - 2017 Digital ISBN: 978 1 4734 8768 0. This should take account of the existing public surface water sewer that also crosses the site and appears to have an outfall upon it. Please note that no highway or land drainage run-off will be permitted to discharge directly or indirectly into the public sewerage system.

You may need to apply to Dwr Cymru Welsh Water for any connection to the public sewer under Section 106 of the Water industry Act 1991. However, if the connection to the public sewer network is either via a lateral drain (i.e. a drain which extends beyond the connecting property boundary) or via a new sewer (i.e. serves more than one property), it is now a mandatory requirement to first enter into a Section 104 Adoption Agreement (Water Industry Act 1991). The design of the sewers and lateral drains must also conform to the Welsh Ministers Standards for Foul Sewers and Lateral Drains, and conform with the publication "Sewers for Adoption"- 7th Edition. Further information can be obtained via the Developer Services pages of www.dwrcymru.com

We advise that the proposed development site is crossed by separate public combined and surface water sewers with their approximate position being marked on the attached Statutory Public Sewer Record. Welsh Water requires access to its apparatus at all times in order to carry out maintenance and repairs over a protection zone measured 3 metres either side of it's centreline. In the first instance, it is recommended that the developer carry out a survey to ascertain the location of the sewers and establish their relationship to the proposed development. If the development is found to encroach upon the protection zone it may be possible to divert the sewers, if the developer applies under Section 185 of the Water Industry Act, and we request that they contact us to discuss our concerns and consider possible solutions.

You are also advised that some public sewers and lateral drains may not be recorded on our maps of public sewers because they were originally privately owned and were transferred into public ownership by nature of the Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011. The presence of such assets may affect the proposal. In order to assist you may contact Dwr Cymru Welsh Water on 0800 085 3968 to establish the location and status of the apparatus in and around your site. Please be mindful that under the Water Industry Act 1991 Dwr Cymru Welsh Water has rights of access to its apparatus at all times.

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**SEWAGE TREATMENT**

No problems are envisaged with the Waste Water Treatment Works for the treatment of domestic discharges from this site.

**WATER SUPPLY**

A water supply can be made available to service this proposed development. Initial indications are that a connection can be made from the 110mm diameter HPPE water main at national grid reference 258782, 213020. The cost of providing new on-site water mains can be calculated upon the receipt of detailed site layout plans which should be sent to the above address.

I trust the above information is helpful and will assist you in forming water and drainage strategies that should accompany any future planning application. I also attach copies of our water and sewer extract plans for the area, and a copy of our Planning Guidance Note which provides further information on our approach to the planning process, making connections to our systems and ensuring any existing public assets or infrastructure located within new development sites are protected.

Please note that our response is based on the information provided in your enquiry and should the information change we reserve the right to make a new representation. Should you have any queries or wish to discuss any aspect of our response please do not hesitate to contact our dedicated team of planning officers, either on 0800 917 2652 or via email at **developer.services@dwrcymru.com**

Please quote our reference number in all communications and correspondence.

Yours faithfully,

[redacted]

**Owain George**
**Planning Liaison Manager**
**Developer Services**

***Please Note** that demands upon the water and sewerage systems change continually; consequently the information given above should be regarded as reliable for a maximum period of 12 months from the date of this letter.*

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# APPENDIX D

## NRW Flood Risk Maps

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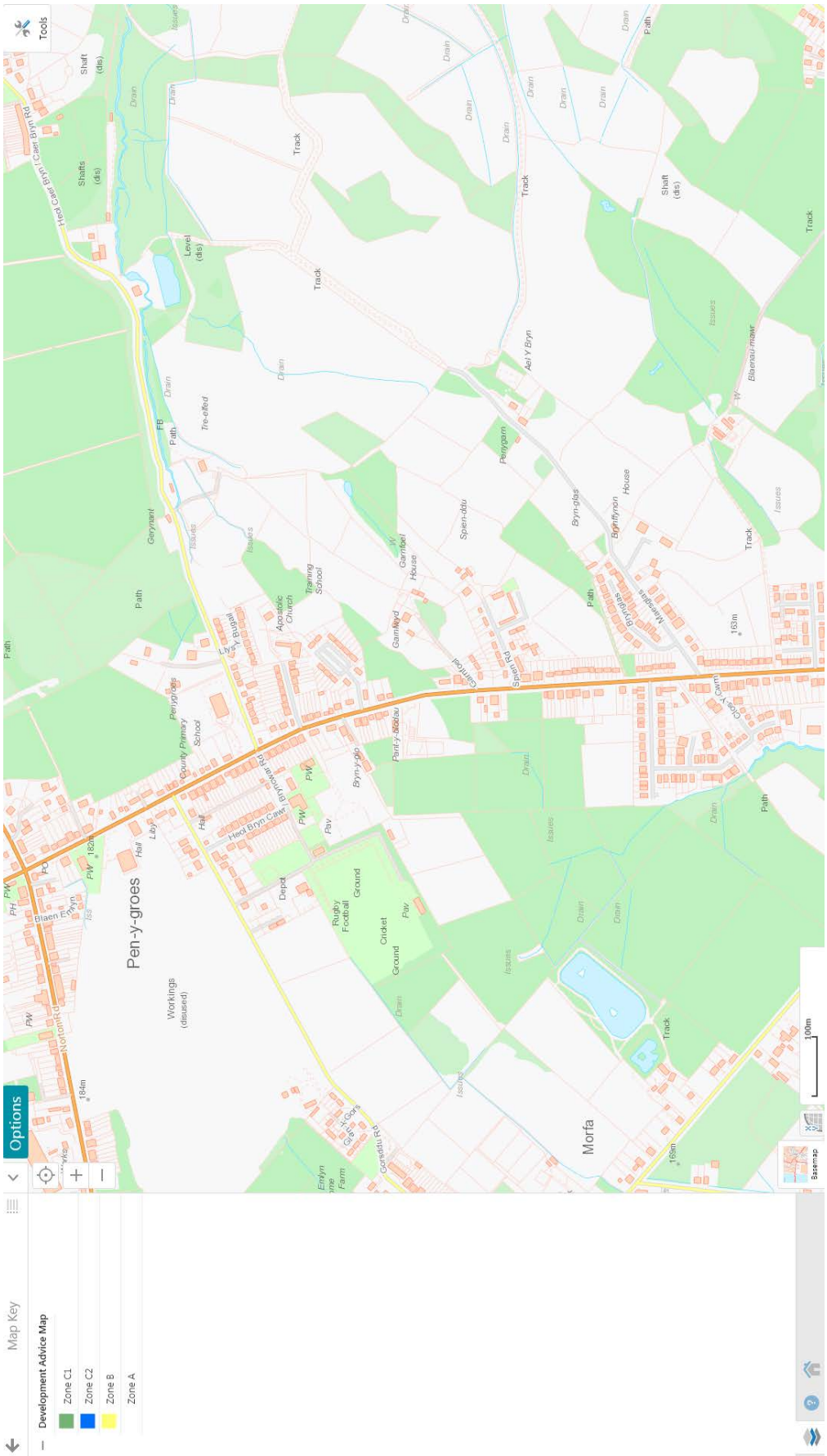

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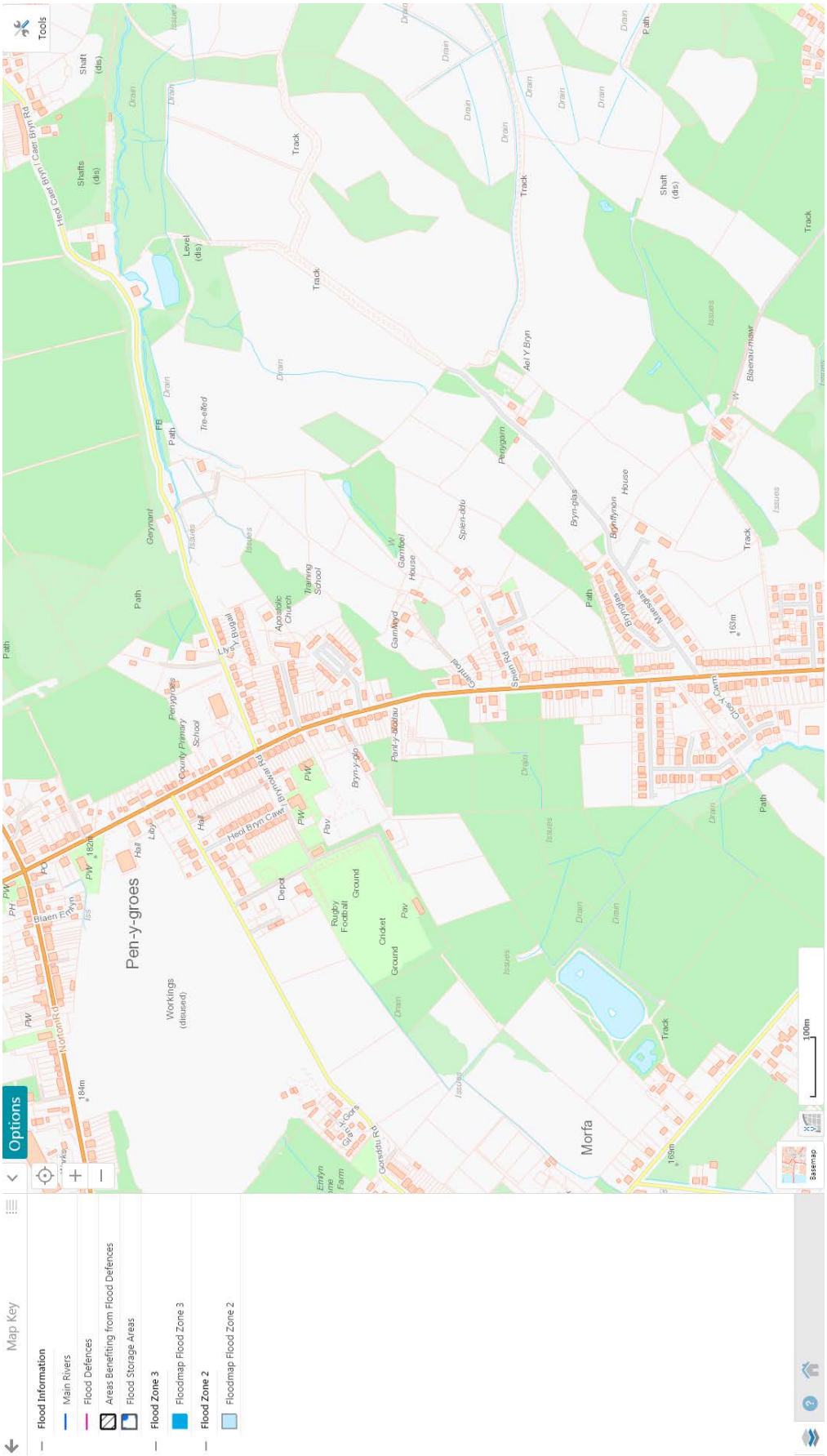

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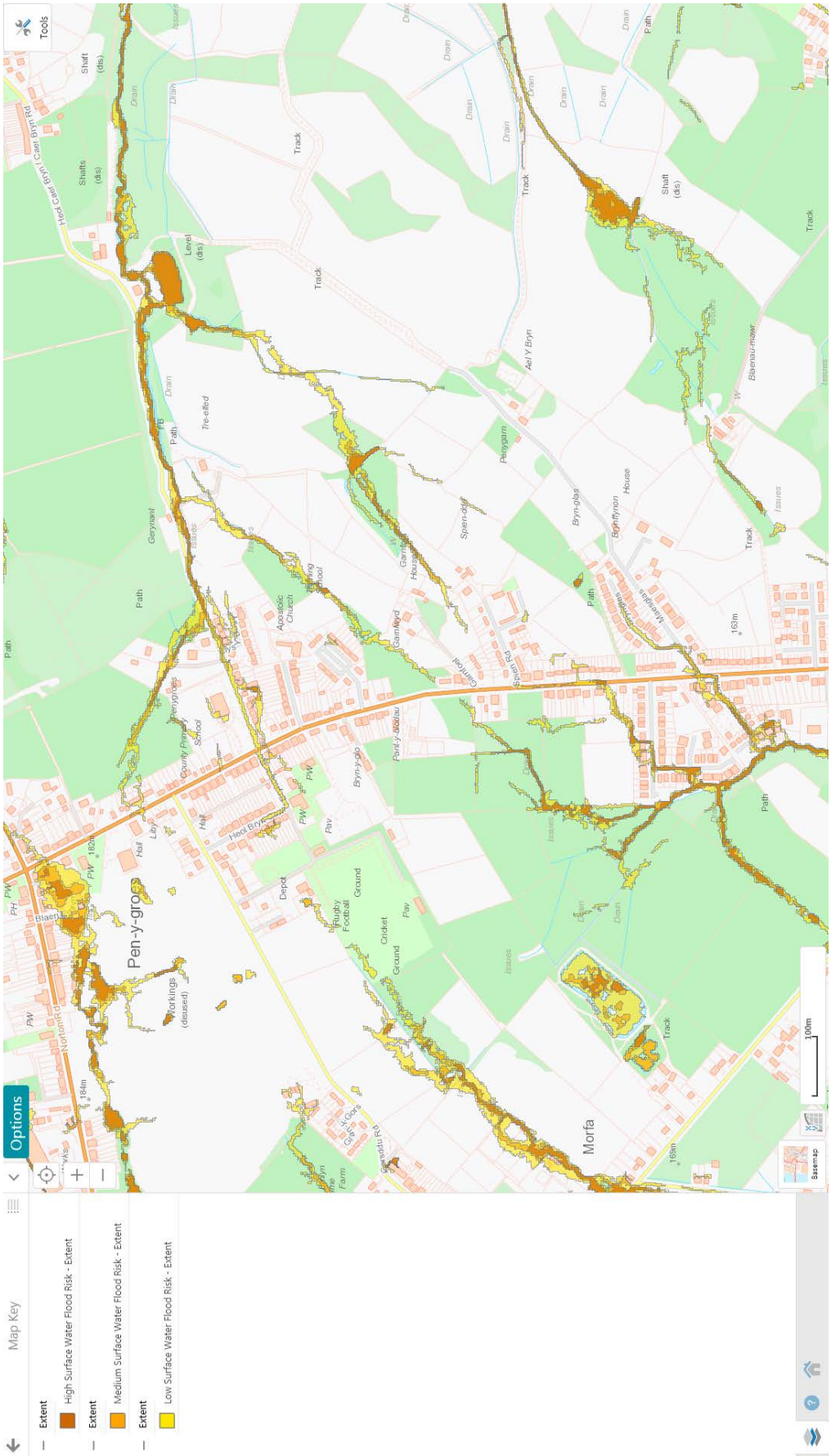

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