



CLAWDD PONCEN, CORWEN

Flood Consequence Assessment

October 2025

Document Control			
Issued by	Land Studio		Tel: 01244 319 019
	The Old Rectory St Marys Hill Chester CH1 2DW		www.landstudio-uk.com
Client	Williams Homes		
Project Name	Clawdd Poncen		
Document Title	Flood Consequence Assessment		
Document Ref	501-LST-XX-XX-RP-D-0001		
Status	Planning		
Publish Date	29.08.2025		
Document Revision			
P01	Draft Issue	29.08.2025	Issued for Comment
P02	Planning Issue	08.10.2025	Site Layout Updated

This document has been produced by Land Studio on behalf of Williams Homes. The contents of the document are intended for submission with a planning application related to a proposed residential development in Clawdd Poncen, Corwen. Land Studio has prepared this report in accordance with the instructions of the above-named client for their sole and specific use. Any third parties who may use the information contained herein do so at their own risk.

CONTENTS

INTRODUCTION 4

- Introduction
- The Site
- Relevant Planning Policy & Guidance

BASELINE REVIEW 8

- Flood Risk
- Flood Risk from Rivers and Seas
- Flood Risk from Surface Water
- Flooding from Reservoirs
- Flooding from Sewers and Drains
- Watercourses
- Topography
- Geological Setting

ASSESSMENT OF FLOOD RISK 12

- Assessment of Flood Risk
- Maintaining Exceedance Events
- Sustainable Drainage
- Flood Risk Conclusion

DRAINAGE DESIGN CRITERIA 14

APPENDICES 16

Clawdd Poncen, Corwen: **INTRODUCTION**

01

CLAWDD PONCEN, CORWEN: INTRODUCTION



Figure 1 Site Location

Land Studio have been appointed by Williams Homes (Bala) Limited to produce a Flood Consequence Assessment in support of a planning application for the construction of a new residential development in Clawdd Poncen, Corwen.

This report records the results of a Flood Consequence Assessment which has been carried out in accordance with Planning Policy Wales (PPW) and Technical Advice Note (TAN 15).

This report considers the risk of various sources of flooding to the site and the consequent risk of flooding to the downstream receptors (such as people, property, habitats, infrastructure and statutory sites) and recommends any necessary measures to reduce or mitigate flood risk to both the site and downstream catchment.

The proposed drainage strategy has been produced by others and therefore whilst drainage design criteria is included in this report the detailed drainage design is covered by a separate report.

In preparation of the report and performance of any other services, Land Studio has relied upon publicly available information, information provided by the client and information provided by third parties. Accordingly, the conclusions reached in this report are valid only to the extent that the information provided was accurate and complete. Land Studio cannot accept liability for the accuracy or otherwise of any information derived from third party sources.

CLAWDD PONCEN, CORWEN: THE SITE



Figure 2 Proposed Development

The development site is existing agricultural land located in Clawdd Poncen, Corwen.

The grid reference for the centre of the development is SJ 07224 44674. The site location can be found in Figure 1.

The site is bounded by the B5437 to the north east boundary, the A5104 to the western boundary and an existing residential development and childrens playground to the east.

An existing drainage ditch is located on the existing south eastern site boundary along the existing hedgeline.

The proposed development is the construction of 100 new residential properties with the proposed development plan indicated in Figure 2.

CLAWDD PONCEN, CORWEN: RELEVANT PLANNING POLICY &

The following legislation and planning guidance have been reviewed and considered in preparation of this report and the subsequent design.

Planning Policy and Guidance

The following legislation and planning guidance has been reviewed in regards to Flood Risk. Additional policy and guidance in relation to drainage design is available and will be covered by the separate drainage strategy report.

Planning Policy Wales (PPW)

Planning Policy Wales (PPW) sets out governments planning policies for Wales and how these are expected to be applied. TAN 15 provides technical guidance which supplements the policy within PPW and seeks to ensure that flood risk is taken into account at all stages in the planning process and is appropriately addressed.

National policy requires that planning applications for new developments should incorporate sustainable drainage systems (SuDS) to appropriate operational standards and with maintenance arrangements in place unless there is clear evidence that this would be inappropriate.

PPW states that the planning system protects water features and fosters sustainable water management as key attributes of attractive and resilient places to live and is closely aligned with securing the multiple benefits of green infrastructure. The outcome of which should make a contribution towards achieving the requirements imposed by EU Water Framework Directive along with Welsh Government Policy for the integrated planning and management of water both in the urban and rural areas.

New developments of more than one dwelling or where the area covered by construction work equals or exceeds 100m² also requires approval from the SuDS Approval Body (SAB) before construction can commence.

The provision of SuDS must be considered as an integral part of the design of new developments and proposals should incorporate design of surface water management based on the principles which work with nature to facilitate the natural functioning of the water cycle.

Any developments discharging domestic sewage should connect to the foul sewer where it is reasonable to do so. Developments proposing the use of non-mains drainage schemes will only be considered acceptable where connection to the main sewer is not feasible. Non mains drainage schemes should be subject to an assessment of their effects on the environment, amenity and public health in the locality.

All developments should reduce, and must not increase, flood risk arising from river and/or coastal flooding on and off the development itself.

All developments should not cause additional run-off and therefore requires control as close to source as possible by the use of SuDS.

Technical Advice Note 15: Development and Flood Risk

TAN 15 sets out a precautionary framework to guide planning decisions in areas at high risk of flooding. The aim of the framework is to direct new developments away from those areas which are at high risk of flooding and where developments are considered in high risk flood areas only those developments which can be justified should be located in such areas. The aim of TAN15 is also to ensure that flood risk is considered at all stages in the planning process and to direct development run-off away from the areas at highest risk. Where new development is proposed in such areas, policy aims to make it safe without increasing flood risk elsewhere and where possible to reduce flood risk overall.

For “highly vulnerable development (houses) TAN 15 requires the developer must ensure that future occupiers of the development are aware of the flooding risks and any consequences, effective flood warnings if necessary are provided, escape routes are known, development is designed to minimise structural damage during any flooding, there is no flooding elsewhere due to the development and that any flood mitigation is designed, maintained and paid for by the developer.

The Flood Map for Planning (which will replace the Development Advice Maps) are provided by Natural Resources Wales (NRW) based on Environment Agency’s extreme flood outlines and British Geological Survey drift data. These indicate the level of risk associated fluvial, coastal and surface water on the location of the site and how to assess the consequences of flooding on the site.

To reduce surface water run-off from the site sustainable drainage solutions both hard and soft can be employed to manage and treat surface water run-off prior to discharge.

Statutory Authority Guidance

The approach outlined in the Welsh Government Sustainable Drainage Systems Standards for Wales (SuDS Standards) and the CIRIA SuDS manual seek to manage the quality and quantity of rainwater runoff close to where it falls and to bring not just drainage design solutions but also amenity benefits to site users and encourage biodiversity. The SuDS Standards require compliance with the following objectives and are covered further in the separate drainage design strategy report. S1: Surface water runoff destination, S2: Surface water runoff hydraulic control, S3: Water Quality, S4: Amenity and S5: Biodiversity.

Local Policy

The Denbighshire County Council Adopted Local Development Plan 2006-2021 Policy VOE6 Water Management requires all developments to ensure they do not increase the risk of flooding.

This is to be achieved by eliminating or reducing surface water runoff from the site and providing Sustainable Drainage Features (SuDS) within the design.

Policy RD1 Sustainable development and good standard design should look at natural environmental features relating to flooding and drainage and incorporate where possible hard and soft landscaping features that help reduce pollution and increase amenity and biodiversity benefits. The Replacement Local Development Plan 2018-2033 is still in progress.

Climate change is one of the largest threats to our environment therefore Denbighshire County Council also require developments to minimise the impact it has on climate change by ensuring new development can adapt to the impacts of climate change, such as increased flood risk, extreme weather events and rise in sea levels, by ensuring that new development is located away from those areas that are susceptible to flooding. The use of sustainable drainage systems will be required within all new development proposals.

Clawdd Poncen, Corwen: **BASELINE REVIEW**

02

CLAWDD PONCEN, CORWEN: BASELINE DATA REVIEW

Flood Risk

Flood risk is a combination of the probability and the potential consequence of flooding. Areas at risk of flooding are those at risk of flooding from any source now or in the future. The key aims of this flood consequence assessment are to:

- Assess the flood risk to the development and to demonstrate the feasibility of designing the development so that the risk of flooding is acceptable.
- Assess the potential impact of the development on flood risk elsewhere and demonstrate that this can be mitigated by using sustainable drainage systems.
- Satisfy the requirements of the Technical Advice Note (TAN 15).

Flood Risk from Rivers (Fluvial)

The NRW Flood Maps for Planning indicates that the area within the redline boundary is in a Flood Zone 1 for fluvial flooding which is land that has been assessed as having a less than 1 in 1000 annual probability of river flooding (<0.1%).

The site is therefore at a very low risk of river flooding.

Flood Risk from Seas (Tidal)

The NRW Flood Maps for Planning indicates that the area within the redline boundary is in a Flood Zone 1 for tidal flooding which is land that has been assessed as having a less than 1 in 1000 annual probability of tidal flooding (<0.1%). The sea is approximately 36km to the north of the site.

The site is therefore at a very low risk of tidal flooding.

Flood Risk for Surface Water (Pluvial)

Overland flow occurs when the infiltration capacity of the ground or capacity of the drainage systems is exceeded in a storm event. This can result in water travelling over land or ponding. The NRW Flood Maps for Planning indicates a surface water flood route through the site along the western boundary. The topography on the site falls towards this boundary where there is a ditch which flows in a south westerly direction.

It is possible that a surface water flow route exists from the industrial development on the north of the B5437 and therefore any development proposal will need to keep this flow route free from development or designed into the development plans if redirected. No changes in the proposed levels are to be made if the existing route is to remain.

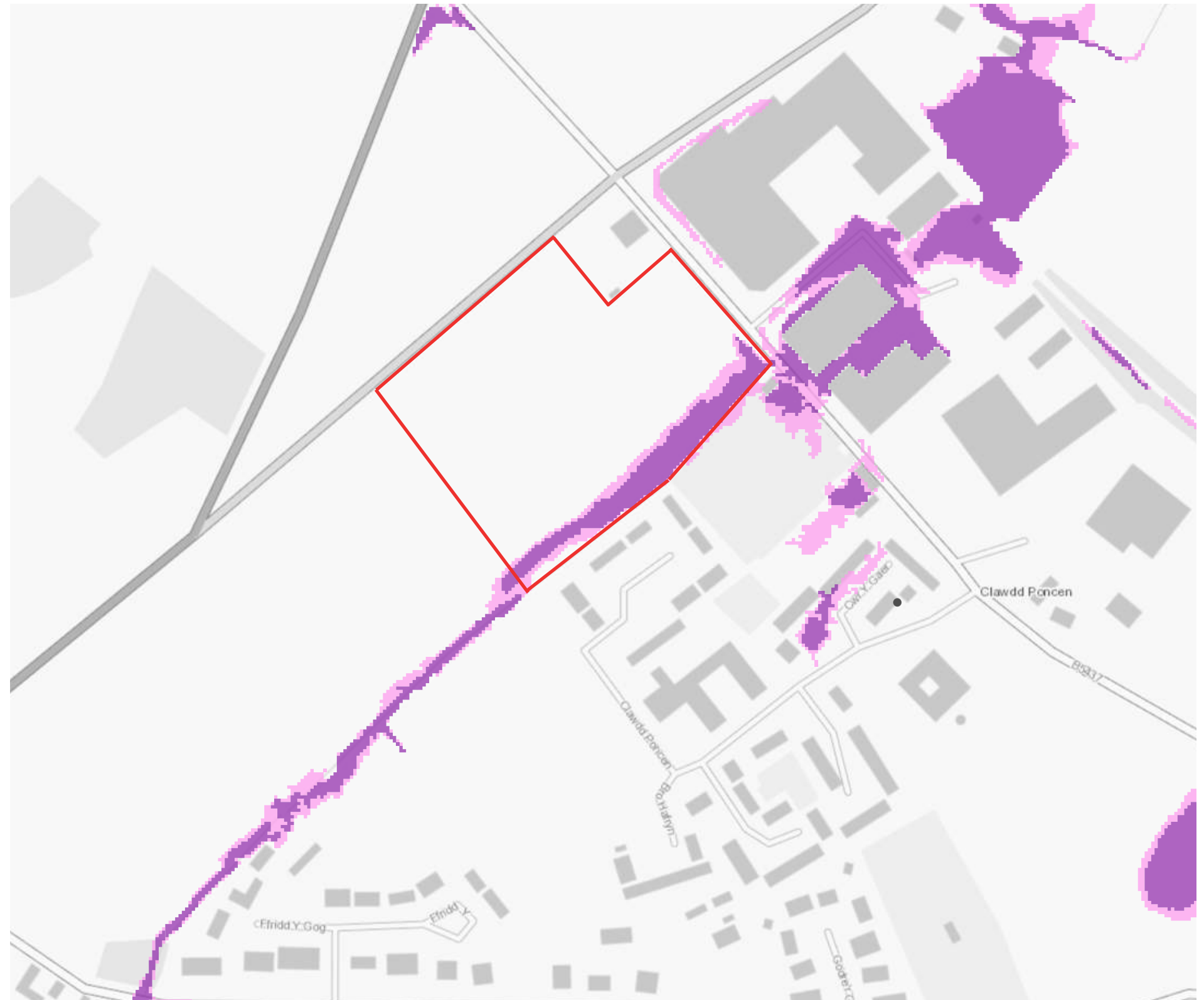


Figure 3 Natural Resources Wales Flood Risk for Planning Map

CLAWDD PONCEN, CORWEN: BASELINE DATA REVIEW

Flooding from Reservoirs

The site is not located in proximity of any reservoirs and the Flood Maps for Planning indicate that flooding from reservoirs is at very low risk at this site.

Flooding from Sewers and Drains

If the capacity of the sewer or private drains are exceeded in an extreme weather event, or a blockage occurs within the system, surcharging of the drainage network can result in flooding. The site is greenfield and there are no known below ground drainage networks within the site.

There are two existing outfalls indicated on the Welsh Water public sewer records into the open ditch along the western boundary of the site which are to remain in the scheme. No development is to be located within 10m of these to allow unrestricted discharge into the open ditch.

Topography on the site rises up from the outfalls with the closest properties approximately 30m away and 1.3m above the invert level of the outfalls.



Figure 4 Dwr Cymru Welsh Water Sewer Records Extract

CLAWDD PONCEN, CORWEN: BASELINE DATA REVIEW

Topography

The topography falls from approximately 168m AOD in the west and 167m AOD in the north to 162m AOD in the east and 161.2m AOD in south.

The levels along the existing open ditch falls from 162.0 AOD on the B537 in the north east corner to 161.62m AOD in the south west corner.

A copy of the topographical survey can be found in the Appendix of this report.

Watercourse

Data Map Wales indicates the closest main river is the Afon Dee approximately 580m from the site in the south east. This is indicated in Figure 5.

The surface water flow route from the site can also be seen in Figure 5 following the topography along the site boundary and leaving the site in the south firstly flowing south and then south east towards the Avon Dee.

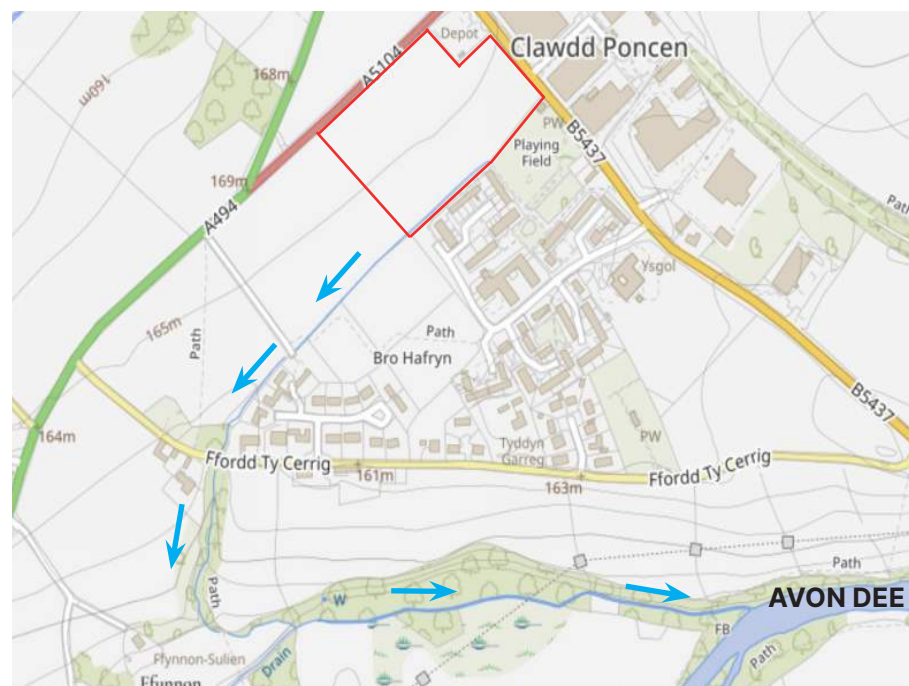


Figure 5 : Surface Water Flow Route Off Site

Geological Setting

Heavy rain falling on waterlogged ground or impermeable surfaces can cause localised flooding almost anywhere.

The soilscape mapping taken from Landis.org.uk indicates the site is underlain by freely draining acid loamy soils over rock as highlighted in pink in Figure 6.

It indicates that the site drains to local groundwater and the river network. Infiltration testing will be undertaken to support the drainage strategy. Due to the likely permeability of the ground and its topography flooding from waterlogged ground is unlikely.

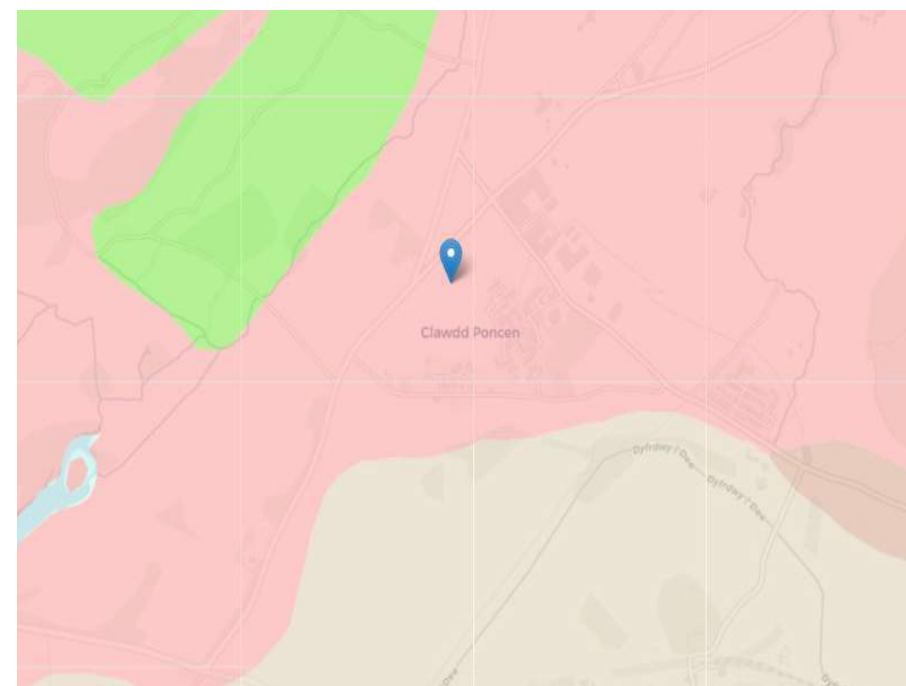


Figure 6: Soilscape Mapping from Landis.org.uk

Clawdd Poncen, Corwen: **ASSESSMENT OF FLOOD RISK**

03

CLAWDD PONCEN, CORWEN: ASSESSMENT OF FLOOD RISK

Assessment of Flood Risk

Figure 4 of TAN 15 Development, Flooding and Costal Erosion indicates that residential developments are classed as “highly vulnerable” and therefore opportunities to incorporate flood resilient design should be considered.

In accordance with TAN15 guidance, the development is located within Zone 1 for from all sources of flooding apart from surface water flooding.

As existing surface water routes have been taken into account in the development layout and will remain in place with new development located outside of this area and in Zone 1 for all sources of flooding then this is deemed acceptable in accordance with TAN 15.

Surface water for the new development will be managed through implementation of SuDS.

Maintaining Exceedance Events

Exceedance events are storm or flood events that go beyond what can be practicably quantified and flows from such events will need to be directed through the proposed development, away from any high risk areas, such as building thresholds and towards low risk areas and then off site.

To ensure localised flooding does not occur from the private drainage systems regular maintenance of both the foul and surface water networks will need to be undertaken.

Sustainable Drainage Systems (SuDS)

Sustainable drainage developed in line with the ideals of sustainable development is collectively referred to as Sustainable Drainage Systems (SuDS). At a particular site, these systems are designed to manage both the environmental risks resulting from the urban runoff and to contribute, wherever possible, to environmental enhancement. Therefore, SuDS objectives are to minimise the impacts from the development on the quantity and quality of the runoff and maximise amenity and biodiversity opportunities (CIRIA C753, 2015).

Planning policy promotes sustainable management of surface water runoff from a new development or redevelopment, and the use of SuDS is recommended.

The ‘Management Train Approach’ should be central to the surface water drainage strategy of a proposed site. The main objective is the treatment and control of runoff as near to source as possible, thus protecting downstream habitats and further enhancing the amenity value of the site. This concept uses a hierarchy of drainage techniques to incrementally reduce pollution, flow rates and volumes of storm water discharge from the site, and is as follows:

- Prevention: The use of good site design and housekeeping measures to prevent runoff and pollution (e.g. rainwater re-use).
- Source Control: Control of runoff at source or as close to source as possible (e.g. soakaways, green roofs, pervious pavements).
- Site Control – Management of water in a local area (e.g. ground storage/attenuation, detention ponds/basins).
- Regional Control – Management of water from a site or various sites (e.g. wetlands, balancing ponds).

Further details on SuDS implementation is given in Section 4.0 and the separate drainage strategy documentation provided by others.

Flood Risk Conclusion

With flooding from all existing sources being classed as very low when development is located outside of the surface water flood routes and the implementation of localised flood mitigation measures within the proposed levels and drainage design it is therefore deemed that the proposed development will not have a material impact on the hydrology of the existing land and that all foreseeable sources and receptors of flood risk as a result of the development have been considered.

Clawdd Poncen, Corwen: **DRAINAGE DESIGN CRITERIA**

04

CLAWDD PONCEN, CORWEN: DRAINAGE CRITERIA

Surface Water Drainage Discharge

The proposed surface water drainage shall be designed so that there is no surcharging of pipework during storms up to a 1:2-year annual probability and no flooding on the surface, apart from within green SuDS features during storms up to a 1:30-year annual probability.

The design will also be checked to ensure no flooding of third-party land or buildings during storms up to a 1:100-year annual probability plus allowance for 30% climate change.

S1: Surface Water Runoff Destination

The SuDS Standard has five priority levels for surface water runoff. These are:

- Priority 1: Surface water runoff collected for use
- Priority 2: Surface water runoff is infiltrated to ground
- Priority 3: Surface water runoff is discharged to a surface water body
- Priority 4: Surface water runoff is discharged to a surface water sewer, highway drain or another drainage system
- Priority 5: Surface water runoff is discharged to a combined sewer

Solutions that reuse rainwater prior to discharge include rainwater harvesting for on-site non-potable use, flushing toilets for example or for landscape maintenance in the form of water butts or larger scale attenuation with a pumped outlet. Passive irrigation is also an effective way of utilising rainwater, particularly in low-intensity events, and reduces maintenance requirements for planted areas. Section G1.6 of the Statutory Standards for SuDS states that “in most cases, rainwater harvesting alone will not be adequate to deal with the site drainage and provision will be required for an overflow to a Priority Level 2 or lower priority runoff destination”.

Ground information obtained through review of the soilscape website indicates that infiltration methods are likely to be possible as the main source of discharge on this site. Infiltration testing will be required for SAB approval. Drainage design is covered in a separate drainage strategy report.

S2: Surface Water Runoff Hydraulic Control

Flood Risk will not be significantly increased as a result of the development proposals if mitigation measures are implemented and the drainage is designed with these in mind.

The runoff rates proposed should be limited to greenfield runoff rates or 2l/s/ha.

The restriction of runoff rates and increase in impermeable area will generate storm-water storage volumes that will need to be attenuated on-site prior to release.

The details of the drainage strategy should be discussed further in the drainage strategy provided by others.

S3: Water Quality

The quality of runoff from the site to support and protect the natural environment effectively needs to be taken into account in the design of the drainage systems.

The SuDS design for the development will need to provide pollution prevention and site control techniques prior to discharge from the site. Surface water treatment using the ‘Management Train’ approach to remove and isolate contamination at all SuDS facilities prior to conveyance should be utilised along with reduction of the overall potential impermeable area of the site where possible.

Where practical treatment systems should be designed to be close to the source of runoff and reviewed in accordance with Water Quality design criteria set in Chapter 4 and Water Quality Management: Design Methods in Chapter 26 of The SuDS Manual CIRIA C753 2015.

The forms of treatment proposed should be discussed further in the drainage strategy provided by others.

S4: Amenity

The provision of above ground SuDS features which can provide amenity space allows for the SuDS feature to be integrated into the landscape design and be utilised during exceedance events to prevent flooding in areas of the site used for accommodation.

S5: Biodiversity

The provision of above ground SuDS features can include planting which allows for increased biodiversity but also help channel water in times of flood and allow wet areas to be incorporated which also helps enhance biodiversity.

Foul Drainage

The proposed foul drainage discharge shall be designed in accordance with the following discharge hierarchy and agreed with Welsh Water or Natural Resources Wales to confirm adequate discharge from the site.

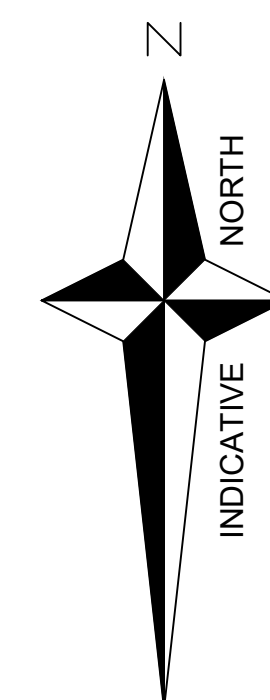
- Discharge to public foul sewer
- Discharge to combined sewer
- Discharge to sewage treatment plant to ground then watercourse
- Discharge to septic tank to ground then watercourse
- Discharge to cesspool

Drainage design is covered in a separate drainage strategy report.

Clawdd Poncen, Corwen: **APPENDICES**

05

Clawdd Poncen, Corwen: **APPENDIX 1 - TOPOGRAPHICAL SURVEY**



NOTES

SURVEY CARRIED OUT AT A SCALE OF 1:1 AND SET
TO ORDNANCE SURVEY GRID AND DATUM.
REFERENCED USING LEICA GEOSYSTEMS
SMARTNET

Topographical Survey Legend

[illegible]

Rev.	Date	Amendment	Drawn	Chkd.	Appd.



Spring Lodge
172 Chester Road
Helsby
WAB 6AR
United Kingdom

Tel: +44 1928 726006
Email: RSKTopographicalEnquiries@rsk.co.uk
Web: www.rskgeophysics.com

Client	
--------	--

Project Title	
---------------	--

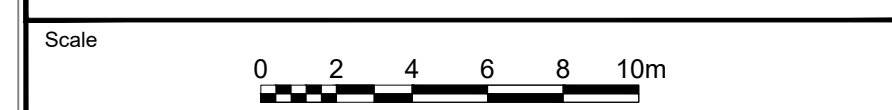
Drawing Title

Surveyed By	Date:	Drawn By	Date:	Reviewed By	Date:
MB	25/07/25	MB	28/07/25	RH	31/07/25

Project No. 2321338	Scale 1:200	Orig Size A0
------------------------	----------------	-----------------

2321338-TOPO-XX-ZZ-3D-G-0001-C01

Sheet:
2 of 3

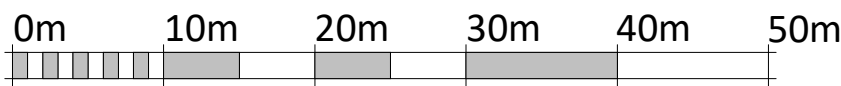
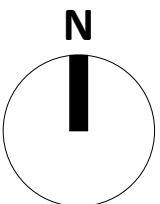


Clawdd Poncen, Corwen: **APPENDIX 2 - PROPOSED SITE PLAN**



- DWELLING TYPES**
- 60m² 6x 3P2B BUNGALOW
 - 83m² 31x 4P2B HOUSE
 - 93m² 13x 5P3B HOUSE
 - 93m² 7x 5P3B HOUSE SIDE ENTRY
 - 114m² 4x 7P4B HOUSE
 - 53m² 38x 2P1B APARTMENT

TOTAL - 99 DWELLINGS



VISUAL SCALE 1:500 @ A1

B	WG CONCEPT STAGE	01/10/25	ED
A	TURNING HEAD REMOVED	26/09/25	ED
REV	DESCRIPTION	DATE	BY

THIS DRAWING IS THE COPYRIGHT OF AINSLEY GOMMON ARCHITECTS. CHECK ALL DIMENSIONS ON SITE. DISCREPANCIES TO BE NOTIFIED TO ARCHITECT. ELEMENTS OF STRUCTURE SHOWN ARE INDICATIVE AND FOR GUIDANCE. FINAL DESIGN TO BE AS STRUCTURAL ENGINEERS DETAILS AND SPECIFICATION.

PROJECT
**CLAWDD PONCEN
CORWEN
for WILLIAMS HOMES**

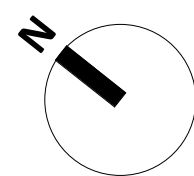
DRAWING TITLE
**PROPOSED SITE
MASTERPLAN**

SCALE	@A1 As indicated	DATE	11/09/25	DRAWN	ED	CHECKED	SV
DRAWING STATUS	PLANNING						
JOB No	DRAWING No	REVISION					
C1163	003	B					



THE OLD POLICE STATION, 15 GLYNNE WAY, HAWWARDEN, CH15 3HS
Tel: 01244 537 100 | wales@agarchitects.co.uk | www.agarchitects.co.uk
Ainsley Gommon Architects Ltd. Registered in England & Wales No. 4187948
Registered Office: 1 Price Street, Hamilton Square, Birkenhead CH41 6JN

PRINTED: 01/10/2025 16:25:59



0m 5m 10m 15m 20m 25m

VISUAL SCALE 1:250 @ A1

A	WG CONCEPT STAGE	01/10/25	ED
REV	DESCRIPTION	DATE	BY
THIS DRAWING IS THE COPYRIGHT OF AINSLEY GOMMON ARCHITECTS. CHECK ALL DIMENSIONS ON SITE. DISCREPANCIES TO BE NOTIFIED TO ARCHITECT. ELEMENTS OF STRUCTURE SHOWN ARE INDICATIVE AND FOR GUIDANCE. FINAL DESIGN TO BE AS STRUCTURAL ENGINEERS DETAILS AND SPECIFICATION.			

PROJECT

CLAWDD PONCEN
CORWEN
for WILLIAMS HOMES

DRAWING TITLE

SITE AND PARKING LEVELS
- 1/2

SCALE	@A1	DATE	DRAWN	CHECKED
	1 : 250	12/09/25	AL	ED

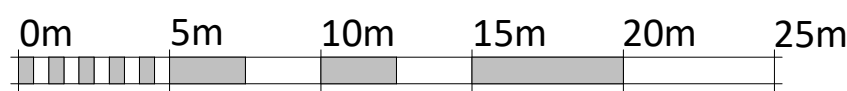
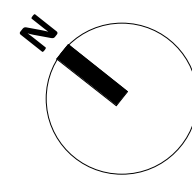
DRAWING STATUS	PLANNING	
JOB No	DRAWING No	REVISION

C1163 015 A

AG AINSLEY GOMMON ARCHITECTS

THE OLD POLICE STATION, 15 GLYNNIE WAY, HAWARDEN, CH15 3HS
Tel: 01244 537 100 | wales@agarchitects.co.uk | www.agarchitects.co.uk
Ainsley Gommon Architects Ltd. Registered in England & Wales No. 4187948
Registered Office: 1 Price Street, Hamilton Square, Birkenhead CH41 6JN

PRINTED: 01/10/2025 16:18:50



VISUAL SCALE 1:250 @ A1



A	WG CONCEPT STAGE	01/10/25	ED
REV	DESCRIPTION	DATE	BY
THIS DRAWING IS THE COPYRIGHT OF AINSLEY GOMMON ARCHITECTS. CHECK ALL DIMENSIONS ON SITE. DISCREPANCIES TO BE NOTIFIED TO ARCHITECT. ELEMENTS OF STRUCTURE SHOWN ARE INDICATIVE AND FOR GUIDANCE. FINAL DESIGN TO BE AS STRUCTURAL ENGINEERS DETAILS AND SPECIFICATION.			

PROJECT

CLAWDD PONCEN
CORWEN
for WILLIAMS HOMES

DRAWING TITLE

SITE AND PARKING LEVELS
- 2/2

SCALE	@A1	DATE	DRAWN	CHECKED
1 : 250	12/09/25	AL	ED	
DRAWING STATUS	PLANNING			
JOB No	DRAWING No	REVISION		

C1163 016 A



THE OLD POLICE STATION, 15 GLYNNE WAY, HAWARDEN, CH5 3NS
Tel: 01244 537 100 | wales@agarchitects.co.uk | www.agarchitects.co.uk
Ainsley Gommon Architects Ltd. Registered in England & Wales No. 4187948
Registered Office: 1 Price Street, Hamilton Square, Birkenhead CH1 1JR

PRINTED: 01/10/2025 16:15:13

A1