

Flood Consequence Assessment

Report

on

Proposed Development at Walnut Way

for

Merthyr Valley Homes

Date Dec 2021

Project no. 21204

Revision A

Walnut Way, Merthyr.
Flood Consequence Assessment

Document Control

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References

- 1 Flood Maps for Planning – Natural Resources Wales
- 2 Google Earth - Mapping
- 3 Development Advice Maps (DAM) – Welsh Assembly Government

Abbreviations

ABD	Areas Benefitting from Defences
AOD	Above Ordinance Datum
DAM	Development Advice Maps
DTM	Digital Terrain Model
FCA	Flood Consequence Assessment
NRW	Natural Resources Wales
SFCA	Strategic Flood Consequence Assessment
TAN 15	Technical Advice Note 15
VDM	Velocity and Depth Mapping

1.0 INTRODUCTION

- 1.1 QuadConsult Ltd has been commissioned by Merthyr Valley Homes to undertake a Flood Consequence Assessment (FCA) for a proposed development at Walnut Way in Merthyr. This FCA is to assess the flood risk associated with the development within the existing residential estate.
- 1.2 The FCA will investigate and highlight potential flood risks that may exist on and around the site in relation to the proposed development. Any proposed mitigation measures will comply with the recommendations in Technical Advice Note 15 (2004) & Development Advice Maps.

2.0 SITE LOCATION & DESCRIPTION

- 2.1 The proposed development consists of the construction of a new dwellings with associated parking.
- 2.2 The site area of the proposal parcel is 0.075ha incorporating a footprint of 0.035ha for the proposed dwellings and carparking.
- 2.3 A site location plan showing the extents of the development can be seen in Figure 1.
- 2.4 The proposed development is bounded to the North, South and West by existing residential development. An area of public open space to the East borders the adjacent Golan Uchaf Park.
- 2.5 A topographical survey has indicated existing site catchments discharging overland flow to the Southeast and West of the site.
- 2.6 DataMapWales mapping has indicated an open watercourse within the adjacent parkland East of the site.
- 2.7 NRW's flood maps for planning development Advice maps, small watercourses & surface water and coastal flood risk are shown in Appendix A & B. This map demonstrates that the flood risk in the vicinity of the proposed development is little to no risk.



© Google Earth

Figure 1 – Site Location

3.0 PROPOSED DEVELOPMENT

- 3.1 This report is to assess the flood risk associated with the development of a greenfield land parcel within the existing residential estate.
- 3.2 Given the low existing greenfield discharge rates a higher rate of 2.0l/s has been agreed with Merthyr SAB during initial discussions.
- 3.3 The development will collect surface water and attenuate before discharging into the adjacent watercourse to the East at the agreed maximum rate of 2.0l/s. This approach has been accepted following discussions with Merthyr SAB.
- 3.4 The proposed development will follow current Welsh Government and local authority SAB guidance in relation to an acceptable surface water drainage scheme.
- 3.5 Surface water will be collected, treated, and attenuated prior to discharge into the surrounding open watercourse. The local network feeds into the wider network of watercourses before discharging into the River Taff south of the site.
- 3.6 The proposed development will be designed to collect, attenuate, and discharge storm water events upto and including the 100yr event with a 40% allowance for future climate change.
- 3.7 Initial discussions with the SAB have taken place through the Pre-App process with a full SAB application required to be approved prior to construction.

4.0 FLOOD ZONE DEFINITION

- 4.1 Current NRW Development Advice Maps (Appendix A) indicate the site is within Zone A – At little to no risk of fluvial or tidal/coastal flooding.
- 4.2 As set out in Planning Policy Wales TAN15: Development & Flood Risk, flood zones are defined within the following Figure 2.

Description of Zone		Use within the precautionary framework
Considered to be at little or no risk of fluvial or tidal/coastal flooding.	A	Used to indicate that justification test is not applicable and no need to consider flood risk further.
Areas known to have been flooded in the past evidenced by sedimentary deposits.	B	Used as part of a precautionary approach to indicate where site levels should be checked against the extreme (0.1%) flood level. If site levels are greater than the flood levels used to define adjacent extreme flood outline there is no need to consider flood risk further.
Based on Environment Agency extreme flood outline, equal to or greater than 0.1% (river, tidal or coastal)	C	Used to indicate that flooding issues should be considered as an integral part of decision making by the application of the justification test including assessment of consequences.
Areas of the floodplain which are developed and served by significant infrastructure, including flood defences.	C1	Used to indicate that development can take place subject to application of justification test, including acceptability of consequences.
Areas of the floodplain without significant flood defence infrastructure.	C2	Used to indicate that only less vulnerable development should be considered subject to application of justification test, including acceptability of consequences. Emergency services and highly vulnerable development should not be considered.

Figure 2 – Extract TAN15: Development & Flood Risk Description.

5.0 FLOOD RISK SUMMARY

- 5.1 Surface Water and Small Watercourse Flooding (Flash Flooding) – The Flood Risk Map considers the proposed development to be at little or no risk of surface water flooding (Zone A). Surface water is not thought to pose a significant flood risk to the proposed development or increase risk from the proposed works as there is no increase in surface water discharge rates from the proposed development into the wider surface water piped sewer network. Surface water will be conveyed into the open watercourse located east of the site with the boundary of Golan Uchaf Park.
- 5.2 Fluvial / River Flooding – The site is shown on the NRW Flood Maps for Planning as Zone A. An area not identified as at risk of flooding.
- 5.3 Coastal / Sea Flooding – The site is shown on the NRW Flood Maps for Planning as Zone A. An area not identified as at risk of flooding.
- 5.4 NRW Flood Maps for Planning also indicate no recorded flooding events for this development area.
- 5.5 NRW Development Advice Maps indicate the site within Flood zone A – Little or no risk of fluvial or coastal/tidal flooding.

6.0 SUMMARY & CONCLUSION

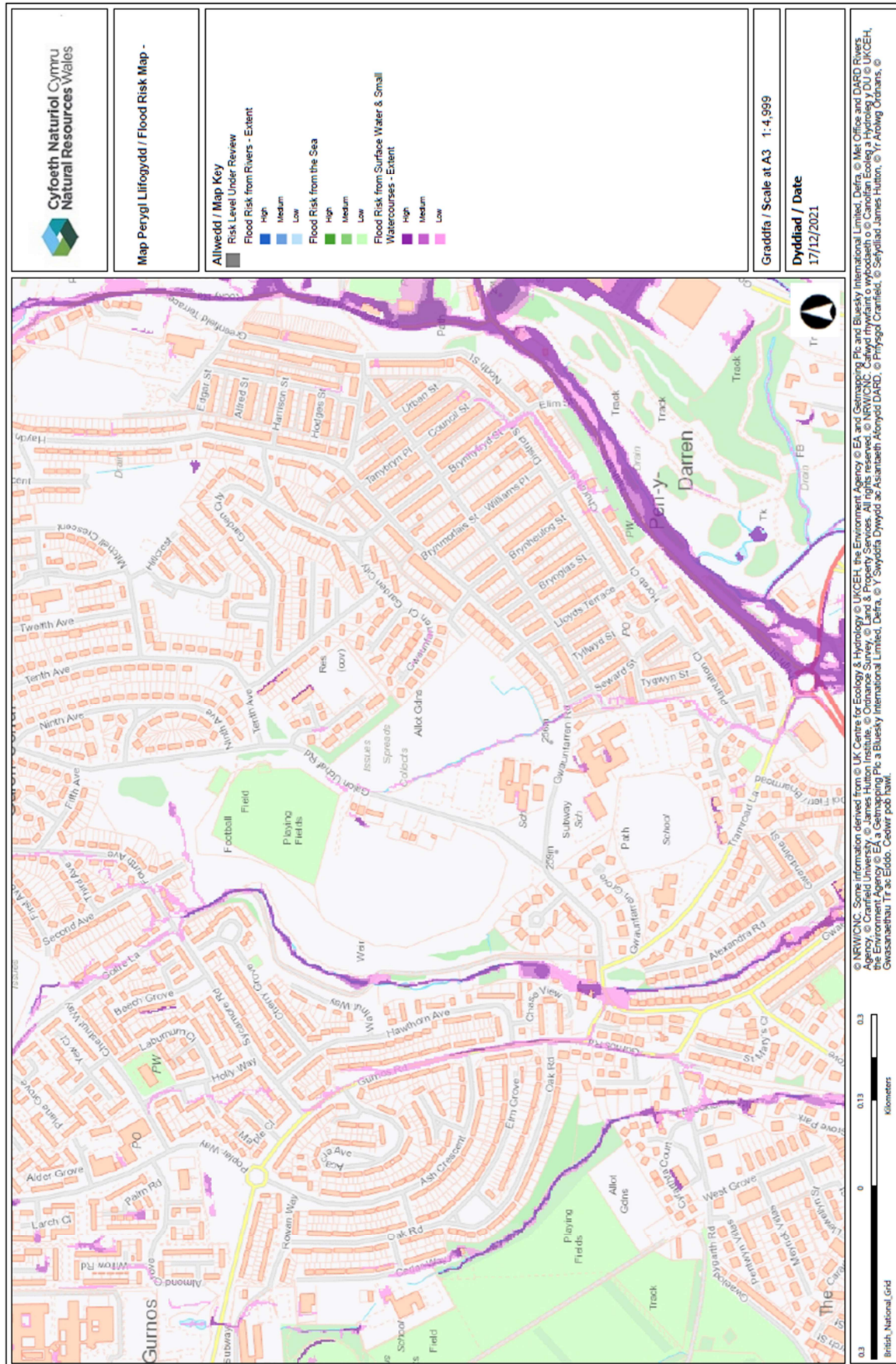
6.1 SUMMARY

- 6.1.1 The proposed development is situated within a Zone A, area defined as not at risk from flooding from Rivers, Sea or Watercourses.
- 6.1.2 There is no increase in flood risk to surrounding properties posed by the development as there is no increase in discharged surface water rates from the development.
- 6.1.3 Initial Pre-App discussion with the SAB have proved positive, the use of onsite bioretention planters & rain garden / swale features has been encouraged to provide improved water quality and attenuation features.
- 6.1.4 The proposed development's surface water network will be designed to accommodate the 100yr storm event with 40% climate change allowance.
- 6.1.5 The proposed discharge rate for all storm events will not exceed 2.0l/s, as agreed with the SAB during initial discussions.

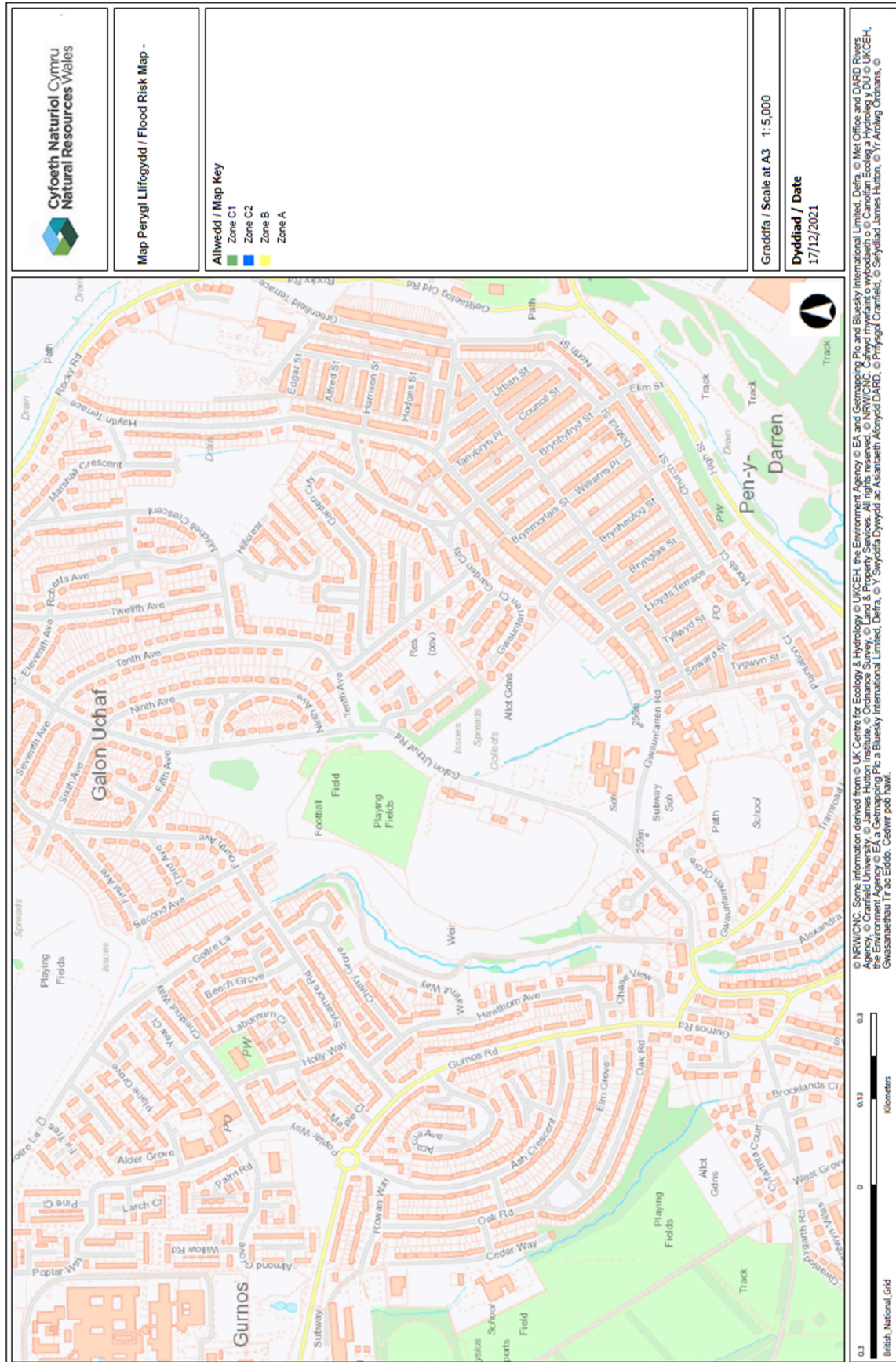
6.2 CONCLUSION

- 6.2.1 The proposed development area is at no / low risk of flooding according to mapping information and flood model data provided by NRW.
- 6.2.2 There is no increase in flood risk to surrounding properties posed by the proposed development.

**APPENDIX A
NATURAL RESOURCES WALES
FLOOD MAP FOR PLANNING**



**APPENDIX B
DEVELOPMENT ADIVCE MAP**



**APPENDIX C
PROPOSED SITE LAYOUT**

