

**St Cyres, Murch Road,
Dinas Powys.
BDW South Wales.**

**Drainage Strategy
and
Flood Risk Assessment**

August 2017



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Document Control Sheet

Project Number: 10069

Project: St Cyres, Murch Road, Dinas Powys

Client: BDW South Wales

Document Title: Drainage Strategy & Flood Risk Assessment

Author: Stephen Davis

Revision: A

Status: Approval

Control date: 09/08/2017

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1.0 INTRODUCTION

- 1.1 This report provides preliminary information on the design strategy of the surface and foul water sewers to serve the proposed development at the former St Cyres School, Murch Road, Dinas Powys, Vale of Glamorgan.
- 1.2 The details in this report demonstrate how the drainage for the development will be discharged and how flows will be managed to prevent increased flood risk.
- 1.3 The report also includes a statement on the flood risk for the development and outlines what further work, if any, are required should the site progress to a planning application.

2.0 KEY DESIGN CRITERIA

2.1 Existing Surface Water

The site is a former school now demolished, off Murch Road, Dinas Powys, CF64 4RG (OS 316358, 170817).

The site falls uniformly from a central high point at a level of circa 43.00mAOD falling west and east at a varying gradient of 1:15 to 1:50. There are some areas along the western boundary in excess of 1:15, but proposed development in these areas is limited due to ecological constraints.

There are no obvious surface water features crossing the site except for the historic piped system that served the school.

There is an existing pond to the south of the site, but there appears to be no direct connection from the site.

Natural Resources Water (NRW) Flood Maps (Appendix D) shows existing flood routes running south east along Murch Road towards Sully Road.

2.2 Surface Water Sewer Design

The surface water strategy for the development is to discharge to existing infrastructure to the south west of the site at a rate equivalent to the existing greenfield run-off rate as shown in Appendix A.

Appendix A shows a greenfield QBar rate of 54.1 l/s allowing for a 20% urban area for the former school, access road, and all other hard paved areas within the site.

The existing infrastructure is located near the junction of Murch Road (now a country lane, but still adopted by the local council) and Sully Road. This then flows east towards Cogan Hall Farm then south towards Cosmeston Lake.

Surface water sewers serving the proposed development will be designed to meet the hydraulic design and construction requirements within "Sewers for Adoption" 7th Edition. It is intended to offer the surface water sewer to Welsh Water for adoption under a Section 104 Agreement in accordance with The Water Industries Act 1991.

The adoptable system shall be designed up to the 1 in 30 year event and will be confirmed following detailed design.

The use of infiltration methods for discharging surface water has been investigated in the site investigation. Unfortunately preliminary results were nil or low, therefore this method of managing surface water has been discounted.

2.3 Climate Change

To take in to account climate change impact for the 100 year life of the residential development a 30% allowance for the predicted increase in rainfall intensity should be assumed for the design of the surface water drainage in accordance with Technical Advice Note 15 (TAN15).

2.4 Foul Water Sewer Design

It is proposed that foul drainage from the development will discharge from the site to the local adopted system as per correspondence with Welsh Water (Appendix E).

The final connection will be to the head of the foul sewer within Murch Road, located 125m to the north of the site access.

This point of connection is higher than a majority of the site, especially the western parcel, and would require a new Foul Pumping Station.

As is now appropriate with Welsh Water all other solutions must be investigated before a Foul Pumping Station is proposed due to long term maintenance issues. Therefore it is proposed to take a traditional gravity system from the site along the same route as the surface water sewer i.e. down Murch Road running south towards Sully Road.

Located near the junction of Murch Road and Sully Road is the existing Stonylands SPS.

It is proposed to undertake upgrade works to the Stonylands SPS in accordance with DCWW requirements, plus upgrade of the existing rising main. This will require a Section 185 Agreement as it currently crosses the development and possibly a Sewer Requisition to confirm preferred route.

The existing foul rising main is known to be in a poor state of repair and this option is preferable to a new on-site Foul Pumping Station.

Foul sewers serving the proposed development will be designed to meet the hydraulic design and construction requirements within "Sewers for Adoption" 7th Edition. It is intended to offer the foul sewer to Welsh Water for adoption under a Section 104 Agreement in accordance with The Water Industries Act 1991.

3.0 FLOOD RISK ASSESSMENT

3.1 Flood Zone

According to Natural Resources Wales Flood Zone Map (Appendix D), the site is identified as being located within Flood Zones A.

Flood Zone A is defined in the Welsh Assemblies Technical Advice Note 15 (TAN 15) as land assessed having the following annual probability of flooding:-

Flood Zone A "Low Risk"

Considered to be at little or no risk of fluvial or tidal/coastal flooding.

3.2 Flood Risk Vulnerability Classification

The Flood Risk Vulnerability Classification of the proposed development (i.e. Residential) is 'Highly Vulnerable' in accordance with Figure 2 within TAN 15.

3.3 Flood Risk Vulnerability and Flood Zone Compatibility

In accordance with Section 6, TAN 15, all development is appropriate for the site with it being located within Flood Zone A.

3.4 Flooding Hazards

3.4.1 Fluvial & Tidal

The nearest main watercourse is the River Cadoxton, some 500m to the west of the site. This does not pose a risk to the site as identified in section 3.1-3.3.

The sea (Bristol Channel) is located approx. 5km to the east of the site and the site is not at risk from flooding from the sea.

3.4.2 Surface Water (Overland Flow)

Intense periods of rainfall over a short duration can often lead to overland flow as rainwater is unable to infiltrate into the ground or enter drainage systems.

NRW Maps (Appendix D) shows limited evidence of overland flooding and is not considered a risk. Existing overland flow routes will also be maintained across the site, but as identified in 2.1 there is no risk from overland flooding from adjacent land.

3.4.3 Groundwater Flooding

Groundwater flooding is when the water levels in the ground rise above surface elevations, which is most likely to occur in low lying areas underlain by permeable rocks (aquifers).

NRW maps shows no evidence of groundwater flooding within a close proximity of the site, therefore this risk from flooding can be ruled out.

3.4.4 Sewer Flooding

There have been no reported flooding incidents from sewers adjacent to the site and not considered a risk.

4.0 SUMMARY

- 4.1 This report provides information on the surface & foul water drainage as required by the undertaking given by BDW South Wales.
- 4.2 Surface water shall drain to the south east of the site to existing infrastructure at an attenuated discharge rate equivalent to an existing greenfield rate of 54.1 l/s.
- Attenuation shall be via cellular storage for the adoptable system and exceedance flows up to the 100 year event, plus 30% climate change.
- 4.3 Foul drainage shall discharge into the existing adopted system located to the north of the site following discharge to an existing pumping station to the south. This will include improvement works to the current system.
- 4.4 Surface & Foul water sewers will be offered for adoption to Welsh Water via a Section 104 Agreement.
- 4.5 To take in to account climate change impact for the 100 year life of the residential development a 30% allowance for the predicted increase in rainfall intensity has been assumed for the design of the surface water drainage in accordance with Technical Advice Note (TAN 15).
- 4.6 The site is located within Flood Zone A and considered to be at little or no risk of fluvial or tidal/coastal flooding.

Appendix A

Existing Greenfield Run-off

Unit 9 Westway Garage
Marksbury
Bath BA2 9HN



Date 26-07-2017 10:12
File St Cyres 100yr+3...

Designed by Steve
Checked by

Micro Drainage

Source Control 2013.1.1

ICP SUDS Mean Annual Flood

Input

Return Period (years)	100	Soil	0.450
Area (ha)	6.300	Urban	0.200
SAAR (mm)	975	Region Number	Region 9

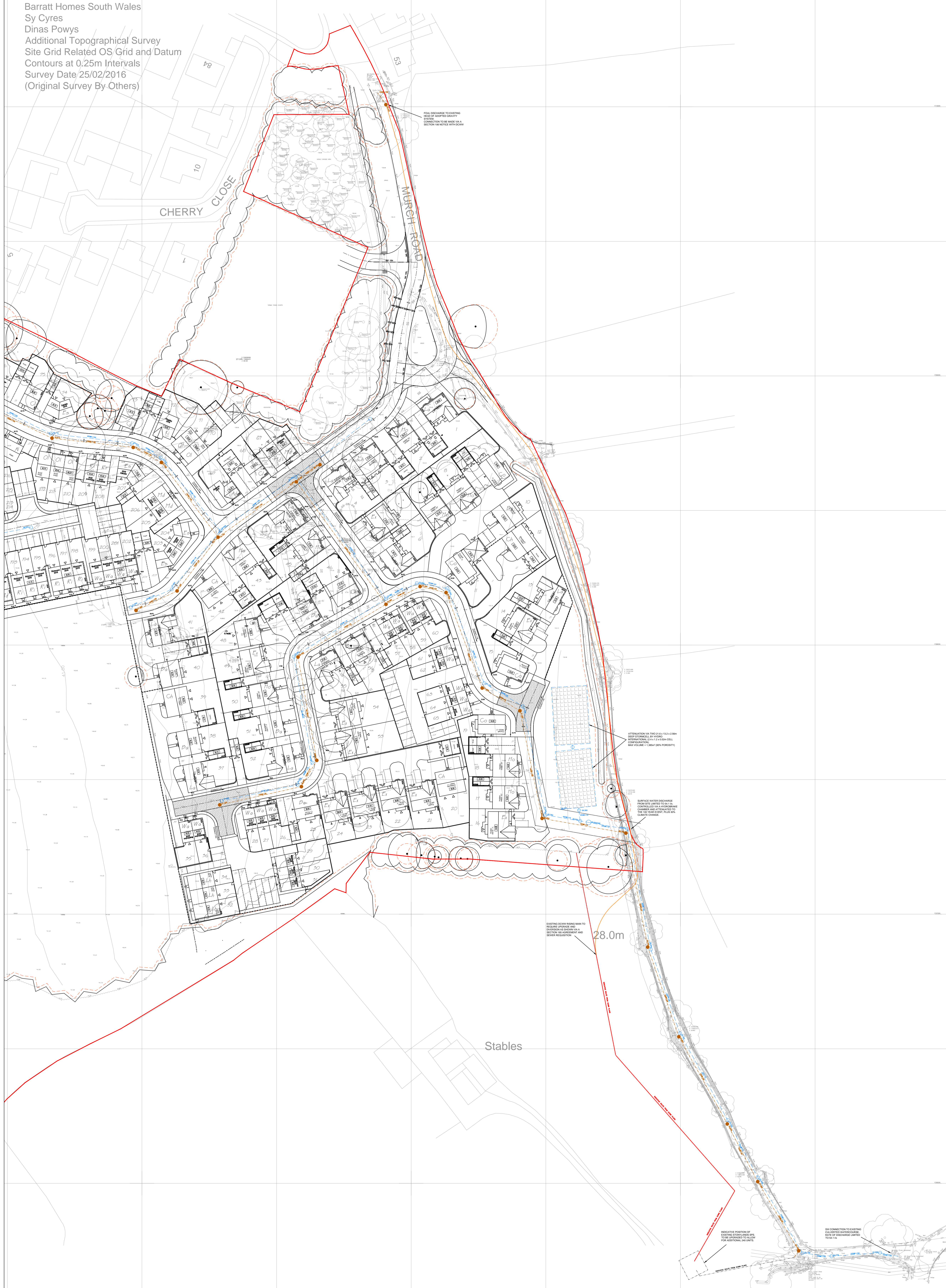
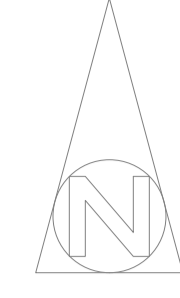
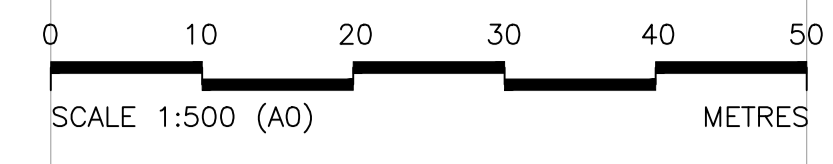
Results 1/s

QBAR Rural	40.8
QBAR Urban	54.1
Q100 years	106.4
Q1 year	47.6
Q30 years	90.5
Q100 years	106.4

Appendix B

Engineering Layout

Barratt Homes South Wales
 Sy Cyres
 Dinas Powys
 Additional Topographical Survey
 Site Grid Related OS Grid and Datum
 Contours at 0.25m Intervals
 Survey Date 25/02/2016
 (Original Survey By Others)



- GENERAL NOTES**
- The contractor is to check and verify all buildings and their dimensions and levels, including the current building regulations, BS standards, building regulations etc.
 - Position of service conduits, cables, ducts, cables, pipes, etc. to be shown in all drawings.
 - The drawing is to be read in conjunction with and subject to all other drawings and specifications.
 - Any amendments or variations to the above is to be reported to BDM South Wales.
 - This drawing is schematic for clarity only, positions of pipes runs and manholes may vary on site due to site conditions.
- ADOPTION NOTES**
- All works for adoption under a Section 106 agreement shall be carried out to the National Water Council's "Sewers for Adoption" 7th edition and Dwr Cymru Wales Water's requirements.
- DRAINAGE NOTES**
- All private drainage shall be in accordance with BS5501 and relevant sections of Approved Document Part D of the Building Regulations.
 - The contractor is to check the level of existing drains being used as outlets or existing proposed drainage runs PRIOR to laying any pipes. Any discrepancies are to be reported to the Engineer.
 - Private house drainage will be factory joined plastic or clay pipework. Diameter 100mm unless shown otherwise.
 - All connections for House Drainage shall be 100mm unless noted otherwise and must extend to 200mm below the base of finished floor level. All connections shall be cast in situ in concrete and shall be 100mm unless noted otherwise. All connections shall be cast in situ in concrete and shall be 100mm unless noted otherwise.
 - For private drains where cover is pipes to be less than 300mm in vehicle areas or 600mm in other areas protected in the form of a 100mm thick concrete pad shall be provided over the pipe general surface.
 - Where drains do not extend 600mm (over plastic or clay) across kerbs minimum depth shall be 200mm. Where drains do not extend 600mm (over plastic or clay) across kerbs minimum depth shall be 200mm. Where drains do not extend 600mm (over plastic or clay) across kerbs minimum depth shall be 200mm.
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- LEGEND**
- FOUL SEWER & MANHOLE (S104)
 - SURFACE WATER SEWER & MANHOLE (S105)
 - ADOPTABLE FOUL WATER RISING MAIN (S106)
 - HOUSE SLAB LEVEL (S107)
 - PROPOSED SPOT LEVEL (S108)
 - UNDEVELOPED ADDITIONAL BELOW DPC (S109)
 - TANKING (S110)
 - RETAINING WALL (S111)
 - STEPS (NO. SHOWING) (S112)

FOUL DRAINAGE TO EXISTING MANHOLE ADJACENT TO CHERRY CLOSE CONNECTION TO BE MADE VIA A SECTION UNDEVELOPED BELOW DPC

ATTENTION ON THE 12.1 x 10.2 x 2.0m DEEP TANGENTIAL PIT FOR UNDEVELOPED BELOW DPC CONNECTION TO BE MADE VIA A SECTION UNDEVELOPED BELOW DPC

SURFACE WATER OCCURRING FROM ROADS SHALL BE COLLECTED BY GULLIES AND DISCHARGED TO THE SURFACE WATER SEWER AT THE POINT OF ENTRY TO THE SEWER

EXISTING DOWN BOUNDARY TO BE MAINTAINED AND DETENTION OF STONES VIA A SECTION UNDEVELOPED BELOW DPC

28.0m

PROPOSED POSITION OF EXISTING MANHOLE TO BE MAINTAINED AND DETENTION OF STONES VIA A SECTION UNDEVELOPED BELOW DPC

PROPOSED POSITION OF EXISTING MANHOLE TO BE MAINTAINED AND DETENTION OF STONES VIA A SECTION UNDEVELOPED BELOW DPC

A 06/06/2017 Redline amended

Revisions

Project: **St Cyres School Murch, Dinas Powys**

Client: **BARATT HOMES SOUTH WALES**

Drawing: **Engineering Layout Planning (Sheet 1 of 2)**

Scale: 1:500 @ A0 Date: July 2017 Drawn by: **SLD**

Drawing No: **10069-001-06** Rev: **A**

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Prop: **PLANNING**



GENERAL NOTES

- The contractor to check and verify all buildings and the dimensions and levels, before commencing work on site. The contractor to verify all setbacks with the relevant authorities.
- Provision of existing services (water, gas, electricity, sewerage) shall be to the satisfaction of the relevant authorities.
- The drainage to be installed shall be to the satisfaction of the relevant authorities.
- Any work or construction between any of the above is to be reported to BODS South Wales.
- The drainage to be installed shall be to the satisfaction of the relevant authorities.

ADAPTATION NOTES

All works in accordance with Section 104 agreement shall be carried out to the National Water Council guide "Sewers for Adoption" 7th edition and the Civil Engineering Requirements.

DRAINAGE NOTES

- All drainage shall be in accordance with BS5931 and relevant sections of Approved Document H4 of the Building Regulations.
- The contractor to check the level of existing drains being used as outfall or existing proposed drainage runs PRIOR to laying any pipes. Any discrepancies are to be reported to the Engineer.
- Private house drainage will be heavy jointed plastic or clay pipework. Diameter shall be 150mm for all drains. All drains shall be installed in accordance with BS5931 and relevant sections of Approved Document H4 of the Building Regulations. All connections shall be made to the main sewer line with a 150mm dia. vertical connection to the main sewer line.
- For private drains where cover to pipes is less than 800mm in vehicular areas or otherwise the contractor shall provide a 150mm dia. brick concrete pad and to provide over the pipe granite surfacing.
- Where drains are to be installed through existing walls, floors or retaining walls they are to be installed in accordance with BS5931 and relevant sections of Approved Document H4 of the Building Regulations. Where drains pass within 1m of buildings the wall foundation shall be taken down below the level of the pipe.
- Where drains do not exceed 600mm deep, plastic or clay access fittings (minimum diameter 225mm) shall be used. Elsewhere proprietary plastic or concrete concrete inspection chambers shall be used. Unless shown otherwise PVC inspection chambers are to be 1200mm square for level and 600mm diameter and 1000mm deep or 800mm dia. etc.
- All gullies and rainwater downpipes connected directly to drains are to be installed in accordance with BS5931 and relevant sections of Approved Document H4 of the Building Regulations. Levels at drainage access points are to be taken down below the level of the pipe.
- House levels above sea level and adjacent ground levels are to be taken down below the level of the pipe.
- Change in levels shall be indicated by a 200mm dia. brick concrete pad and to provide over the pipe granite surfacing.
- All drainage shall be laid in accordance with BS5931 and relevant sections of Approved Document H4 of the Building Regulations. Levels at drainage access points are to be taken down below the level of the pipe.
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LEGEND

- FULL SEWER & MANHOLE (S100)
- SURFACE WATER SEWER & MANHOLE (S100)
- ADAPTABLE FULL WATER RISING MAIN (S100)
- HOUSE SLAB LEVEL (S100)
- GARAGE SLAB LEVEL (S100)
- PROPOSED SPOT LEVEL
- UNDERBUILT (ADDITIONAL BELOW OPC AS INDICATED)
- TANKING
- RETAINING WALL
- STEPS (NO SHOWING)

Revisions

Project: **St Cyres School Murch, Dinas Powys**

Client: **BARRATT HOMES**

Drawing: **Engineering Layout Planning (Sheet 2 of 2)**

Scale: 1:500 @ A0 Date: July 2017 Drawn by: SJD

Drawing No: **10069-001-07** Rev:

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Dwg Status: **PLANNING**



Appendix C

Preliminary Storage Estimates

Peter Amies Consulting Ltd		Page 1
Unit 9 Westway Garage Marksbury Bath BA2 9HN	St Cyres - Planning 100yr Event + 30%CC	
Date 26-07-2017 14:58 File St Cyres 100yr+3...	Designed by SJD Checked by	
Micro Drainage	Source Control 2013.1.1	

Summary of Results for 100 year Return Period (+30%)

Half Drain Time : 256 minutes.


Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	30.521	1.181	0.0	38.6	38.6	639.8	O K
30 min Summer	30.900	1.560	0.0	43.5	43.5	845.1	O K
60 min Summer	31.260	1.920	0.0	47.9	47.9	1040.0	O K
120 min Summer	31.529	2.189	0.0	51.0	51.0	1186.0	O K
180 min Summer	31.594	2.254	0.0	51.8	51.8	1221.3	O K
240 min Summer	31.594	2.254	0.0	51.8	51.8	1221.3	O K
360 min Summer	31.559	2.219	0.0	51.4	51.4	1201.9	O K
480 min Summer	31.506	2.166	0.0	50.8	50.8	1173.2	O K
600 min Summer	31.443	2.103	0.0	50.1	50.1	1139.3	O K
720 min Summer	31.378	2.038	0.0	49.3	49.3	1103.9	O K
960 min Summer	31.248	1.908	0.0	47.8	47.8	1033.8	O K
1440 min Summer	31.008	1.668	0.0	44.9	44.9	903.5	O K
2160 min Summer	30.698	1.358	0.0	40.9	40.9	735.7	O K
2880 min Summer	30.437	1.097	0.0	37.6	37.6	594.4	O K
4320 min Summer	30.005	0.665	0.0	34.3	34.3	360.3	O K
5760 min Summer	29.709	0.369	0.0	34.2	34.2	200.1	O K
7200 min Summer	29.589	0.249	0.0	31.6	31.6	134.7	O K
8640 min Summer	29.531	0.191	0.0	28.6	28.6	103.2	O K
10080 min Summer	29.496	0.156	0.0	25.8	25.8	84.3	O K
15 min Winter	30.670	1.330	0.0	40.5	40.5	720.5	O K
30 min Winter	31.100	1.760	0.0	46.0	46.0	953.3	O K
60 min Winter	31.515	2.175	0.0	50.9	50.9	1178.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	115.731	0.0	683.3	25
30 min Summer	77.804	0.0	918.8	39
60 min Summer	49.937	0.0	1179.9	66
120 min Summer	30.956	0.0	1462.0	124
180 min Summer	23.058	0.0	1633.9	178
240 min Summer	18.577	0.0	1755.8	206
360 min Summer	13.656	0.0	1935.6	268
480 min Summer	10.974	0.0	2074.4	336
600 min Summer	9.254	0.0	2186.1	406
720 min Summer	8.046	0.0	2281.5	476
960 min Summer	6.447	0.0	2437.1	614
1440 min Summer	4.709	0.0	2669.7	884
2160 min Summer	3.432	0.0	2918.5	1280
2880 min Summer	2.739	0.0	3105.6	1656
4320 min Summer	1.989	0.0	3382.8	2384
5760 min Summer	1.583	0.0	3589.4	3016
7200 min Summer	1.325	0.0	3756.0	3688
8640 min Summer	1.147	0.0	3901.3	4408
10080 min Summer	1.015	0.0	4029.3	5144
15 min Winter	115.731	0.0	765.4	25
30 min Winter	77.804	0.0	1029.3	39
60 min Winter	49.937	0.0	1321.5	66

Summary of Results for 100 year Return Period (+30%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (1/s)	Max Control (1/s)	Max Σ Outflow (1/s)	Max Volume (m ³)	Status
120 min Winter	31.842	2.502	0.0	54.4	54.4	1355.6	O K
180 min Winter	31.939	2.599	0.0	55.4	55.4	1408.0	O K
240 min Winter	31.940	2.600	0.0	55.4	55.4	1408.3	O K
360 min Winter	31.890	2.550	0.0	54.9	54.9	1381.3	O K
480 min Winter	31.816	2.476	0.0	54.2	54.2	1341.5	O K
600 min Winter	31.725	2.385	0.0	53.2	53.2	1292.0	O K
720 min Winter	31.627	2.287	0.0	52.1	52.1	1239.1	O K
960 min Winter	31.432	2.092	0.0	49.9	49.9	1133.4	O K
1440 min Winter	31.078	1.738	0.0	45.7	45.7	941.2	O K
2160 min Winter	30.639	1.299	0.0	40.1	40.1	703.7	O K
2880 min Winter	30.272	0.932	0.0	35.7	35.7	505.0	O K
4320 min Winter	29.686	0.346	0.0	34.0	34.0	187.3	O K
5760 min Winter	29.535	0.195	0.0	28.9	28.9	105.6	O K
7200 min Winter	29.483	0.143	0.0	24.5	24.5	77.2	O K
8640 min Winter	29.453	0.113	0.0	21.3	21.3	61.1	O K
10080 min Winter	29.432	0.092	0.0	18.8	18.8	50.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
120 min Winter	30.956	0.0	1637.7	122
180 min Winter	23.058	0.0	1830.5	176
240 min Winter	18.577	0.0	1965.9	228
360 min Winter	13.656	0.0	2168.0	284
480 min Winter	10.974	0.0	2322.5	362
600 min Winter	9.254	0.0	2448.4	438
720 min Winter	8.046	0.0	2555.3	514
960 min Winter	6.447	0.0	2729.7	662
1440 min Winter	4.709	0.0	2990.4	944
2160 min Winter	3.432	0.0	3268.6	1352
2880 min Winter	2.739	0.0	3478.3	1756
4320 min Winter	1.989	0.0	3788.8	2344
5760 min Winter	1.583	0.0	4020.1	3000
7200 min Winter	1.325	0.0	4206.7	3680
8640 min Winter	1.147	0.0	4369.3	4408
10080 min Winter	1.015	0.0	4512.7	5144

Peter Amies Consulting Ltd		Page 3
Unit 9 Westway Garage Marksbury Bath BA2 9HN	St Cyres - Planning 100yr Event + 30%CC	
Date 26-07-2017 14:58 File St Cyres 100yr+3...	Designed by SJD Checked by	
Micro Drainage	Source Control 2013.1.1	


Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+30

Time Area Diagram

Total Area (ha) 3.150

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
From:	To:	From:	To:	From:	To:
0	4	4	8	8	12
	1.050		1.050		1.050

Peter Amies Consulting Ltd		Page 4
Unit 9 Westway Garage Marksbury Bath BA2 9HN	St Cyres - Planning 100yr Event + 30%CC	
Date 26-07-2017 14:58 File St Cyres 100yr+3...	Designed by SJD Checked by	
Micro Drainage	Source Control 2013.1.1	

Model Details

Storage is Online Cover Level (m) 32.500

Cellular Storage Structure

Invert Level (m) 29.340 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	570.2	570.2	2.700	0.0	863.5
2.600	570.2	863.5			

Hydro-Brake® Outflow Control

Design Head (m) 2.560 Hydro-Brake® Type Md5 SW Only Invert Level (m) 29.250
 Design Flow (l/s) 54.1 Diameter (mm) 237

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	8.5	1.200	37.7	3.000	58.6	7.000	89.4
0.200	20.9	1.400	40.3	3.500	63.2	7.500	92.6
0.300	29.8	1.600	42.9	4.000	67.6	8.000	95.6
0.400	33.4	1.800	45.4	4.500	71.7	8.500	98.6
0.500	34.3	2.000	47.8	5.000	75.6	9.000	101.4
0.600	34.1	2.200	50.1	5.500	79.3	9.500	104.2
0.800	34.0	2.400	52.4	6.000	82.8		
1.000	35.4	2.600	54.5	6.500	86.2		






Appendix D

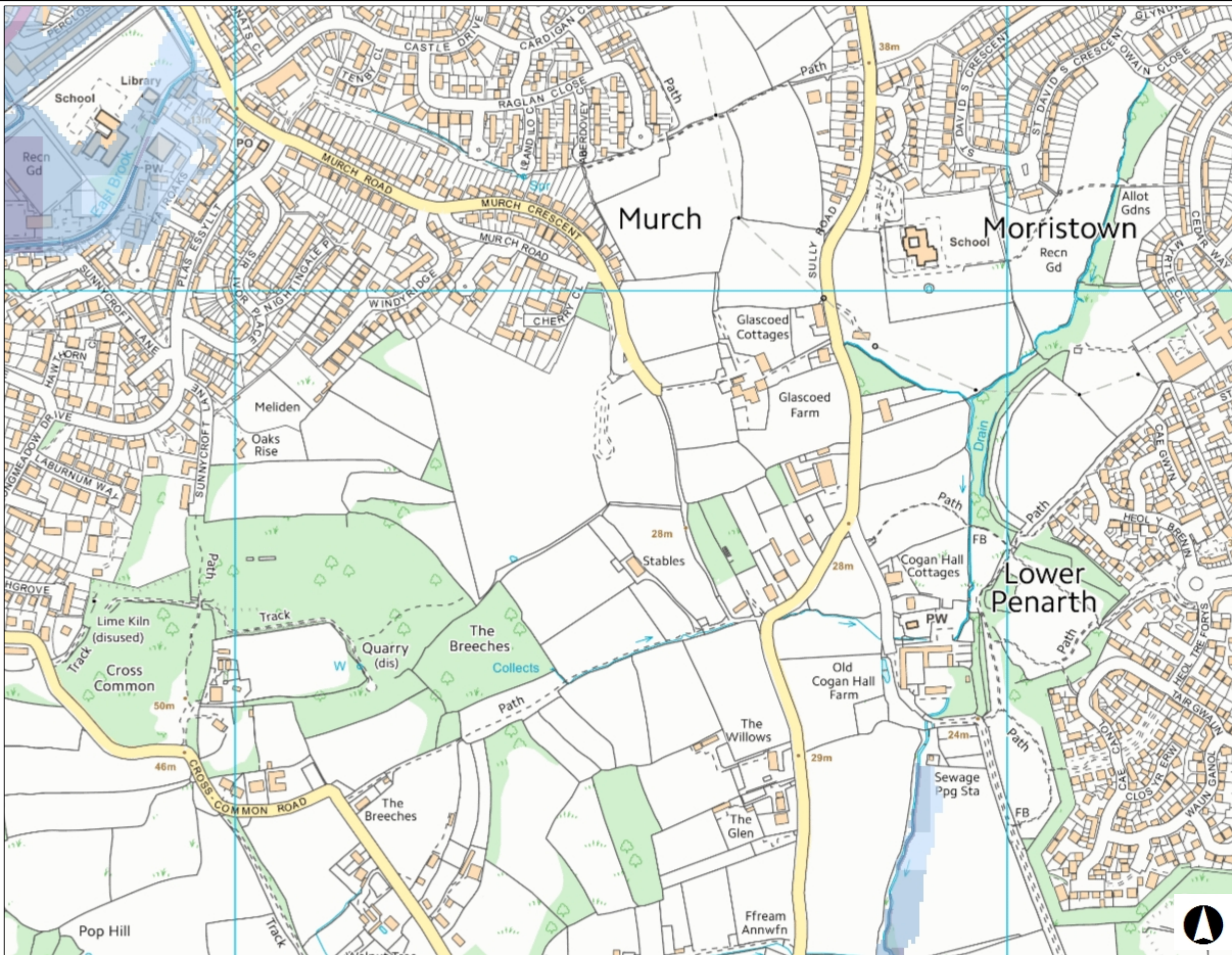
Natural Resources Wales Flood Maps

St Cyres

Map Perygl Llifogydd / Flood Risk Map

Allwedd / Map Key

-  Flood Defences
- Risk of Flooding from Rivers & Sea
 -  High
 -  Medium
 -  Low
 -  Very Low



Graddfa / Scale 1:5,001

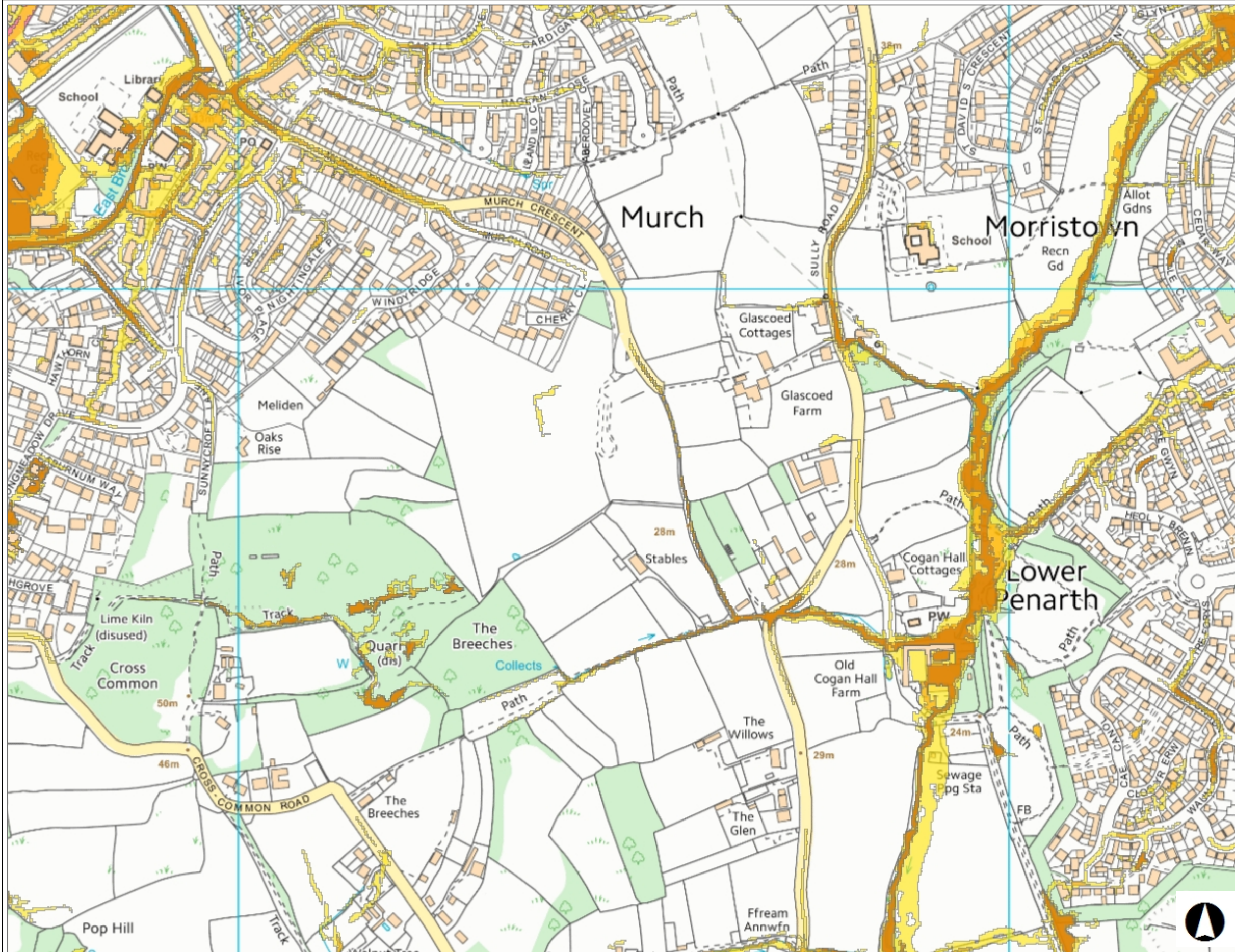
Dyddiad / Date
26/07/2017



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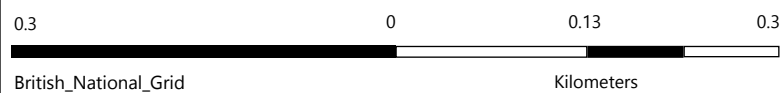
Allwedd / Map Key

- High Surface Water Flood Risk - Extent
- Medium Surface Water Flood Risk - Extent
- Low Surface Water Flood Risk - Extent



Graddfa / Scale 1:5,001

Dyddiad / Date
26/07/2017



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Appendix E

Correspondence from Welsh Water



**Dŵr Cymru
Welsh Water**

Developer Services
PO Box 3146
Cardiff
CF30 0EH

Tel: +44 (0)800 917 2652
Fax: +44 (0)2920 740472
E.mail: developer.services@dwrcymru.com

Gwasanaethau Datblygu
Blwch Post 3146
Caerdydd
CF30 0EH

Ffôn: +44 (0)800 917 2652
Ffacs: +44 (0)2920 740472
E.bost: developer.services@dwrcymru.com

Mr Paul Swain
Vale of Glamorgan Council
The Alps Depot
Wenvoe
Vale of Glamorgan
CF5 6AA

Date: 18/02/2014
Our Ref: PPA0000400

Dear Mr Swain

Grid Ref: ST1630770799 316307 170799
Site: Murch Crescent Dinas Powys
Development: St Cyres Lower School

We refer to the pre-planning enquiry relating to the above site, and we can provide the following comments in respect to the proposed development.

SEWERAGE

We would confirm the following in respect of the capacity to accept sewage flows from the proposed development:

The public sewerage system in the vicinity of the proposed site is generally of a separate type.

The foul only flows from the proposed development can be accommodated within the public sewerage system as shown on the attached sewer extract.

With reference to the surface water flows from the proposed development, developers are required to fully exhaust all the technical options outlined under Sections 3.2 and 3.4 of Part H of the publication 'Building Regulations 2000. This document advocates the use of the hierarchical approach, which encourages infiltration and, where infiltration is not possible, through disposal to a watercourse in liaison with the Land Drainage Authority and/or the Environment Agency. The developer is advised that the discharge of surface water to the public sewer is only to be made as a last resort, and as such sustainable drainage systems(SUDS) must be investigated. SUDS is an approach to managing surface water run-off which seeks to imitate natural drainage systems and retain water on or near the site as opposed to traditional drainage approaches which involve piping water off site as quickly as possible.



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We welcome correspondence in
Welsh and English

Dŵr Cymru Cyf, a limited company registered in
Wales no 2366777. Registered office: Pentwyn Road,
Nelson, Treharris, Mid Glamorgan CF46 6LY

Rydym yn croesawu goheblaeth yn y
Gymraeg neu yn Saesneg

Dŵr Cymru Cyf, cwmni cyfyngedig wedi'i gofrestru yng
Nghymru rhif 2366777. Swyddfa gofrestredig: Heol Pentwyn
Nelson, Treharris, Morgannwg Ganol CF46 6LY

SUDS involve a range of techniques including green roofs, rainwater harvesting, permeable pavements which offer significant advantages over conventional piped drainage systems in reducing flood risk by attenuating the rate and quantity of surface water run-off from a site, promoting groundwater recharge, and improving water quality and amenity. The variety of SUDS techniques available means that virtually any development should be able to include a scheme based around these principles. Good justification would be required not to incorporate a SUDS scheme on the site.

To this end the developer is advised that it will be necessary to prepare a scheme for the comprehensive and integrated drainage of the site showing how foul water, surface water and land drainage will be dealt with. We would therefore encourage you to contact Developer Services should you choose to progress the development, with a view to discussing the detail of any prospective drainage scheme.

Please also note that no highway or land drainage run-off will be permitted to discharge directly or indirectly into the public sewerage system.

The development site is crossed by a rising main. Please note that no development (including the raising or lowering of ground levels) will be permitted within the safety zone of these public sewers, which is measured 3 metres either side of the centreline of each pipe.

If a connection is required to the public sewerage system, the developer is advised to contact us on Tel: 0800 917 2652.

Please note that in order to make a connection it may be necessary to cross third party land, for which you must first gain permission from all the relevant landowners. Should you encounter difficulties in gaining the permission to do so, it may be possible to requisition a new sewer under Sections 98 to 101 of the Water Industry Act 1991 from the boundary of the proposed development to the public sewerage system. Should you require further information please write to us at the address given above.

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 us in dealing with the proposal we request the applicant contacts our Operations Contact Centre on 0800 085 3968 to establish the location and status of the sewer. Under the Water Industry Act 1991 Dwr Cymru Welsh Water has rights of access to its apparatus at all times.



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Welsh and English

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Rydym yn croesawu gohebiaeth yn y
Gymraeg neu yn Saesneg

Dŵr Cymru Cyf, cwmni cyfyngedig wedi'i gofrestru yng
Nghymru rhif 2366777. Swyddfa gofrestredig: Heol Pentwyn
Nelson, Treharris, Morgannwg Ganol CF46 6LY.

The Welsh Government have introduced new legislation that will make it mandatory for all developers who wish to communicate with the public sewerage system to obtain an adoption agreement for their sewerage with Dwr Cymru Welsh Water (DCWW). Welsh Ministers Standards for the construction of sewerage apparatus and an agreement under Section 104 of the Water Industry Act (WIA) 1991 will need to be completed in advance of any authorisation to communicate with the public sewerage system under Section 106 WIA 1991 being granted by DCWW.

We have published information on the Welsh Ministers Standards which will be available for viewing on the Developer Services Section of our website - www.dwrcymru.com

Further information on the Welsh Ministers Standards can be found on the Welsh Government website - www.wales.gov.uk

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 6 inch diameter watermain in Murch Road location. The cost of providing new on-site watermains can be calculated upon the receipt of detailed site layout plans which should be sent to the above address.

The proposed development is crossed by a 6 inch trunk/distribution watermain, the approximate position being shown on the attached plan. Dwr Cymru Welsh Water as Statutory Undertaker has statutory powers to access our apparatus at all times. I enclose our Conditions for Development near Watermain(s). It may be possible for this watermain to be diverted under Section 185 of the Water Industry Act 1991, the cost of which will be re-charged to the developer. The developer must consult Dwr Cymru Welsh Water before any development commences on site.

(3 Mtr's easement required on water main)

We trust the above information is helpful. 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.

If you have any queries please contact Developer Services on 0800 917 2652 or via email at developer.services@dwrcymru.com

Please quote our reference number in all communications and correspondence.



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We welcome correspondence in
Welsh and English

Dŵr Cymru Cyf, a limited company registered in
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Nelson, Treheris, Mid Glamorgan CF46 6LY

Rydym yn croesawu gohebiaeth yn y
Gymraeg neu yn Saesneg

Dŵr Cymru Cyf, cwmni cyfyngedig wedi'i gofrestru yng
Nghymru rhif 2366777. Swyddfa gofrestredig: Heol Pentwyn
Nelson, Treheris, Morgannwg Ganol CF46 6LY.

Yours faithfully,



Owain George
Lead Development Control Officer
Developer Services

Enc: Sewer Plan
Water Plan
Receipt

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.

glas
Glas Cymru Cyfyngedig

Welsh Water is owned by Glas Cymru – a 'not for profit' company.
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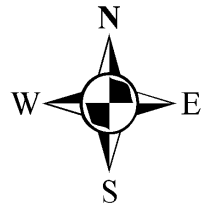
We welcome correspondence in
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Rydym yn croesawu goheblaeth yn y
Gymraeg neu yn Saesneg

Dŵr Cymru Cyf, cwmni cyfyngedig wed'i gofrestru yng
Nghymru rhif 2366777. Swyddfa gofrestredig: Heol Pentwyn
Nelson, Treharris, Morgannwg Ganol CF46 6LY.

PPA0000400



LEGEND(Representative of most common features)

Waste network:	
	Foul chamber
	Surface water chamber
	Combined chamber
	Combined sewer overflow
	Special purpose chamber
	Treatment works
	Pumping station
	Outfall
	Lamphole
	Storm Overflow
	Rising main
	Gravity sewer
	Private sewer
	Private sewer subject to Sect. 104 adoption agreement
	Private Sewer Transfer
	Lateral Drain
	Inspection Chamber

NB: Sewer symbol colour indicates the type.
 RED - Combined
 GREEN - Surface Water
 BROWN - Foul
 Purple - Former S24 sewers (for indicative purposes only)

Notes:

Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets there is a possibility that in some cases pipe material (other than Asbestos Cement or Pitch Fibre) may be found to be asbestos cement (AC) or Pitch Fibre (PF). It is therefore advisable that the possible presence of AC or PF pipes be anticipated and considered as part of any risk assessment prior to excavation.

Dŵr Cymru Cyf gives this information as to the position of its underground apparatus by way of general guidance only on the strict understanding that it is based on the best information available and no warranty as to its correctness is relied upon in the event of excavations or other works made in the vicinity of the Company's apparatus and any onus of locating the apparatus before carrying out any excavations rests entirely on you. It must be understood that the furnishing of the information is entirely without prejudice to the provision of the New Roads and Streetworks Act 1991 and of the Company's right to be compensated for any damage to its apparatus.

Service pipes are not generally shown but their presence should be anticipated.

EXACT LOCATIONS OF ALL APPARATUS TO BE DETERMINED ON SITE.

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Map Ref: 316307,170799
 Map scale: 1:2,500
 Printed by: bg
 Printed on: 18th February 2014

