



FLOOD CONSEQUENCE ASSESSMENT

DRILL MILL

EWENNY ROAD, MAESTEG



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Issue	Prepared by	Checked by	NOTES	Date
-	SPS	LF	For client review	03 JULY 2025
A	SPS	LF	FIRST ISSUE	04 JULY 2025
B	SPS	LF	Updated based on comment	22 JULY 2025

1. Introduction

Think Urban has been instructed to prepare a Flood Consequence Assessment (FCA) and drainage strategy in respect of a proposed development at Old Drill Hall, Ewenny Road, Maesteg.

This report has been prepared on behalf of Castell Group and is intended to support a planning application for affordable housing.

The purpose of this report is to assess the potential flood risk to the site, to describe the existing site and associated drainage infrastructure and to identify a sustainable solution for the proposed surface and foul water drainage.

A site location plan is included in **Appendix A**. The total site occupies approximately 0.175 ha. The National Grid Reference is SS 85922 90904, and the nearest postcode is CF34 9ES.

2. Topography and Site Description

The following commentary has been based on topographical information which is to ordnance datum.

The site generally slopes from southwest to north, with ground levels ranging from approximately 118.44m AOD in the southwestern corner to 117.30m AOD in the northeastern corner.

Located in the southeastern area of Maesteg, the site is bounded to the north by Ewenny Road, with existing residential development situated to the south and west. To the east, the site adjoins Ewenny Road Railway Station.

The nearest watercourse, the River Llynfi, lies approximately 210m west of the site boundary. According to the topographical survey, existing surface water sewers are present to the northwest of the site. It is assumed that these sewers are operational and ultimately connect to the main sewer in Ewenny Road. Further details are provided in the site location plan included in **Appendix A**.

The site is currently classified as brownfield, comprising existing industrial buildings with the majority of the ground surface covered by concrete hardstanding.

3. Development Description

The proposed development includes the erection of two separate three-storey buildings containing 18 affordable housing flats in total, with 19 parking spaces and soft landscaping. Proposed access is to be off Eweny Road located north of the site. The proposed site plan is included in **Appendix B**.

4. Existing Drainage and Site Investigations

There is existing Dwr Cymru Welsh Water (DCWW) apparatus located within the site and in the surrounding vicinity. There is a sewer connection from the site to the main sewer located within Eweny Road adjacent to the northern.

5. Appraisal of Flood Risk

Flood Source	Presence	Notes
Fluvial (River)	✓	The Llynfi River 210m west of the site
Tidal (Sea)	x	N/A
Canals	x	N/A
Groundwater	x	No evidence on site
Sewers	x	No evidence of flooding
Reservoirs	x	N/A
Pluvial (Rain)	x	Negligible considering topography site location and this is contained one the Eweny Road
Development Drainage	✓	Considered within this report

Fluvial

According to the indicative online flood map the development is predominately located within Flood Zone 1, refer to **Figure 1** below. Flood Zone 1 comprises land outside the floodplain which are assessed as being outside the area of a 1 percent (1 in 100) or greater chance from river flooding or a 1 in 200 probability of flooding from the sea.

A small portion of the site (approximately 5%), located along the northern boundary, lies within Flood Zone 2 (refer to **Figure 1**). The majority of the proposed residential development will be situated within Flood Zone 1, with only around 5% of the built area falling within Flood Zone 2. However, the finished floor levels of the proposed dwellings will be set 300 mm above the maximum modelled flood level for the 1-in-100-year return period, including an allowance for climate change. As such, the properties will not be at risk of fluvial flooding over the lifetime of the development.

In terms of access and egress, the proposed site access is located outside of Flood Zone 2. Therefore, a safe evacuation route can be provided via the access road toward the west, along Eweny Road, if required. In addition, emergency access is available to the south of the

site (refer to **Appendix B**), which could be utilised in the unlikely event of flooding at the primary access point.

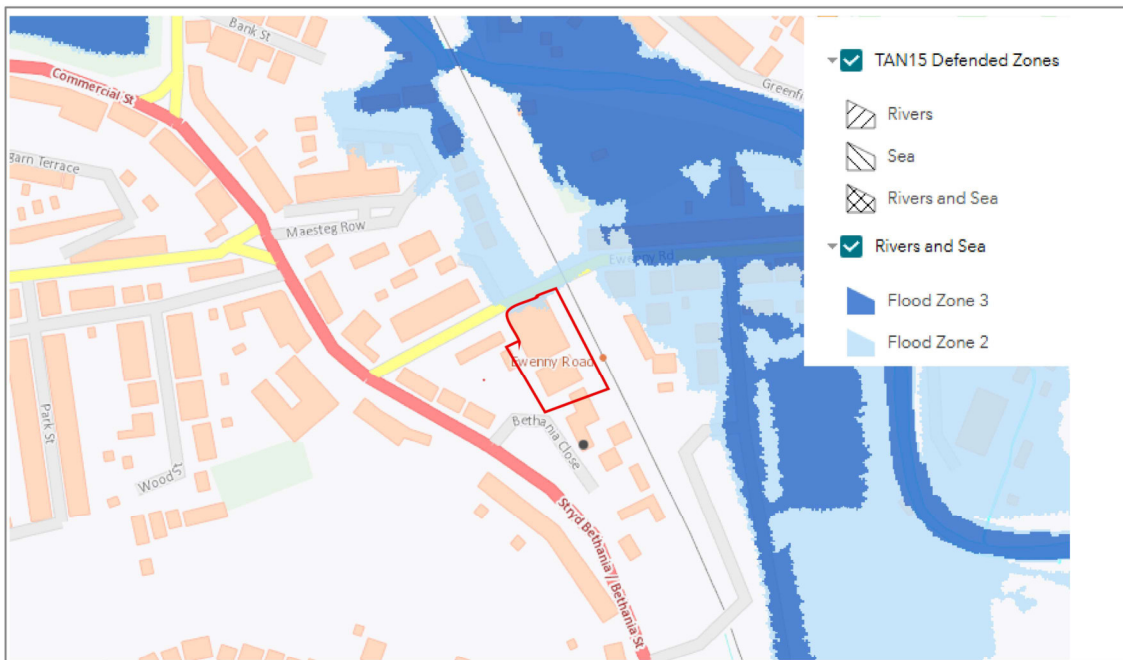


Figure 1 – Indicative Online Flood Map

Groundwater

The online development advice map confirms the development is within an area which doesn't have a history of flooding in the past.

The existing development is 100% brownfield. The development proposals will not increase permeable areas but reduce this significantly with the introduction of open spaces. Surface water from the development will be managed onsite via a sufficient drainage scheme. Introduction of SAB features will help reduce surface water run-off rates. There are no proposals to increase or point load areas via infiltration and therefore, the risk of flooding from groundwater is considered negligible.

Pluvial

According to the online indicative flood map, the site is located in an area at low risk of surface water flooding (refer to **Figure 2**).

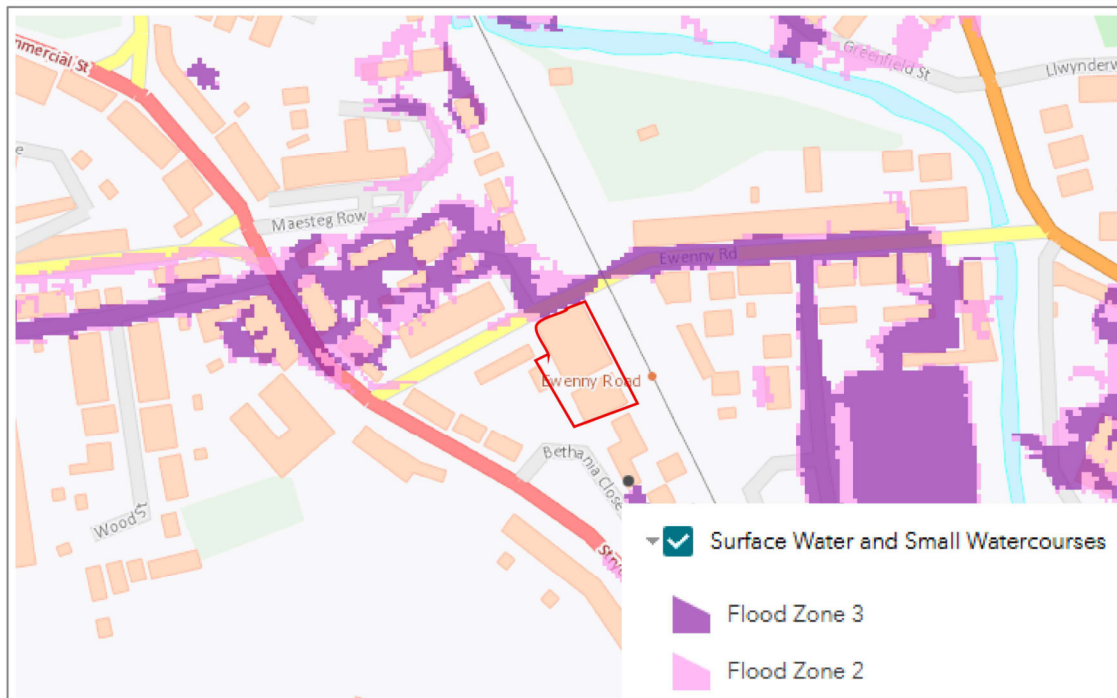


Figure 2 – Indicative surface water flood map

SuDS source control measures will be implemented within the Proposed Development, which will reduce the cumulative impact of overland flows. Therefore, the site is not deemed to be at high risk of flooding from pluvial sources.

Sewers

As per the Bridgend County Borough Council Strategic Flood Consequence Assessment (SFCA), there are no recorded sewer flooding incidents on or in the immediate vicinity of the site. The development will contain two principal drainage networks, consisting of separate foul water and surface water systems. Therefore, the probability of sewer flooding at the site location is assessed as low.

6. Proposed Drainage Strategy

Foul Drainage

It is proposed that foul water from the development will discharge to the existing public sewer located within Eweny Road. This will be subject to approval from Dŵr Cymru Welsh Water (DCWW), and a pre-development enquiry will be submitted to confirm whether there is sufficient capacity within the existing network to accommodate flows from the proposed development.

The proposed peak foul flow generated from the development has been calculated using the formula; 4000 litres per dwelling per day.

- Total Daily Foul Flow = 4,000 L/day × 18 dwellings
- Total Daily Foul Flow = 72,000 L/day
- Average Flow Rate = 72,000 ÷ 86,400 = **0.83 l/s**

The feasibility of connecting the proposed development to the existing foul sewer will be confirmed during the detailed design stage. This includes assessing network capacity and agreeing a point of connection with DCWW.

As such, confirmation from DCWW will be required to ensure their network can accommodate the additional foul discharge from the development.

Surface Water Drainage

Within Part H of the Building Regulations there is a hierarchy of discharge options to deal with surface water drainage. These are:-

- i) an adequate soakaway or some other adequate infiltration system,
- ii) watercourse,
- iii) to a surface water sewer, highway drain, or other drainage system; or
- iv) to a combined sewer.

At the time of writing, no soakaway testing has been undertaken. Infiltration testing will be carried out prior to the detailed design stage to assess the potential for the use of infiltration drainage methods on-site.

A review of the British Geological Survey (BGS) mapping indicates that the underlying geology comprises 'Till, Devensian – Diamicton', a superficial deposit typically associated with poor infiltration characteristics. Additionally, a borehole located approximately 100m south of the site records up to 12m of clay, further suggesting that infiltration drainage is unlikely to be feasible.

The closest surface water feature is The Llynfi River located approximately 210m to the west of the application site. The location of such an outfall and the route via the underpass of the rail bridge makes this a difficult and practically unviable route.

Subject to the results of infiltration testing, it is currently proposed that surface water runoff from the development will discharge to the surface water sewer located to the north of the site.

Greenfield run off rate calculations have been carried out by using HR Wallingford-UK SUDS and in accordance with IH124 methodology resulting in the following based on a site area of 0.0175 ha. Of the three greenfield run-off rates the median rate is proposed for use at the development. This are included within **Appendix C** and summarised below: -

Storm event	Greenfield run off (l/s)
Q_{BAR}	3.20
1 in 30 year	5.70
1 in 100 year	7.00

The existing site is brownfield, and there are existing positive drainage connections. It is proposed that the development is restricted to the existing greenfield run-off rate of 3.20 l/s.

It is a requirement that water is retained on site for all storm events up to the 1:100-year event allowing for climate change growth.

To accommodate the 1 in 30 year and 1 in 100 year + 40% allowance for climate change and to satisfy new criteria set out by the SuDS Approval Body (SAB) it is proposed that SuDS features will be used where practical to provide dual use functionality in the forms of on-site attenuation, pollution control and amenity. Potential uses of SuDS which may be utilised at the site are as follows:

Permeable Paving

Even though the infiltration drainage would not be feasible on this development, permeable paving systems could be used within the communal car parking areas of the site. These would provide initial 'interception' storage and water quality treatment.

SuDS Basin

It is proposed that an open space SuDS attenuation basin is constructed at the northwestern corner of the site. The attenuation basin will be designed to also contain suitable planting to also provide amenity and ecological value. Rainwater from roof areas will be discharged into the main SuDS attenuation basin via traditional pipe system.

All surface water drainage from the site will eventually discharge into the SuDS basin which will provide final treatment.

A flow control device such as an orifice or similar approved will be used to restrict the flows to 3.2 l/s before discharging to the existing sewer.

An indicative drainage strategy has been prepared and included in **Appendix D** of the report. Calculations have been undertaken to determine the approximate volume of attenuation that would be required for both the 1:30 and 1:100 year +40% (climate change) event. Calculations are located within **Appendix E**.

Sustainable Drainage Systems Standards

This development will be delivered in accordance with the Sustainable urban drainage Approval Body (SAB). As of January 2019, The Flood and Water Management Act 2010 (Schedule 3) came into effect. New development comprising more than one dwelling or an area exceeding 100 metres squared within Wales will now have to implement Sustainable Drainage Systems (SuDS) features to comply with national standards.

Developments within Wales meeting the criteria described above, require approval from the SAB and will need to demonstrate implementation of SuDS measures, maintenance and funding to ensure efficient operation for its design life. Justification where necessary should be provided where sustainable features are not feasible.

The principles set out within the Sustainable Drainage Systems Standards for Wales 2018 are as follows:

SuDS schemes should aim to:

- *manage water on or close to the surface and as close to the source of the runoff as possible;*
- *treat rainfall as a valuable natural resource;*
- *ensure pollution is prevented at source, rather than relying on the drainage system to treat or intercept it;*
- *manage rainfall to help protect people from increased flood risk, and the environment from morphological and associated ecological damage resulting from changes in flow rates, patterns and sediment movement caused by the development;*
- *take account of likely future pressures on flood risk, the environment and water resources such as climate change and urban creep;*
- *use the SuDS Management Train, using drainage components in series across a site to achieve a robust surface water management system (rather than using a single "end of pipe" feature, such as a pond, to serve the whole development);*
- *maximise the delivery of benefits for amenity and biodiversity;*
- *seek to make the best use of available land through multifunctional usage of public spaces and the public realm;*
- *perform safely, reliably and effectively over the design life of the development taking into account the need for reasonable levels of maintenance;*
- *avoid the need for pumping where possible; and*
- *be affordable, taking into account both construction and long-term maintenance costs and the additional environmental and social benefits afforded by the system.*

In addition, applications should be accompanied by proposals for a maintenance plan and the means of funding for the scheme for its design life.

Applicants seeking SAB Approval must demonstrate how they have complied with these principles or provide justification for any departure.

In support for this development a SuDS Pre-Application will also be prepared and issued to Bridgend County Borough Council.

Pollution Control and Water Quality

In keeping with S3 of the Sustainable Drainage Systems Standards for Wales 2018 and the principles above, consideration must be given to pollution control of surface water run-off. This will be considered further at detailed design stage.

It is proposed that the SuDS train will be implemented at the site to prevent. Potential measures include catchpit gullies and planting within the permeable paving system and SuDS basin, in areas to help improve quality of surface water effluent. The basin design allows for a small ephemeral pool, enhancing water quality treatment, with planting designed to withstand marshy conditions.

The first 5mm of rainfall carries most of the pollution, such as silt and any oil from road runoff, and is often known as the 'first flush'. The proposed swale system has been designed to capture and treat the 'first flush' runoff. Surface water from the site will receive adequate treatment before final discharging to the surface water sewers.

As part of the SAB process, following detailed design of proposed attenuation features a SuDS Management plan will be issued to assess the maintenance and operation of SuDS through its design life.

7. Conclusion

Think Urban has been instructed to prepare a Flood Consequence Assessment (FCA) in respect of proposed development at Old Drill Hall, Eweny Road, Maesteg CF34 9ES. This report has been prepared as a means of demonstrating that flooding issues would not constrain the development of the site or have any adverse effects on existing drainage networks and watercourses.

According to the indicative online flood map the development is predominately located within Flood Zone 1. All potential sources of flood risk, as required by TAN 15, at the application site have been assessed, and the risks of flooding occurring have all been assessed as low. In assessing the flood risk, the impacts of climate change have been considered for the lifetime of the proposed development and are considered acceptable

Foul Drainage

A pre-development enquiry is to be issued to DCWW to confirm there is adequate capacity within the existing drainage network to accommodate the proposed foul flow of 0.83 l/s, from the proposed development. A connection to the existing sewer located to north of the site is proposed and is subject to formal Section 106 approval.

Surface Water Drainage

It is proposed that discharge of surface water from the application site will follow the hierarchy of discharge. The proposed method of surface water discharge will comply with Part H of the building regulations.

A review of British Geological Survey mapping and local borehole data indicates that the site is underlain by low-permeability deposits, rendering infiltration drainage unlikely to be viable. Given the impracticality of discharging to the nearby Llynfi River due to its location and topographical constraints, it is proposed, subject to infiltration testing, that surface water runoff from the development be discharged to the surface water sewer located to the north of the site.

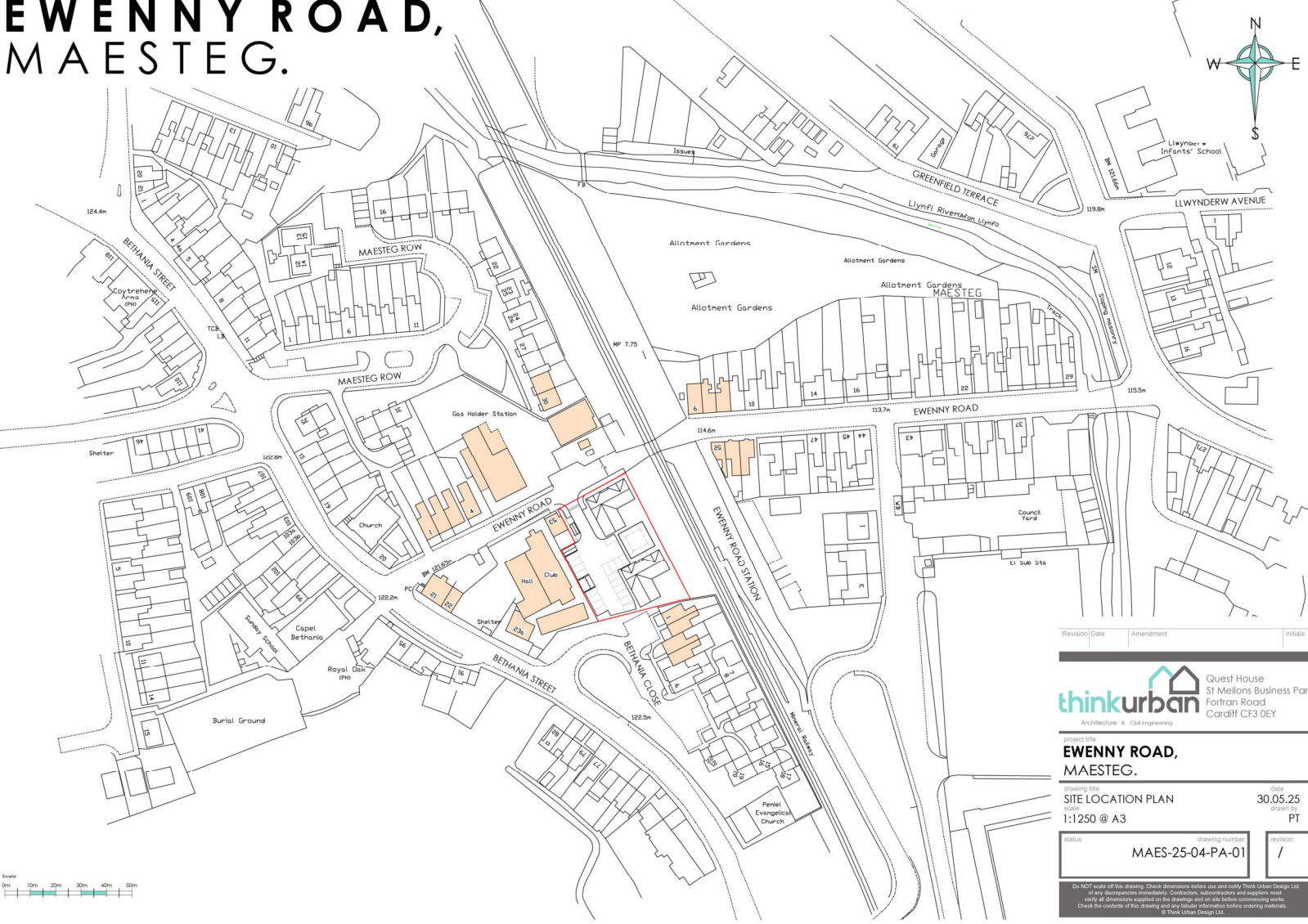
It is proposed that surface water from the development is restricted to the greenfield run-off rate and means of attenuation is provided in accordance with Schedule 3 of the Flood and Water Management Act 2010.

It is proposed that surface water from the development receives the appropriate treatment via permeable paving system and SuDS basin, before discharging into the public sewer to satisfy S3 of the SuDS Statutory Guidance.

Attenuation will accommodate all flows up to and including the 1 in 100-year storm event plus an additional 40% allowance for climate change.

APPENDIX A SITE LOCATION PLAN

EWENNY ROAD, MAESTEG.



Revision	Date	Amendment	Initials
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Guest House
St Mellons Business Park
Fonfron Road
Cardiff CF3 0EY

project title
**EWENNY ROAD,
MAESTEG.**

drawing title SITE LOCATION PLAN	date 30.05.25
scale 1:1250 @ A3	drawing by PT

status MAES-25-04-PA-01	drawing number MAES-25-04-PA-01	revision /
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Do NOT scale off this drawing. Check dimensions before use and notify thinkurban Design Ltd. of any discrepancies immediately. Contractors, subcontractors and suppliers must verify all dimensions against the drawings and on site before commencing work. Check the contents of this drawing and any relevant information before ordering materials. © Think Urban Design Ltd.

APPENDIX B PROPOSED SITE PLAN



ANY ROAD

EWENNY RO

BET



NOTES:

- DO NOT SCALE FROM THIS DRAWING.
- ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE STATED.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERING & ARCHITECTS DRAWINGS & SPECIFICATIONS.
- ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE APPROVED DRAWINGS & SPECIFICATIONS TO THE SATISFACTION OF THE LOCAL AUTHORITY.
- THE CONTRACTOR IS TO CHECK & VERIFY ALL SITE DIMENSIONS & LEVELS BEFORE WORKS START ON SITE.
- POSITION AND DEPTH OF EXISTING STATUTORY UNDERTAKERS EQUIPMENT AFFECTED BY THE PROPOSED WORKS ARE TO BE CHECKED FOR ACCURACY ON SITE PRIOR TO COMMENCEMENT OF ANY OTHER WORKS.
- ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
- GULLIES TO BE LAID 0.005m BELOW THE ADJACENT ROAD SURFACE.
- ALL HIGHWAY DESIGN RECOMMENDATIONS ARE ADVISORY & ARE SUBJECT TO APPROVAL FROM THE LOCAL HIGHWAYS AUTHORITY.
- NO LOOSE CHIPPINGS ARE TO BE USED WITHIN OR NEAR TO THE ADOPTABLE HIGHWAY.
- FOOTPATH SURFACING TO BE LAID 0.005m HIGHER THAN THE ADJACENT KERB.
- CARRIAGEWAY GEOMETRY & ALIGNMENT ARE INDICATIVE ONLY & SUBJECT TO CHANGE PRIOR TO TECHNICAL APPROVAL FROM THE LOCAL ADOPTING AUTHORITY.

LEGEND

EXTERNALS

- FINISHED FLOOR LEVELS
- SPOT LEVELS

HIGHWAYS

- MAJOR CONTOUR (0.30m)
- MINOR CONTOUR (0.03m)
- EMBANKMENT
- STREET LIGHTING

MISCELLANEOUS

- SITE BOUNDARY
- INFRASTRUCTURE MAJOR CONTOUR (0.3m)
- INFRASTRUCTURE MINOR CONTOUR (0.1m)

NOTE: EXTERNAL LEVELS MAY CHANGE DUE TO GROUND CONDITIONS AND PRACTICAL CONSIDERATIONS DURING CONSTRUCTION.

B	NEW LAYOUT UPDATE	AAV	LF	09.07.23
A	NEW LAYOUT UPDATE	AAV	LF	29.04.23
	ISSUED	AAV	LF	02.12.24

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Client: **Castell Group**

Project: **Drill Mill Maesteg**

Drawing: **Engineering Layout**

Scale:	A1: 1:200	Sheet Size:	A2
Drawn:	AAV	Checked:	LF
Issue Number:	231122 CG_GA_001	Issue Date:	28/11/2024

APPENDIX C GREENFIELD RUN OFF RATE CALCULATIONS



Greenfield runoff rate estimation tool

www.uksuds.com | Greenfield runoff rate estimation tool (<https://www.uksuds.com/>)

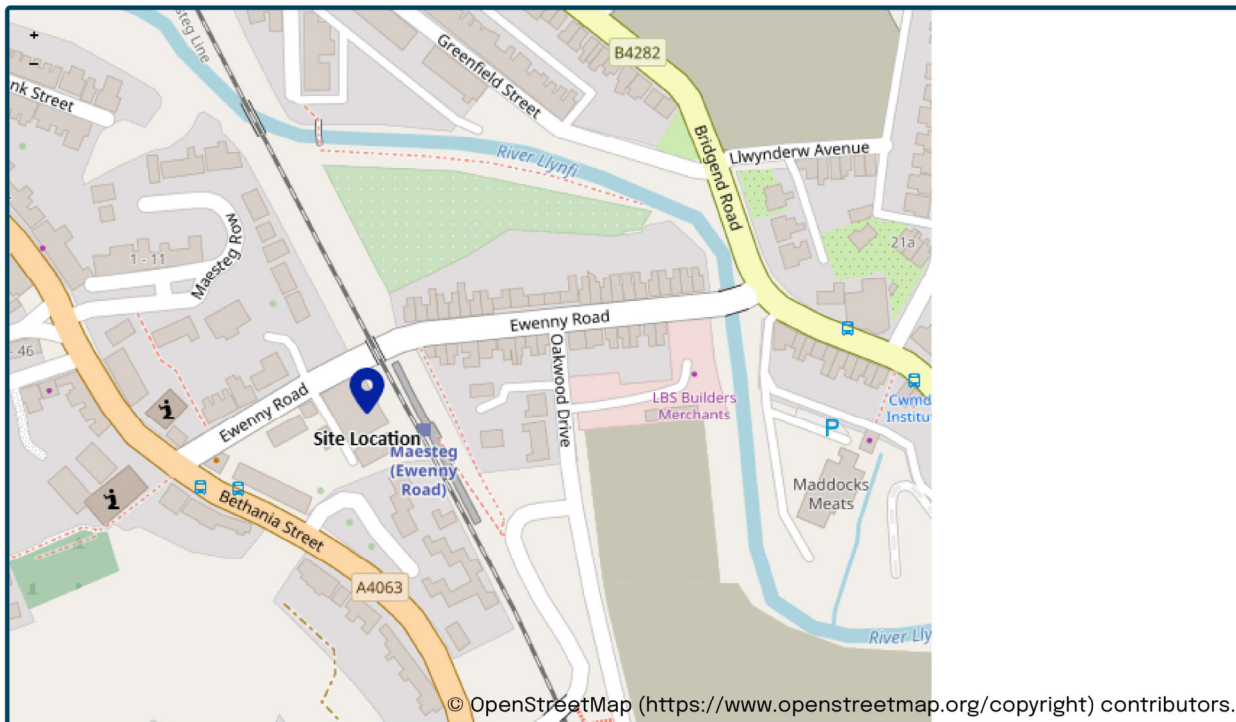
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Project details

Date	03/07/2025
Calculated by	
Reference	
Model version	2.0.1

Location

Site name	DRILL MILL EWENNY ROAD
Site location	MAESTEG



Site easting	285922
Site northing	190889

Site details

Total site area (ha)

ha

Greenfield runoff

Method

Method

IH124

SAAR (mm)

My value

mm

Map value

How should SPR be derived?

WRAP soil type



SPR

QBar (IH124) (l/s)

l/s

Growth curve factors

Hydrological region

My valueMap value

1 year growth factor

2 year growth factor

10 year growth factor

30 year growth factor

100 year growth factor

200 year growth factor

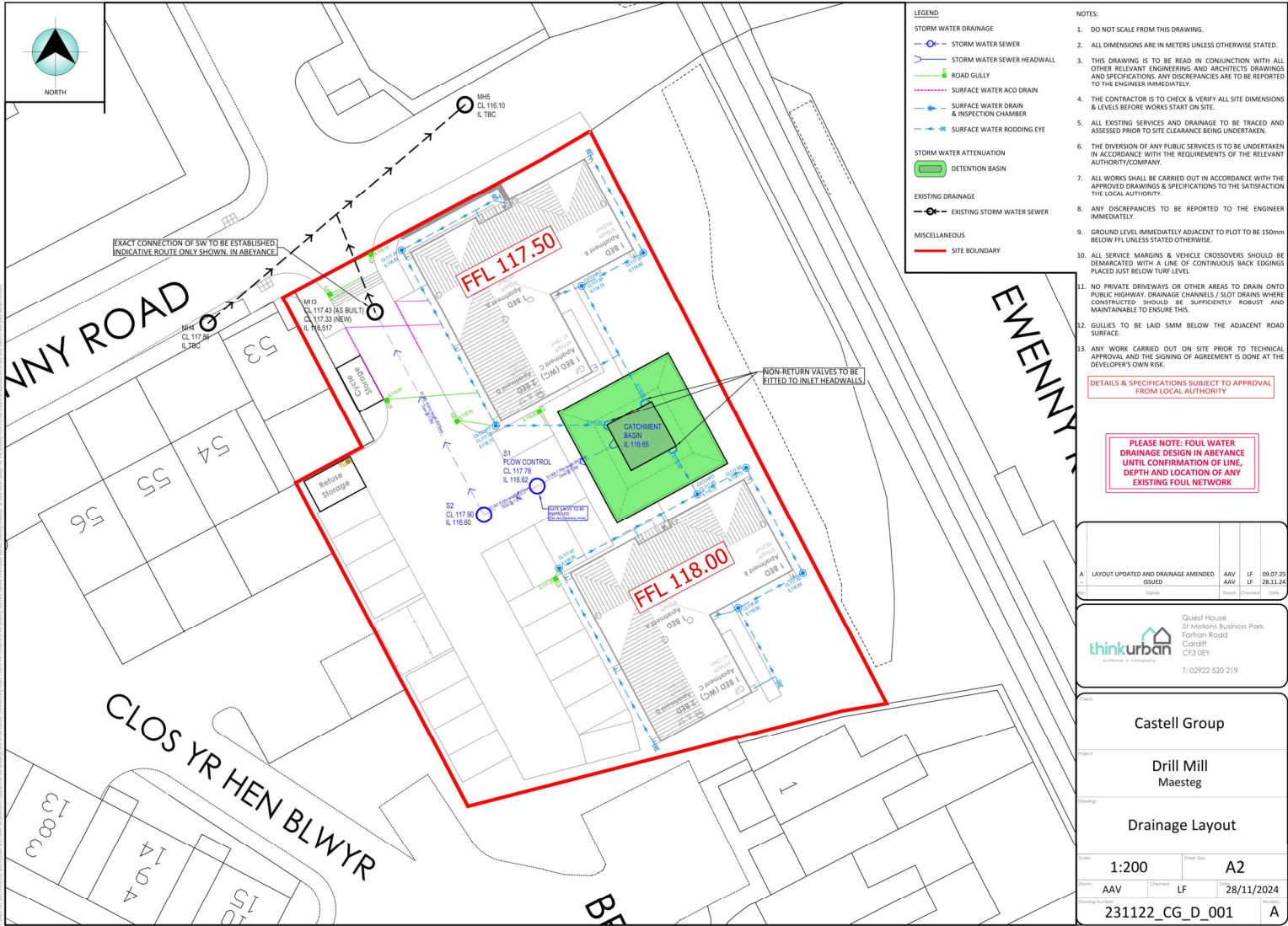
Results

Method	IH124	
Flow rate 1 year (l/s)	2.8	l/s
Flow rate 2 year (l/s)	3	l/s
Flow rate 10 years (l/s)	4.6	l/s
Flow rate 30 years (l/s)	5.7	l/s
Flow rate 100 years (l/s)	7	l/s
Flow rate 200 years (l/s)	7.9	l/s

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.0.1) developed by HR Wallingford and available at [uksuds.com](https://www.uksuds.com) (<https://www.uksuds.com/>). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at [uksuds.com/terms-conditions](https://www.uksuds.com/terms-conditions) (<https://www.uksuds.com/terms-conditions>). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

APPENDIX D INDICATIVE DRAINAGE STRATEGY



APPENDIX E SURFACE WATER DRAINAGE CALCULATIONS

Thinkurban Design		Page 1
Quest House Fortran Road Cardiff CF3 0EY	Drill Hall, Ewenny Road SURFACE WATER - SUDS BASIN 1in100 YR +40%CC	
Date 02/07/2025	Designed by SPS	
File SuDS Basin - 1in100 YR +40%...	Checked by LF	
Micro Drainage		Source Control 2019.1

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	117.580	0.780	2.5	26.9	O K
30 min Summer	117.752	0.952	2.8	39.3	O K
60 min Summer	117.913	1.113	3.0	53.8	O K
120 min Summer	117.986	1.186	3.1	61.3	Flood Risk
180 min Summer	118.015	1.215	3.1	64.5	Flood Risk
240 min Summer	118.032	1.232	3.1	66.3	Flood Risk
360 min Summer	118.047	1.247	3.2	68.0	Flood Risk
480 min Summer	118.047	1.247	3.2	68.0	Flood Risk
600 min Summer	118.039	1.239	3.2	67.2	Flood Risk
720 min Summer	118.028	1.228	3.1	65.9	Flood Risk
960 min Summer	117.998	1.198	3.1	62.6	Flood Risk
1440 min Summer	117.933	1.133	3.0	55.8	O K
2160 min Summer	117.836	1.036	2.9	46.5	O K
2880 min Summer	117.750	0.950	2.8	39.2	O K
4320 min Summer	117.615	0.815	2.5	29.2	O K
5760 min Summer	117.515	0.715	2.4	23.0	O K
7200 min Summer	117.441	0.641	2.3	18.9	O K
8640 min Summer	117.387	0.587	2.2	16.2	O K
10080 min Summer	117.343	0.543	2.1	14.3	O K
15 min Winter	117.580	0.780	2.5	26.9	O K
30 min Winter	117.752	0.952	2.8	39.4	O K
60 min Winter	117.914	1.114	3.0	53.9	O K
120 min Winter	117.989	1.189	3.1	61.7	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	115.657	0.0	29.8	28
30 min Summer	85.577	0.0	44.1	41
60 min Summer	60.674	0.0	62.5	68
120 min Summer	37.846	0.0	78.0	122
180 min Summer	28.864	0.0	89.2	168
240 min Summer	23.840	0.0	98.2	200
360 min Summer	18.184	0.0	112.4	266
480 min Summer	14.955	0.0	123.2	336
600 min Summer	12.823	0.0	132.1	406
720 min Summer	11.292	0.0	139.6	474
960 min Summer	9.209	0.0	151.8	612
1440 min Summer	6.894	0.0	170.4	878
2160 min Summer	5.161	0.0	191.4	1264
2880 min Summer	4.226	0.0	208.9	1632
4320 min Summer	3.241	0.0	240.3	2348
5760 min Summer	2.723	0.0	269.2	3064
7200 min Summer	2.411	0.0	298.0	3816
8640 min Summer	2.202	0.0	326.6	4504
10080 min Summer	2.053	0.0	355.2	5240
15 min Winter	115.657	0.0	29.8	28
30 min Winter	85.577	0.0	44.1	41
60 min Winter	60.674	0.0	62.5	68
120 min Winter	37.846	0.0	78.0	122

Thinkurban Design		Page 2
Quest House Fortran Road Cardiff CF3 0EY	Drill Hall, Ewenny Road SURFACE WATER - SUDS BASIN 1in100 YR +40%CC	
Date 02/07/2025	Designed by SPS	
File SuDS Basin - 1in100 YR +40%...	Checked by LF	
Micro Drainage		Source Control 2019.1

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
180 min Winter	118.020	1.220	3.1	65.0	Flood Risk
240 min Winter	118.032	1.232	3.1	66.3	Flood Risk
360 min Winter	118.042	1.242	3.2	67.4	Flood Risk
480 min Winter	118.034	1.234	3.2	66.5	Flood Risk
600 min Winter	118.017	1.217	3.1	64.7	Flood Risk
720 min Winter	117.995	1.195	3.1	62.3	Flood Risk
960 min Winter	117.944	1.144	3.0	56.9	O K
1440 min Winter	117.837	1.037	2.9	46.6	O K
2160 min Winter	117.687	0.887	2.7	34.3	O K
2880 min Winter	117.559	0.759	2.5	25.6	O K
4320 min Winter	117.371	0.571	2.1	15.5	O K
5760 min Winter	117.249	0.449	1.9	10.5	O K
7200 min Winter	117.172	0.372	1.7	7.8	O K
8640 min Winter	117.120	0.320	1.6	6.3	O K
10080 min Winter	117.084	0.284	1.5	5.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
180 min Winter	28.864	0.0	89.2	176
240 min Winter	23.840	0.0	98.2	204
360 min Winter	18.184	0.0	112.4	280
480 min Winter	14.955	0.0	123.2	358
600 min Winter	12.823	0.0	132.1	434
720 min Winter	11.292	0.0	139.6	508
960 min Winter	9.209	0.0	151.8	652
1440 min Winter	6.894	0.0	170.4	924
2160 min Winter	5.161	0.0	191.4	1308
2880 min Winter	4.226	0.0	208.9	1676
4320 min Winter	3.241	0.0	240.3	2380
5760 min Winter	2.723	0.0	269.2	3064
7200 min Winter	2.411	0.0	298.0	3752
8640 min Winter	2.202	0.0	326.6	4496
10080 min Winter	2.053	0.0	355.2	5152

Thinkurban Design		Page 3
Quest House	Drill Hall, Ewenny Road	
Fortran Road	SURFACE WATER - SUDS BASIN	
Cardiff CF3 0EY	1in100 YR +40%CC	
Date 02/07/2025	Designed by SPS	
File SuDS Basin - 1in100 YR +40%...	Checked by LF	
Micro Drainage	Source Control 2019.1	

Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	2013
Site Location	GB 285910 190906 SS 85910 90906
Data Type	Point
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	1.000
Cv (Winter)	1.000
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.103

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From: To: (ha)	From: To: (ha)	From: To: (ha)	From: To: (ha)	From: To: (ha)	From: To: (ha)	From: To: (ha)	From: To: (ha)
0 4 0.026	4 8 0.026	8 12 0.026	12 16 0.025				

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Quest House Fortran Road Cardiff CF3 0EY	Drill Hall, Ewenny Road SURFACE WATER - SUDS BASIN 1in100 YR +40%CC	
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Model Details

Storage is Online Cover Level (m) 118.050

Tank or Pond Structure

Invert Level (m) 116.800

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	12.0	1.250	115.0

Orifice Outflow Control

Diameter (m) 0.037 Discharge Coefficient 0.600 Invert Level (m) 116.800