



Appendix D – Flood Map for Planning

Flood map for planning

Your reference
Bury

Location (easting/northing)
378947/407679

Created
10 Jan 2023 15:04

Your selected location is in flood zone 3, an area with a high probability of flooding.

This means:

- you must complete a flood risk assessment for development in this area
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (see www.gov.uk/guidance/flood-risk-assessment-standing-advice)

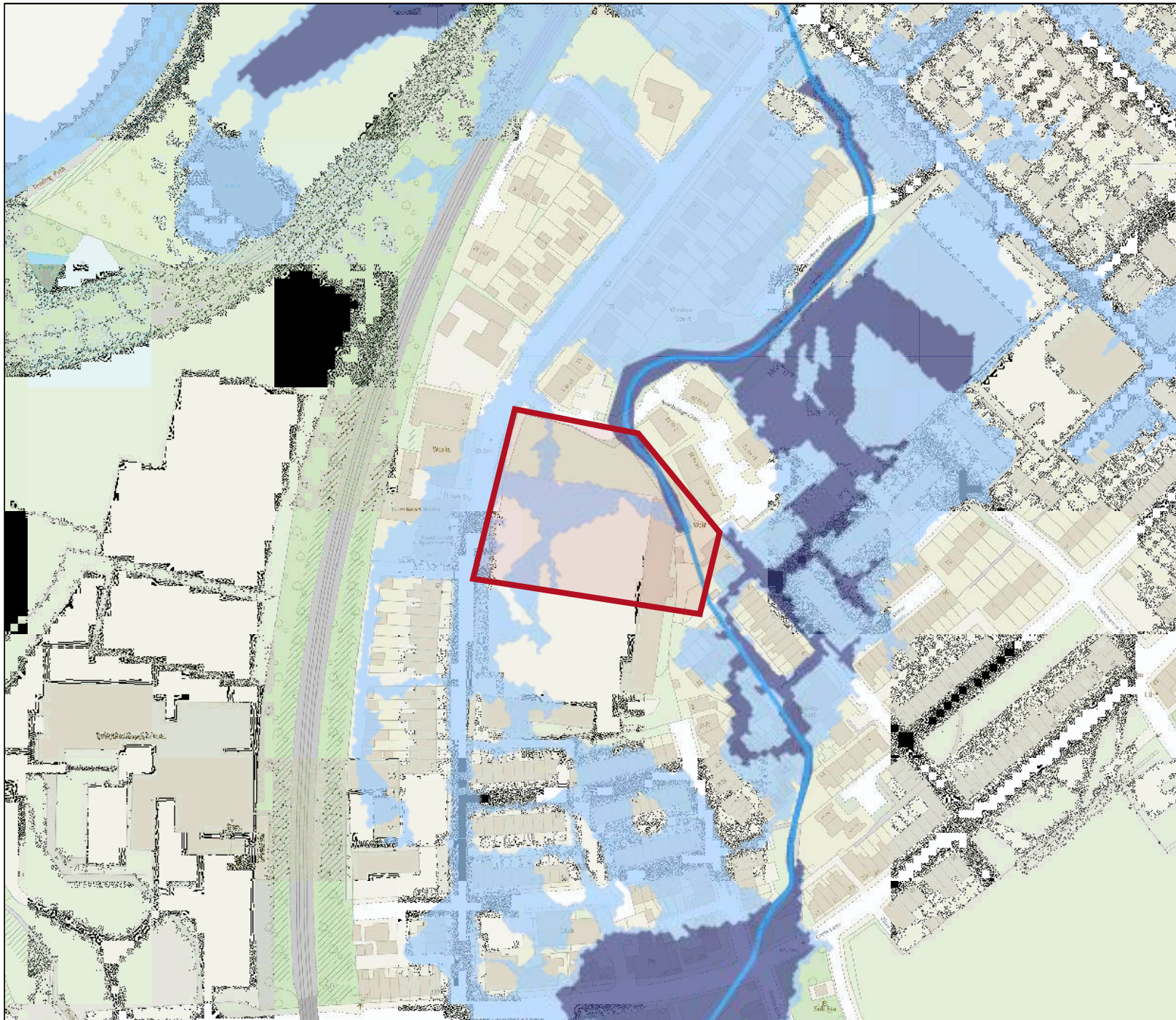
Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2022 OS 100024198. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference

Bury

Location (easting/northing)

378947/407679

Scale

1:2500

Created

10 Jan 2023 15:04

-  Selected area
-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area

0 20 40 60m



Appendix E – United Utilities Records/Correspondance

LKGroup

Unit 29 Eton Business Park
Unit 29, Eton Business Park,
Radcliffe, Greater Manchester
M26 2ZS

FAO:

How to contact us:

United Utilities Water Limited
Property Searches
Haweswater House
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP

Telephone: 0370 7510101

E-mail: propertysearches@uuplc.co.uk

Your Ref: FRA 22 1128
Our Ref: UUPS-ORD-422451
Date: 16/08/2022

Dear Sirs

Location: FERRARI ELECTRO PLATING STATION WORKS BURY ROAD, RADCLIFFE, MANCHESTER, M26 2UA

I acknowledge with thanks your request dated 11/08/2022 for information on the location of our services.

Please find enclosed plans showing the approximate position of United Utilities' apparatus known to be in the vicinity of this site.

The enclosed plans are being provided to you subject to the United Utilities terms and conditions for both the wastewater and water distribution plans which are shown attached.

If you are planning works anywhere in the North West, please read United Utilities' access statement before you start work to check how it will affect our network. <http://www.unitedutilities.com/work-near-asset.aspx>.

I trust the above meets with your requirements and look forward to hearing from you should you need anything further.

If you have any queries regarding this matter please [contact us](#).

Yours Faithfully,



Karen McCormack
Property Searches Manager

TERMS AND CONDITIONS - WASTEWATER AND WATER DISTRIBUTION PLANS

These provisions apply to the public sewerage, water distribution and telemetry systems (including sewers which are the subject of an agreement under Section 104 of the Water Industry Act 1991 and mains installed in accordance with the agreement for the self construction of water mains) (UUWL apparatus) of United Utilities Water Limited "(UUWL)".

TERMS AND CONDITIONS:

- This Map and any information supplied with it is issued subject to the provisions contained below, to the exclusion of all others and no party relies upon any representation, warranty, collateral contract or other assurance of any person (whether party to this agreement or not) that is not set out in this agreement or the documents referred to in it.
- This Map and any information supplied with it is provided for general guidance only and no representation, undertaking or warranty as to its accuracy, completeness or being up to date is given or implied.
- In particular, the position and depth of any UUWL apparatus shown on the Map are approximate only. UUWL strongly recommends that a comprehensive survey is undertaken in addition to reviewing this Map to determine and ensure the precise location of any UUWL apparatus. The exact location, positions and depths should be obtained by excavation trial holes.
- The location and position of private drains, private sewers and service pipes to properties are not normally shown on this Map but their presence must be anticipated and accounted for and you are strongly advised to carry out your own further enquiries and investigations in order to locate the same.
- The position and depth of UUWL apparatus is subject to change and therefore this Map is issued subject to any removal or change in location of the same. The onus is entirely upon you to confirm whether any changes to the Map have been made subsequent to issue and prior to any works being carried out.
- This Map and any information shown on it or provided with it must not be relied upon in the event of any development, construction or other works (including but not limited to any excavations) in the vicinity of UUWL apparatus or for the purpose of determining the suitability of a point of connection to the sewerage or other distribution systems.
- No person or legal entity, including any company shall be relieved from any liability howsoever and whensoever arising for any damage caused to UUWL apparatus by reason of the actual position and/or depths of UUWL apparatus being different from those shown on the Map and any information supplied with it.
- If any provision contained herein is or becomes legally invalid or unenforceable, it will be taken to be severed from the remaining provisions which shall be unaffected and continue in full force and effect.
- This agreement shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts, save that nothing will prevent UUWL from bringing proceedings in any other competent jurisdiction, whether concurrently or otherwise.

Jenna Lowe

From: wastewaterdeveloperservices@uuplc.co.uk
Sent: 25 August 2022 20:14
To: Jenna Lowe
Subject: SuDS QUERY - FRA 22 1128 - Station Works, Bury Road, Radcliffe - Uu Ref. 02664735

Good evening Jenna,

Pre Development Enquiry for: Station Works, Bury Road, Radcliffe, M26 2UA UU Reference Number : 02664735

We have carried out an assessment of your application which is based on the information provided. This pre-development advice on your drainage strategy will be valid for 12 months. Your drainage strategy will need to be reviewed by other competent authorities as part of the planning process, and we advise that you carry out the necessary site investigations to confirm the viability of your proposals.

If your investigations require access to our public sewer network, we ask that you contact our network engineers with a request for an access certificate via our main contact telephone number 0345 6723 723 or refer to the link below:

<https://www.unitedutilities.com/builders-developers/working-near-our-assets/>

Foul Water

Foul flow from this site will be allowed to drain into the public foul water/combined sewer system.

Our preferred point of discharge would be to the 300mm diameter public combined sewer within Bury Road located to the west of your proposed development at an unrestricted rate.

If you are able to identify an alternative, more suitable point of discharge, we request that you contact us at your earliest convenience so that we can assess suitability.

In accordance with our infrastructure plans we may ask you to change your point of connection. Therefore please contact us when you are ready to formalise your drainage proposals, we would suggest before you submit for Full Planning.

Surface Water

All surface water flow from the proposed development should drain in-line with the drainage hierarchy, as outlined in Paragraph 80, (Reference ID: 7-080-20150323), of the National Planning Practice Guidance. We also recommend you prioritise the use of multi-functional sustainable drainage systems for the management of surface water in accordance with national planning policy.

Generally, the aim should be to discharge surface run off as high up the following hierarchy of drainage options as reasonably practicable.

This is outlined as follows, in order of priority:

1. **into the ground (infiltration);**
2. **to a surface waterbody;**

3. **to a surface water sewer or highway drain;**
4. **to a combined sewer.**

For guidance, The [North West SuDS Pro-Forma](#) provides information on the appropriate evidence required at each stage of the hierarchy, to demonstrate how each level has been discounted.

The Lead Local Flood Authority has responsibility for all surface water drainage concerns and their input to your proposal is critical. You should also consider whether it is necessary to discuss your proposal with the Environment Agency, or Internal Drainage Board (if operating in your area).

The Local Planning Authority are the determining authority for any application for planning permission and the appropriate authority for determining cost viability of a proposed drainage scheme, such assessments are outside of the jurisdiction of United Utilities.

Infiltration

Surface water runoff generated from this development should discharge to the ground via infiltration system where feasible.

A detailed evidence based feasibility assessment must be carried out in line with Chapter 25 of the CIRIA SuDS Manual 2015 to determine whether infiltration is a suitable method of surface water disposal.

Particular attention must be paid to Ground Water Source Protection Zones to ensure that the risk of pollution to these valuable resources is not compromised. Details can be obtained from the government website:

<https://www.gov.uk/guidance/groundwater-source-protection-zones-spzs#find-groundwater-spzs>

If your site is in a Groundwater Source Protection Zone, you should have regard to the Environment Agency's approach to Groundwater Protection. Information on this is available via the link below:

<https://www.gov.uk/government/publications/groundwater-protection-position-statements>

Please note that such a location could have implications for the principle of your development and the need for additional mitigating measures to protect the groundwater environment and public water supply in the detailed design of your site.

Waterbody

If an evidence based assessment has been carried out and confirms that infiltration is not feasible, we recommend that you contact the Lead Local Flood Authority and/or Environment Agency to discuss a point of discharge to the open ordinary watercourse located east of the proposed site.

We would encourage you to identify and engage with any third party landowner and riparian owner to agree access and discharge rights to the water body if this is not in your ownership.

Highway Drainage

If an evidence based assessment has been carried out and confirms that infiltration is not feasible, we recommend that you investigate the possibility of draining surface water to the highway drain where this ultimately discharges to a watercourse, by contacting the relevant Highway Authority.

Public Sewer

Given that there is a more sustainable method of draining the site to the watercourse located to the east, it is assumed that a connection to the public sewer is not required.

Levels

For low-lying sites, (where the ground level of the site or the level of a basement is below the ground level at the point where the drainage connects to the public sewer), care should be taken to ensure that the property is not at increased risk of flooding. If these circumstances exist, we recommend that you contact us to discuss further. It could affect the detailed design of your site and result in the need to incorporate appropriate mitigating measures in your drainage scheme.

Land drainage / Overland flows / track drainage

United Utilities have no obligation, and furthermore we do not accept land drainage, overland flows or track drainage into the public sewerage network under any circumstances

Sewer Adoptions

You have indicated on your application form that you intend to put the sewers forward for adoption (including any SuDS components that can come within the meaning of a sewer).

United Utilities assess adoption applications based on the current Design & Construction Guidance and local practices which have now replaced 'Sewers For Adoption 6th Edition'.

We recommend that you submit a pre design assessment to the sewer adoption mailbox (SewerAdoptions@uuplc.co.uk) stating pre design assessment in the title

Please refer to links below to obtain further guidance:

<https://www.unitedutilities.com/builders-developers/larger-developments/wastewater/sewer-adoptions/>

Site drainage must be designed in accordance with Building Regulations, National Planning Policy, and local flood authority guidelines, we would recommend that you speak and make suitable agreements with the relevant statutory bodies.

If you intend to put forward your wastewater assets for adoption by United Utilities, the proposed detail design will be subject to a technical appraisal by an Adoption Engineer as we need to be sure that the proposals meets the requirements set out in the Design & Construction Guidance. The proposed design should give consideration to long term operability and give United Utilities a safe and cost effective proposal for the lifetime of the assets. In these cases, we strongly recommend that no construction commences until the detailed drainage design, submitted as part of the Section 104 application, has been assessed and accepted in writing by United Utilities. Any work carried out prior to the technical assessment being approved is done entirely at the developer's own risk and could be subject to change.

SuDS

If your development proposal incorporates any SuDS component(s) which interact with a sewer network you plan on offering for adoption to United Utilities; contact should be made with our technical team at your earliest convenience, please complete the 'Section 104 pre-application form : ' and include as much relevant detail as you can. These discussions can help prevent delays later in the development process.

Section 104 Pre application form (1b)

As per the sewerage sector guidance, all SuDS should be designed in accordance with the standards within the Design & construction guidance & the CIRIA SuDS manual (C753)

Codes For Adoption

The new Codes for Adoption are outlined on the Water UK Website. The link below takes you to their webpage:

<https://www.water.org.uk/technical-guidance/developers-services/codes-for-adoption/>

A free copy of the new Design & Construction Guidance can be downloaded via the link below:

<https://www.water.org.uk/sewerage-sector-guidance-approved-documents/>

Existing Wastewater Assets Crossing the Site

We have reviewed our records and can confirm that there does not appear to be any charted public sewers located within the boundary of proposed development. However, due to the accuracy of the records and the public sewer transfer legislation in 2011, not all public sewers are shown on our records so we would ask that you proceed with caution and carry out your own site investigation works. If any uncharted sewers are identified while carrying out your works we would ask that you contact United Utilities at the earliest opportunity so that we can offer guidance and update our records.

Existing Water Assets Crossing the Site

It is the developer responsibility to identify utilities on-site. Where clean water assets are shown on our records, we recommend that you contact our Water Pre-Development Team, via the following email address:

DeveloperServicesWater@uuplc.co.uk. Further information for this service can be found on our website via the link below:

<https://www.unitedutilities.com/builders-developers/larger-developments/pre-development/water-pre-dev/>

Connection Application

Although we may discuss and agree discharge points and rates in principle, please be aware that you will have to apply for a formal sewer connection. This is so that we can assess the method of construction, Health & Safety requirements and to ultimately inspect the connection when it is made. Details of the application process and the form itself can be obtained from our website by following the link below:

<https://www.unitedutilities.com/builders-developers/wastewater-services/sewer-connections/sewer-connection/>

We recommend that the detailed design should confirm the locations of all utilities in the area and ensure that any proposed drainage solution considers routing and clash checks where required.

If we can be of any further assistance please don't hesitate to contact us further.

Kind regards,

Shoaib.

If you have received a great service today why not tell us?
Visit: unitedutilities.com/wow

Did you know we now have a live chat facility available to you Mon to Friday 8 -5pm. You just click on the orange live chat box on our webpage and one of our advisors will be ready to chat to you and help you with your enquiry <https://www.unitedutilities.com/builders-developers/> or you can email us at developerserviceswater@uuplc.co.uk

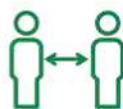
Coronavirus | Prevent the spread



Wash your
hands



Disinfect
common surfaces



Practise social
distancing



FEVER +
COUGH

Stay home if you
have symptoms

[Click for our message to customers](#)

----- Original Message -----

From: wastewaterdeveloperservices@uuplc.co.uk [wastewaterdeveloperservices@uuplc.co.uk]

Sent: 18/08/2022 14:25

To: j.lowe@thelkgroup.com

Subject: SuDS QUERY - FRA 22 1128 - Station Works, Bury Road, Radcliffe - Uu Ref. 02664735

Good Afternoon,

Thank you for contacting United Utilities.

I have passed your details to our engineer who will respond in due course.

Kind Regards,



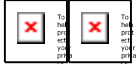
Louise Dack

Customer Advisor Advanced
Developer Services & Metering
Customer Services
T: 01925 233063 (33063 internal)
unitedutilities.com

Did you know we now have a live chat facility available to you Mon to Friday 8 -5pm. You just click on the orange live chat box on our webpage and one of our advisors will be ready to chat to you and help you with your enquiry

<https://www.unitedutilities.com/builders-developers/> or you can email us at

WastewaterDeveloperServices@uuplc.co.uk



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www.unitedutilities.com
www.unitedutilities.com/subsidiaries

Jenna Lowe

From: Smith, Frances <F.Smith@bury.gov.uk>
Sent: 17 August 2022 19:09
To: Jenna Lowe
Cc: Southgate, Andrew
Subject: RE: SuDS QUERY - FRA 22 1128 - Station Works, Bury Road, Radcliffe

Hi Jenna,

In response to your email below, please note the following:

- The Environment Agency are installing flood defences along the River Irwell between Close Park and Lower Hinds. EA will be able to provide detailed information regarding these defences;
- There were significant flood events in 2015 and 2020 in Radcliffe;
- The site is not within a Critical Drainage Area
- The UDP does not contain any SUDs policies and therefore NPPF para 167 would apply.

Andy will be able to advise in relation to ordinary watercourses and sewers in the area and highway drainage restrictions and records.

I hope the above helps.

Regards

Fran

From: Jenna Lowe <j.lowe@thelkgroup.com>
Sent: 11 August 2022 16:12
To: Smith, Frances <F.Smith@bury.gov.uk>; Southgate, Andrew <A.M.Southgate@bury.gov.uk>; Development Control <Development.Control@bury.gov.uk>; Planning Policy <Planning.Policy@bury.gov.uk>
Subject: SuDS QUERY - FRA 22 1128 - Station Works, Bury Road, Radcliffe

Dear Sir/Madam,

LK Consult Ltd. has been commissioned to undertake a Sustainable Drainage Strategy (SuDS) for a site located at Station Works, Bury Road, Radcliffe, M26 2UA, centred at approximate National Grid Reference 378922E, 407648N.

The area of interest appears to be partially within Flood Zone 2.

The site location is attached to this email.

To complete the SUDs, we would be grateful if you could supply us with the following, if available, for the vicinity of the site:

- Details of any flood defences in the immediate area, including their extent, crest levels (and datum), assumed level of standard, construction and maintenance regime, as well as any other structures which may influence the local hydraulics.

- Records of any historic flood events and potential sources of flooding from rivers, land drainage, groundwater, foul and surface water sewers on site and in the area.
- Any restrictions applied to ordinary watercourses and sewers in the area.
- Highway drainage restrictions and records.
- Indications if the site is within the Critical Drainage Area.
- Policies that may relate to Sustainable Drainage Systems (SuDS).

If you have any queries, please do not hesitate to get in touch.

We are, of course, happy to pay your reasonable charge for this service. Please let me know by return what information is available, what the charge will be, and we will pay the relevant fees by debit card as soon as possible.

Any advice or recommendations you may have regarding the potential discharges from the development of this site would also be appreciated.

We will be in contact with all other relevant authorities to get a more complete understanding of the issues in the area.

Regards,
Jenna



Jenna Lowe MSc, BSc. (Hons)
Flood Risk Engineer
0161 763 7200 | 07467 957756
Manchester | London | Swindon | Liverpool | Glasgow
www.thelkgroup.com

I N C R E A S I N G L A N D V A L U E



Appendix F – Drainage Strategy Drawings

GENERAL NOTES

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
- ALL LEVELS ARE IN METRES, RELATIVE TO ORDNANCE DATUM SURVEY *GPS OSTN02 DATUM*.
- SURVEY GRID IS BASED ON NATIONAL GRID COORDINATES, SURVEY INFORMATION SUPPLIED BY 'FRED BLOGS SURVEYS'.
- ALL DIMENSIONS TO BE CHECKED ON SITE BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ENGINEER IMMEDIATELY.
- THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S, ENGINEER'S AND SPECIALIST'S DRAWINGS TOGETHER WITH THEIR SPECIFICATIONS.
- DO NOT SCALE FROM THIS DRAWING. ONLY WRITTEN OR CALCULATED DIMENSIONS TO BE USED.
- IF SPECIFIED ITEMS ARE REPLACED WITH SIMILAR ITEMS THE RELEVANT DOCUMENTATION/CALCULATIONS SHOULD BE SUBMITTED TO WESTLAKES ENGINEERING TO DEMONSTRATE THEIR SUITABILITY. ONLY WHEN APPROVAL IS RECEIVED CAN THAT ITEM BE USED.
- FOR BUILDING SET-OUT COORDINATES REFER TO ARCHITECT'S DRAWINGS.

LEGEND

- PROPOSED SURFACE WATER CHAMBER
- PROPOSED SURFACE WATER PIPE SYSTEM INCLUDING INDICATIVE GRADIENTS
- BIO-RETENTION AREA
- PERMEABLE PAVING
- CELLULAR ATTENUATION TANK



P1	24.01.23	ISSUED FOR PRELIMINARY INFORMATION	EZ	GE	CP
Rev	Date	Revision Details	By	Chkd	Appd



Westlakes Engineering

Client	PAUL COOK DEVELOPMENTS Ltd				
Project	STATION WORKS RADCLIFFE				
Title	INDICATIVE DRAINAGE ARRANGEMENT				
Drawing No.	WL_2226_001	Revision	P1		
Scale	1:200	Date	JAN 2023		
Drawn	EZ	Chk	GE	App	CP
Unit 2.1, 20 Dale Street, Manchester. M1 1EZ					
Tel. 0161 236 8203					



Appendix G – Microdrainage Modelling Calculations

Westlakes Engineering Ltd		Page 1
20 Dale Street Manchester M1 1EZ		
Date 24/01/2023 09:52 File Drainage Design 24.01.2...	Designed by Eleni.Zachara Checked by	
Innovyze	Network 2020.1.3	

Online Controls for Storm

Hydro-Brake® Optimum Manhole: SMH2, DS/PN: 1.001, Volume (m³): 2.8

Unit Reference	MD-SHE-0115-6000-1000-6000
Design Head (m)	1.000
Design Flow (l/s)	6.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	115
Invert Level (m)	68.305
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.000	6.0
Flush-Flo™	0.298	6.0
Kick-Flo®	0.647	4.9
Mean Flow over Head Range	-	5.2

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	4.0	1.200	6.5	3.000	10.0	7.000	15.0
0.200	5.8	1.400	7.0	3.500	10.8	7.500	15.5
0.300	6.0	1.600	7.5	4.000	11.5	8.000	16.0
0.400	5.9	1.800	7.9	4.500	12.2	8.500	16.5
0.500	5.7	2.000	8.3	5.000	12.8	9.000	17.0
0.600	5.3	2.200	8.7	5.500	13.4	9.500	17.4
0.800	5.4	2.400	9.0	6.000	14.0		
1.000	6.0	2.600	9.4	6.500	14.5		

Hydro-Brake® Optimum Manhole: SMH6 FLOW CONTROL, DS/PN: 1.005, Volume (m³):

5.1

Unit Reference	MD-SHE-0101-4800-1200-4800
Design Head (m)	1.200
Design Flow (l/s)	4.8
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	101
Invert Level (m)	67.932
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Westlakes Engineering Ltd		Page 3																																																						
20 Dale Street Manchester M1 1EZ																																																								
Date 24/01/2023 09:52 File Drainage Design 24.01.2...	Designed by Eleni.Zachara Checked by																																																							
Innovyze	Network 2020.1.3																																																							
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<u>Cellular Storage Manhole: Attenuation Tank , DS/PN: 2.004</u>																																																								
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0.400	40.3	30.680	1.200	56.5	33.960																																																			
0.600	40.3	30.680																																																						
<u>Bio-Retention Area Manhole: BIO AREA, DS/PN: 1.004</u>																																																								
Invert Level (m) 67.962 Infiltration Coefficient Side (m/hr) 0.00000 Porosity 1.00 Safety Factor 2.0 Infiltration Coefficient Base (m/hr) 0.00000																																																								
<table><tr><th>Depth (m)</th><th>Area (m²)</th><th>Perimeter (m)</th><th>Depth (m)</th><th>Area (m²)</th><th>Perimeter (m)</th></tr><tr><td>0.000</td><td>20.2</td><td>17.420</td><td>0.800</td><td>20.2</td><td>17.420</td></tr><tr><td>0.100</td><td>20.2</td><td>17.420</td><td>0.900</td><td>20.2</td><td>17.420</td></tr><tr><td>0.200</td><td>20.2</td><td>17.420</td><td>1.000</td><td>20.2</td><td>17.420</td></tr><tr><td>0.300</td><td>20.2</td><td>17.420</td><td>1.100</td><td>29.6</td><td>20.560</td></tr><tr><td>0.400</td><td>20.2</td><td>17.420</td><td>1.200</td><td>29.6</td><td>20.560</td></tr><tr><td>0.500</td><td>20.2</td><td>17.420</td><td>1.300</td><td>29.6</td><td>20.560</td></tr><tr><td>0.600</td><td>20.2</td><td>17.420</td><td>1.400</td><td>29.6</td><td>20.560</td></tr><tr><td>0.700</td><td>20.2</td><td>17.420</td><td>1.500</td><td>29.6</td><td>20.560</td></tr></table>			Depth (m)	Area (m²)	Perimeter (m)	Depth (m)	Area (m²)	Perimeter (m)	0.000	20.2	17.420	0.800	20.2	17.420	0.100	20.2	17.420	0.900	20.2	17.420	0.200	20.2	17.420	1.000	20.2	17.420	0.300	20.2	17.420	1.100	29.6	20.560	0.400	20.2	17.420	1.200	29.6	20.560	0.500	20.2	17.420	1.300	29.6	20.560	0.600	20.2	17.420	1.400	29.6	20.560	0.700	20.2	17.420	1.500	29.6	20.560
Depth (m)	Area (m²)	Perimeter (m)	Depth (m)	Area (m²)	Perimeter (m)																																																			
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Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor 1.000

Additional Flow - % of Total Flow 0.000

Hot Start (mins) 0

MADD Factor * 10m³/ha Storage 2.000

Hot Start Level (mm) 0

Inlet Coefficient 0.800

Manhole Headloss Coeff (Global) 0.500

Flow per Person per Day (l/per/day) 0.000

Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0

Number of Storage Structures 3

Number of Online Controls 2

Number of Time/Area Diagrams 0

Number of Offline Controls 0

Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR

Ratio R 0.312

Region England and Wales Cv (Summer) 0.750

M5-60 (mm) 19.000 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0

DVD Status ON

Analysis Timestep Fine

Inertia Status ON

DTS Status ON

Profile(s) Summer and Winter

Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360

Return Period(s) (years) 1, 30, 100

Climate Change (%) 0, 40, 45

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow
1.000	SMH1	240 Winter	100	+45%	30/15 Summer		
2.000	SPPIC1	240 Winter	100	+45%	100/120 Winter		
2.001	SPPIC2	240 Winter	100	+45%	100/120 Winter		
2.002	SPPIC3	240 Winter	100	+45%	100/120 Summer		
2.003	PERM PAVE START SPPIC4	240 Winter	100	+45%	30/30 Winter		
2.004	Attenuation Tank	240 Winter	100	+45%	30/30 Summer		
2.005	PERM PAVE END SPPIC5	240 Winter	100	+45%	30/15 Summer		
1.001	SMH2	240 Winter	100	+45%	30/15 Summer		
3.000	BIO AREA 1	240 Winter	100	+45%	30/15 Summer		
3.001	SMH4	360 Winter	100	+45%	30/15 Winter		
1.002	SMH3	360 Winter	100	+45%	30/15 Winter		
4.000	SMH8	360 Winter	100	+45%	30/15 Summer		
4.001	SMH7	360 Winter	100	+45%	30/15 Winter		
1.003	SMH5	360 Winter	100	+45%	30/15 Summer		
1.004	BIO AREA	360 Winter	100	+45%	30/15 Summer		
1.005	SMH6 FLOW CONTROL	360 Winter	100	+45%	1/15 Summer		

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Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Water Surcharged Flooded					Flow / Cap.	Overflow (l/s)
		Overflow Act.	Level (m)	Depth (m)	Volume (m³)			
1.000	SMH1		69.469	0.909	0.000		0.25	
2.000	SPPIC1		69.472	0.172	0.000		0.06	
2.001	SPPIC2		69.472	0.240	0.000		0.12	
2.002	SPPIC3		69.471	0.307	0.000		0.21	
2.003	PERM PAVE START SPPIC4		69.470	0.745	0.000		0.17	
2.004	Attenuation Tank		69.469	0.844	0.000		0.11	
2.005	PERM PAVE END SPPIC5		69.468	0.893	0.000		0.09	
1.001	SMH2		69.467	0.937	0.000		0.10	
3.000	BIO AREA 1		69.414	0.836	0.000		0.17	
3.001	SMH4		69.418	0.765	0.000		0.04	
1.002	SMH3		69.427	0.729	0.000		0.03	
4.000	SMH8		69.420	0.839	0.000		0.04	
4.001	SMH7		69.418	0.739	0.000		0.03	
1.003	SMH5		69.418	0.867	0.000		0.04	
1.004	BIO AREA		69.415	1.003	0.000		0.07	
1.005	SMH6 FLOW CONTROL		69.511	1.429	0.000		0.45	

PN	US/MH Name	Half Drain Pipe				Level Exceeded
		Time (mins)	Flow (l/s)	Status		
1.000	SMH1		3.0	FLOOD RISK		
2.000	SPPIC1		0.9	SURCHARGED		
2.001	SPPIC2		1.6	SURCHARGED		
2.002	SPPIC3		3.1	SURCHARGED		
2.003	PERM PAVE START SPPIC4		4.8	FLOOD RISK		
2.004	Attenuation Tank		2.6	FLOOD RISK		
2.005	PERM PAVE END SPPIC5		2.6	FLOOD RISK		
1.001	SMH2		3.2	FLOOD RISK		
3.000	BIO AREA 1		2.5	FLOOD RISK		
3.001	SMH4		2.9	FLOOD RISK		
1.002	SMH3		5.9	FLOOD RISK		
4.000	SMH8		2.7	SURCHARGED		
4.001	SMH7		5.7	FLOOD RISK		
1.003	SMH5		8.5	FLOOD RISK		
1.004	BIO AREA		9.2	FLOOD RISK		
1.005	SMH6 FLOW CONTROL		5.0	FLOOD RISK		