

From: laura.peacock@manchester.gov.uk <laura.peacock@manchester.gov.uk> **On Behalf Of**
floodriskmanagement@manchester.gov.uk
Sent: 23 October 2020 17:04
To: McGlacken, Jordan <Jordan.McGlacken@wsp.com>
Cc: Mostyn, Stephen <Stephen.Mostyn@wsp.com>
Subject: RE: Phoenix Works, Ellesmere Street

Jordan,

Many thanks - I can confirm the zipped shapefile has worked.

With regards to your enquiry points 1) and 2):

For the shapefile received as 'PhoenixWorks_RLB':

1) Inform us of any relevant flood information (e.g. any historical flooding records) within the vicinity of the site that MCC are aware of.

- Within a 100m buffer of the provided site outline, we hold one recorded flood incident ('blocked gully or drain' reported 2012, at the junction of Hulme Hall Road and Ellesmere Street, co-ordinates: 2°15'43.094"W 53°28'15.63"N).

2. Provide us with any information/records of existing council owned highways drains / culverted watercourses in the vicinity of the site.

- Within a 100m buffer of the provided site outline, we hold no records of culverted watercourses. This should be verified by a competent site investigation.

- Sewers / Highway Drains are the responsibility of United Utilities / the Highway Authority; as such these are beyond our remit as the LLFA, and we would recommend you consult the relevant bodies for records.

We look forward to reviewing your application in due course.

Kind Regards,
Laura

Flood Risk Management
Highways Service, Growth and Neighbourhoods Directorate
Manchester City Council
Tel: 0161 219 6295
Email: floodriskmanagement@manchester.gov.uk
Web: <http://www.manchester.gov.uk/>

POSTAL ADDRESS: Manchester City Council, Public Realm, The Neighbourhood Service, PO Box 532, Town Hall, Manchester M60 2LA

From: "McGlacken, Jordan" <Jordan.McGlacken@wsp.com>
To: "floodriskmanagement@manchester.gov.uk" <floodriskmanagement@manchester.gov.uk>,
Cc: "Mostyn, Stephen" <Stephen.Mostyn@wsp.com>
Date: 23/10/2020 15:45
Subject: RE: Phoenix Works, Ellesmere Street

Hi Laura,

How's the attached?

With regards,

Jordan McGlacken *MEng (Hons)*

Assistant Engineer

ACE Emerging Professionals Regional Chair



T +44 (0)161 602 8845

WSP
8 First Street
Manchester
M15 4RP

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From: laura.peacock@manchester.gov.uk <laura.peacock@manchester.gov.uk> **On Behalf Of**
floodriskmanagement@manchester.gov.uk

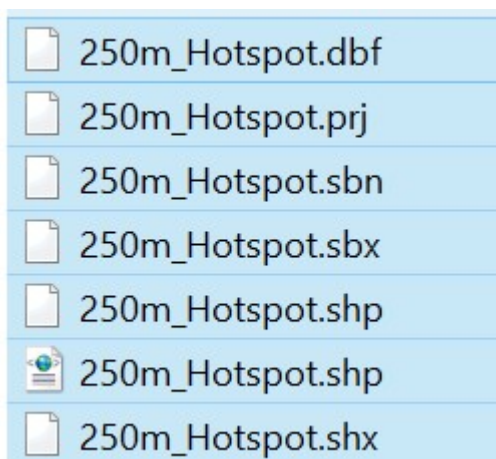
Sent: 23 October 2020 14:36

To: McGlacken, Jordan <Jordan.McGlacken@wsp.com>

Subject: RE: Phoenix Works, Ellesmere Street

Jordan,

Thank you for your response and providing the GIS format, unfortunately it appears that only the .shx file has been transmitted in the email. I would suggest putting the shapefile in a zipped folder to ensure all the individual components required are transmitted by the email. An example is below:



Many Thanks,

Laura

Flood Risk Management

Highways Service, Growth and Neighbourhoods Directorate

Manchester City Council

Tel: 0161 219 6295

Email: floodriskmanagement@manchester.gov.uk

Web: <http://www.manchester.gov.uk/>

POSTAL ADDRESS: Manchester City Council, Public Realm, The Neighbourhood Service, PO Box 532, Town Hall, Manchester M60 2LA

From: "McGlacken, Jordan" <Jordan.McGlacken@wsp.com>
To: "floodriskmanagement@manchester.gov.uk" <floodriskmanagement@manchester.gov.uk>,
Cc: "Mostyn, Stephen" <Stephen.Mostyn@wsp.com>
Date: 23/10/2020 13:37
Subject: RE: Phoenix Works, Ellesmere Street

Afternoon Laura,

Thanks for coming back to us on this.

Please find attached shapefile (shx.) of the site boundary for GIS database interrogation – let me know if you require this in an alternative format.

We are looking to finalise the FRA & Drainage Strategy by next Friday (end of October) so a response before then would be hugely appreciated.

With regards,

Jordan McGlacken *MEng (Hons)*

Assistant Engineer
ACE Emerging Professionals Regional Chair



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From: laura.peacock@manchester.gov.uk <laura.peacock@manchester.gov.uk> **On Behalf Of**
floodriskmanagement@manchester.gov.uk

Sent: 23 October 2020 12:44

To: McGlacken, Jordan <Jordan.McGlacken@wsp.com>

Cc: Mostyn, Stephen <Stephen.Mostyn@wsp.com>

Subject: Re: Phoenix Works, Ellesmere Street

Jordan,

Thank you for your enquiry dated 15th October 2020.

1) & 2): Please provide a shapefile of the site boundary (BNG projection) for us to accurately interrogate our GIS database.

3) For Brownfield sites, we expect the following in line with LFRM Policy 6: A 50% runoff rate reduction for Brownfield sites, with an aim of reducing runoff to Greenfield rates up to a 1 in 100 year storm event, including consideration of climate change.

The applicant is recommended to undertake an extensive review of national and local policy before devising their proposed drainage strategy and submitting their application. We highlight the following:

In line with national best-practice, we expect to see the Drainage Hierarchy competently addressed. Proven inability to discharge via a certain mechanism is required prior to moving down the Hierarchy.

In line with Core Strategy Policies EN 9 and EN 14, and the Manchester Green and Blue Infrastructure strategy 2015 - 2025, we expect to see maximised use of Sustainable Drainage Systems (SUDS) and the appropriate use of Green Infrastructure. Emphasis is placed on maximising Green SuDS solutions.

Kind Regards,
Laura
Flood Risk Management
Highways Service, Growth and Neighbourhoods Directorate
Manchester City Council
Tel: 0161 219 6295
Email: floodriskmanagement@manchester.gov.uk
Web: <http://www.manchester.gov.uk/>

POSTAL ADDRESS: Manchester City Council, Public Realm, The Neighbourhood Service, PO Box 532, Town Hall, Manchester M60 2LA

From: "McGlacken, Jordan" <Jordan.McGlacken@wsp.com>
To: "floodriskmanagement@manchester.gov.uk" <floodriskmanagement@manchester.gov.uk>,
Cc: "Mostyn, Stephen" <Stephen.Mostyn@wsp.com>
Date: 15/10/2020 09:52
Subject: Phoenix Works, Ellesmere Street

Dear Manchester City Council Flood Risk Team,

WSP have been commissioned to undertake a flood risk assessment and drainage strategy for a 0.5 hectare residential-led development on a brownfield site known as Phoenix Works, Ellesmere Street, Manchester. (site location plan attached)

We would appreciate if Manchester City Council can provide their advice on the following:

1. Inform us of any relevant flood information (e.g. any historical flooding records) within the vicinity of the site that MCC are aware of.
2. Provide us with any information/records of existing council owned highways drains / culverted watercourses in the vicinity of the site.
3. Confirm whether surface water should be discharged at brownfield runoff rates with a 50% reduction or at greenfield runoff?

If any more information is required, please do not hesitate to get in touch.

With regards,

Jordan McGlacken MEng (Hons)
Assistant Engineer
ACE Emerging Professionals Regional Chair



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Manchester
M15 4RP

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-LAEmHhHzdJzBITWfa4Hgs7pbKI

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*****[attachment "Phoenix Works - Site Boundary Shapefile.shx" deleted by Laura Peacock/Chief.Executives/MCC]

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This footnote also confirms that this email message has been swept for the presence of computer viruses.

McGlacken, Jordan

From: Wastewater Developer Services <WastewaterDeveloperServices@uuplc.co.uk>
Sent: 26 October 2020 16:44
To: McGlacken, Jordan
Cc: Mostyn, Stephen; Wastewater Developer Services
Subject: PDE 4200034273 Phoenix Works Ellesmere Street Hulme Manchester M15 4JY
Attachments: Pre-Development Enquiry - Phoenix Works, Ellesmere Street

Good afternoon Jordan,

Pre Development Enquiry for: Phoenix Works Ellesmere Street Hulme Manchester M15 4JY UU Reference Number : 4200034273

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 3723223 or refer to the link below:

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

I can confirm that we have no current record of sewer flooding on our DG5 register within the vicinity of the proposed development. The DG5 register is a register of properties that have flooded as a result of hydraulic inadequacy of the public sewer network.

Please note that United Utilities Water Limited (Uuw) can only record and check flooding events which are reported to us and we have to comply with our Regulators instructions on the qualification of flooding events to place on the register.

Our response does not include:

- *any sewer flooding events caused by blockages or collapses which are the result of third party actions, natural events or other actions over which Uuw has no control and not a facet of sewer capacity; or*
- *any historical sewer flooding events that have been removed from the register as a result of investment in our infrastructure. <https://uusp/asset/DSDD/Development Documents/Manchester/Pre Enquiry/2020/4200034273 Phoenix Works Ellesmere Street Hulme Manchester M15 4JY/Pre-Dev/initial pre-development.msg>*

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 520mm diameter public combined sewer within Ellesmere Street located to the North 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.

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

It is acknowledged by United Utilities that there are no waterbodies within the vicinity of the site for surface water runoff to discharge to.

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

In accordance with the hierarchy of drainage options within the National Planning Practice Guidance, both discharge to ground via infiltration and discharge to a waterbody should be discounted prior to consideration of discharging surface water to the public sewer system. Evidence should be provided to demonstrate how these have been discounted, as outlined in the North West SuDS pro-forma.

Once evidence is provided as outlined above, United Utilities will consider a connection to the 525mm diameter public combined sewer within Ellesmere Street located North of the proposed site at a pass forward flow to be agreed by the Lead Local Flood Authority. United Utilities request that any agreed rate does not exceed 5l/s.

As a Water Company, we have no obligation to accept highway drainage into our public sewer network. However, should your proposals include runoff from highways, we would request that consideration is given to SuDS components that deliver source control are incorporated within the design of the scheme to reduce the volume and frequency of discharges of these flows to the public sewer.

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

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/larger-developments/wastewater/sewer-connections/>

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.

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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

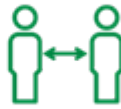
Coronavirus | Prevent the spread



Wash your
hands



Disinfect
common surfaces



Practise social
distancing



FEVER +
COUGH

Stay home if you
have symptoms

[Click for our message to customers](#)

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Wastewater pre-development enquiry

Please complete this form for enquiring about drainage strategies and points of connection for new developments.

You can fill in this form, just save a copy, complete it and email it to **WastewaterDeveloperServices@uuplc.co.uk** alternatively you can print the form and post it to us at this address **United Utilities Developer Services, Second Floor, Grasmere House, Lingley Mere Business Park, Lingley Green Avenue, Great Sankey, Warrington, WA5 3LP**

All fields are required unless otherwise stated. Please note incomplete information may cause delays to your application. When answering the yes/no questions please tick in the appropriate box. Please keep a copy of the completed application for your records.

If you need any help completing the form please call us on **0345 072 6067** and we'll be happy to help.

We aim to respond to enquiries within 15 working days from receipt of your completed enquiry form.

Section 1: Your details			
Are you (please tick)	Developer ☐ Consultant ☒ Land owner ☐ Other (please state) ☐		
Name	Jordan McGlacken		
Company Name (if applicable)	WSP		
Address (including post code)	8 First Street Manchester M15 4RP		
Telephone number	01616028845		
Email address	jordan.mcglacken@wsp.com		
Section 2: Development details			
Do you intend to offer any of the sewers for adoption by United Utilities under S104?			Yes ☐ No ☒
Please provide as much of the site address that is available. This address must contain a road name, town/city.			
Address (including nearest postcode)	Phoenix Works Ellesmere Street Hulme Manchester M15 4JY		
Site name	Phoenix Works		
The grid reference is a 12 digit grid reference split into two 6 digit numbers (X and Y).			
Grid reference number			
Development type	Commercial ☐ Residential ☒		
Approx. number units			
Total site area (hectares)	0.5		
Does this site have planning permission?			Yes ☐ No ☒
Planning reference number			
Council area	Manchester City Council		
Have you approached us about this site previously?	Yes ☐ No ☒	If yes, please provide reference number	
Is the development part of a larger site that will be developed in phases?			Yes ☐ No ☒

Section 3: Previous land use

Please confirm what the land was previously used for and provide the following information:

Greenfield	☐	Brownfield (the site must have drained to the sewer network and incurred charges within the last 12 months)	☐
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Section 4: Drainage strategy

Foul connection: How are you proposing to drain foul flows from the site?

Via an existing connection to the public sewer?	☐	Via a new connection to the public sewer?	☒
---	--------------------------	---	-------------------------------------

Do your drainage proposals involve pumping to the public sewer network?	Yes ☐ No ☒
---	---

Surface water connection: How are you proposing to drain your site, following the surface water hierarchy, as outlined in National Planning Policy Guidance? Please indicate below and provide evidence to support your strategy

Infiltration ☐	Surface water body ☐	Surface water sewer/Highway Drain ☐	Combined sewer ☒
---------------------------------------	---	--	--

SuDS: Have SuDS features been considered in the surface water drainage strategy?	Yes ☒ No ☐
---	---

Section 5: Supporting Information

Please confirm that the following list of information has been provided to support with your enquiry:

• Site location plan including site boundary and road/street names	Yes ☒ No ☐
• Preferred drainage outfall route(s) and point(s) of access etc.	Yes ☒ No ☐
• Topographical survey	Yes ☐ No ☒
• Ground investigation report	Yes ☐ No ☒
• Evidence of existing drainage connections and estimated rates of discharge (for Brownfield sites)	Yes ☐ N/A ☐
• Full calculations to show pre-development surface water rates for Greenfield sites	Yes ☐ N/A ☐

Section 6 : Declaration

I understand that the submission of this form is to be treated as a preliminary enquiry and the information may be subject to change. In particular, I understand that the information United Utilities Water Limited provides in response is only valid in conjunction with the information provided in relation to this enquiry, any changes to regulation or development layout will invalidate our response.

Signature	McGlacken, Jordan (UKJAG005) Digitally signed by McGlacken, Jordan (UKJAG005) DN: cn=McGlacken, Jordan (UKJAG005), ou=Manchester (First Street), email=Jordan.McGlacken@wsp.com Reason: I am the author of this document Date: 2020.11.25 09:29:53 Z	Date	
Print Name		Position	



About us

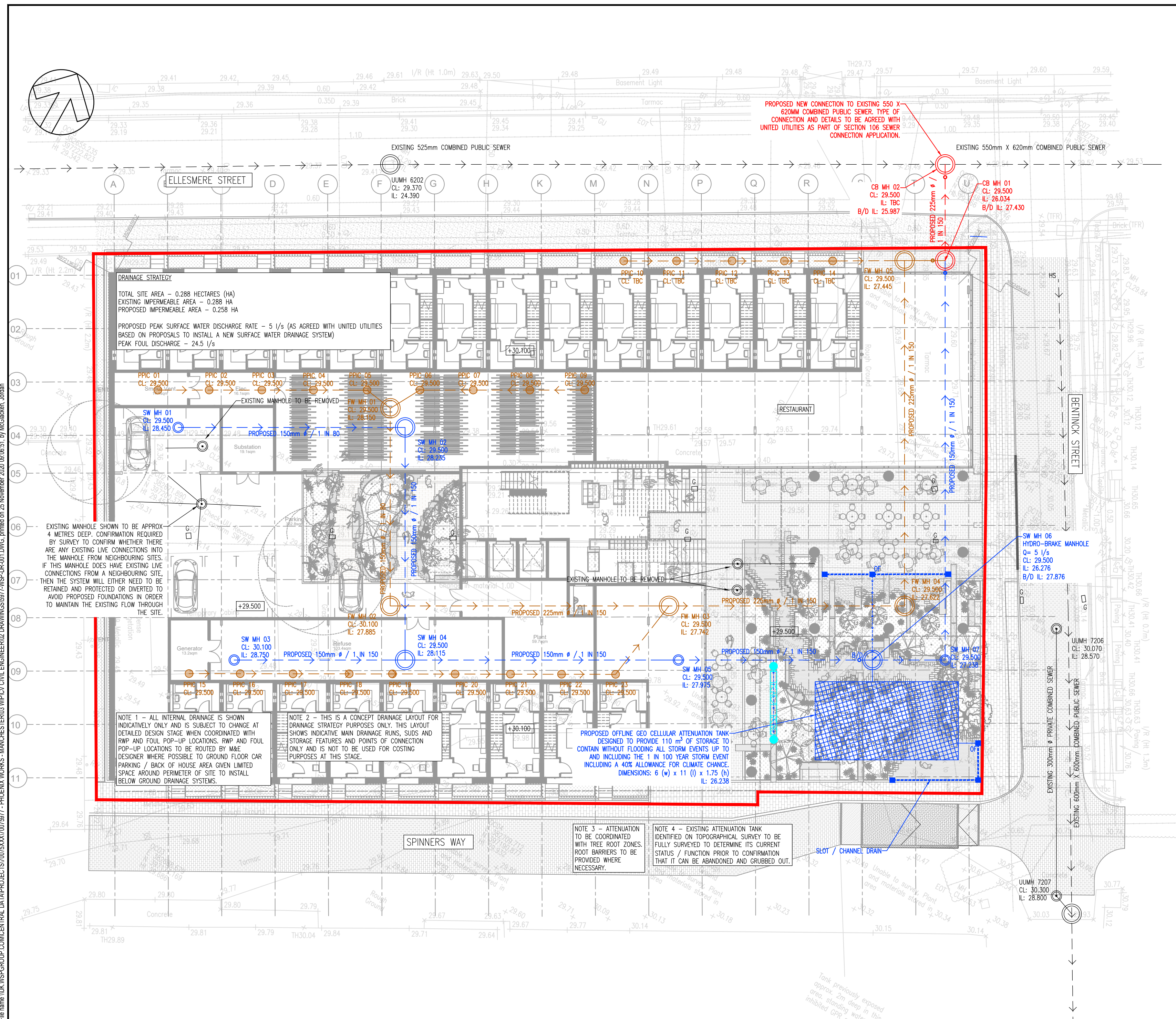
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United Utilities Water Limited, Haweswater House, Lingley Mere Business Park, Lingley Green Avenue, Warrington WA5 3LP.
Registered in England and Wales. Registered Number 2366678.

Appendix F

DRAINAGE STRATEGY

wsp



DO NOT SCALE

- | | |
|---|--------------------------------|
|  | SITE BOUNDARY |
|  | EXISTING COMBINED PUBLIC SEWER |
|  | EXISTING PUBLIC SEWER MANHOLE |
|  | EXISTING PRIVATE DRAIN |
|  | EXISTING PRIVATE MANHOLE |
|  | EXISTING GULLY |
|  | PROPOSED SURFACE WATER DRAIN |
|  | PROPOSED SURFACE WATER MANHOLE |
|  | PROPOSED BACK-DROP |
|  | PROPOSED FOUL WATER DRAIN |
|  | PROPOSED FOUL WATER MANHOLE |
|  | PROPOSED PPIC |
|  | PROPOSED COMBINED LATERAL |
|  | PROPOSED COMBINED MANHOLE |
|  | PROPOSED FILTER DRAIN |
|  | PROPOSED CATCHPIT |
|  | PROPOSED ATTENUATION TANK |
|  | DIRECTION OF FALL |

P02	25/11/2020	JAM	UPDATE WITH LANDSCAPE PROPOSALS	SM	SM
P01	30/10/2020	JAM	FIRST ISSUE	SM	SM
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS:

S2 - FOR INFORMATION



8 First Street, Manchester, M15 4GU, UK
T+ 44 (0) 161 200 5000
wsp.com

CLIENT:

DETRAFFORD

ARCHITECT:

CORSTORPHINE & WRIGHT

PROJECT:

PHOENIX WORKS

TITLE:

PROPOSED DRAINAGE STRATEGY

SCALE @ A2: 1:200	CHECKED: SM		APPROVED: SM
PROJECT No: 70075977	DESIGNED: JAM	DRAWN: JAM	DATE: November 20

DRAWING No:

5977-WSP-DR-001

P02

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Appendix G

STORAGE CALCULATIONS

WSP

WSP Group Ltd		Page 1
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Date 19/10/2020 14:55	Designed by UKJAG005	
File	Checked by	
XP Solutions	Source Control 2019.1	
ICP SUDS Mean Annual Flood Input Return Period (years) 100 Soil 0.450 Area (ha) 0.288 Urban 0.000 SAAR (mm) 874 Region Number Region 10 Results 1/s QBAR Rural 1.6 QBAR Urban 1.6 Q100 years 3.4 Q1 year 1.4 Q30 years 2.8 Q100 years 3.4		
©1982-2019 Innovyze		

WSP Group Ltd		Page 3
. . .		
Date 25/11/2020 07:16	Designed by UKJAG005	
File ATTENUATION REQUIREMENT...	Checked by	
XP Solutions		Source Control 2019.1

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)	18.000	Shortest Storm (mins)	15
Ratio R	0.366	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.258

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From: To:	(ha)	From: To:	(ha)	From: To:	(ha)
0 4	0.086	4 8	0.086	8 12	0.086

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. . .		
Date 25/11/2020 07:16	Designed by UKJAG005	
File ATTENUATION REQUIREMENT...	Checked by	
XP Solutions		Source Control 2019.1

Model Details

Storage is Online Cover Level (m) 29.500

Cellular Storage Structure

Invert Level (m) 26.238 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	66.0	0.0	1.751	0.0	0.0
1.750	66.0	0.0			

Hydro-Brake® Optimum Outflow Control

Unit Reference MD-SHE-0095-5000-1750-5000
 Design Head (m) 1.750
 Design Flow (l/s) 5.0
 Flush-Flo™ Calculated
 Objective Minimise upstream storage
 Application Surface
 Sump Available Yes
 Diameter (mm) 95
 Invert Level (m) 26.238
 Minimum Outlet Pipe Diameter (mm) 150
 Suggested Manhole Diameter (mm) 1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.750	5.0
Flush-Flo™	0.415	4.5
Kick-Flo®	0.847	3.6
Mean Flow over Head Range	-	4.1

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	3.0	1.200	4.2	3.000	6.4	7.000	9.6
0.200	4.1	1.400	4.5	3.500	6.9	7.500	9.9
0.300	4.4	1.600	4.8	4.000	7.4	8.000	10.2
0.400	4.5	1.800	5.1	4.500	7.8	8.500	10.5
0.500	4.4	2.000	5.3	5.000	8.2	9.000	10.8
0.600	4.3	2.200	5.6	5.500	8.6	9.500	11.1
0.800	3.8	2.400	5.8	6.000	8.9		
1.000	3.9	2.600	6.0	6.500	9.3		

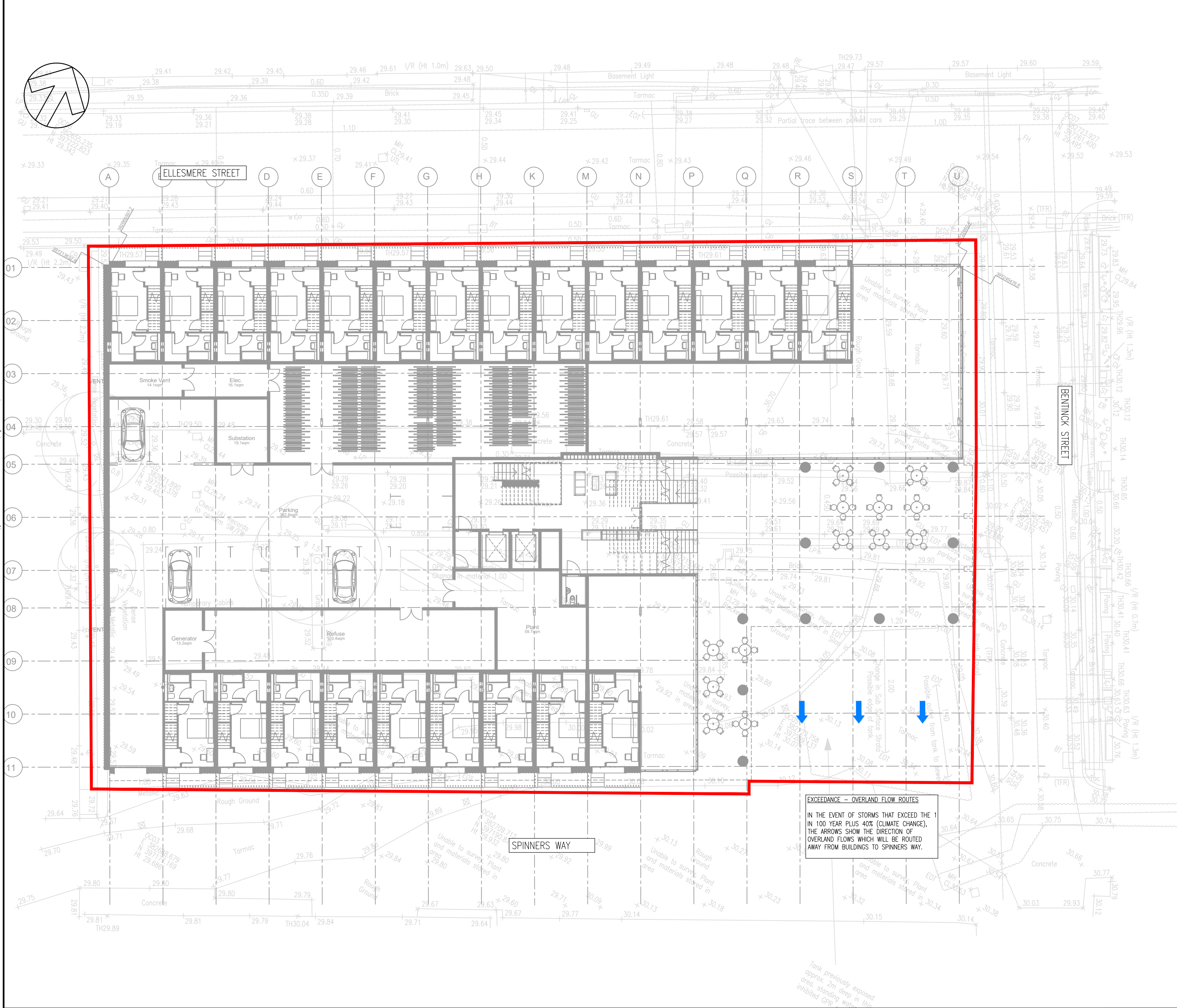
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Appendix H

OVERLAND FLOW ROUTEING PLAN



File name I:\UK\WSPGROUP\COMCENTRAL\DATA\PROJECTS\70075XXX\7007597 - PHOENIX WORKS - MANCHESTER\03\WPCV\WPCV CIVIL ENGINEER\02 DRAWINGS\5977-WSP-DR-002.DWG, printed on 28 October 2020 13:49:07 by McGlecken, Jordan



EXCEEDANCE - OVERLAND FLOW ROUTES
IN THE EVENT OF STORMS THAT EXCEED THE 1 IN 100 YEAR PLUS 40% (CLIMATE CHANGE), THE ARROWS SHOW THE DIRECTION OF OVERLAND FLOWS WHICH WILL BE ROUTED AWAY FROM BUILDINGS TO SPINNERS WAY.

DO NOT SCALE

- KEY
- SITE BOUNDARY
 - OVERLAND SURFACE WATER FLOW ROUTE

P01	30/10/2020	JAM	FIRST ISSUE	SM	SM
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS:	S2 - FOR INFORMATION
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wsp.com

CLIENT:	DETRAFFORD
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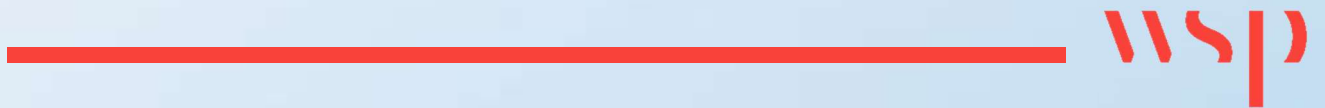
ARCHITECT:	CORSTORPHINE & WRIGHT
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PROJECT:	PHOENIX WORKS
TITLE:	EXCEEDANCE - OVERLAND FLOW ROUTES

SCALE @ A2:	1:200	CHECKED:	SM	APPROVED:	SM
PROJECT No:	70075977	DESIGNED:	JAM	DRAWN:	JAM
DRAWING No:	5977-WSP-DR-002	DATE:	October 20	REV:	P01
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Appendix I

DRAINAGE INSPECTION AND MAINTENANCE SCHEDULE





PHOENIX WORKS - DRAINAGE INSPECTION & MAINTENANCE SCHEDULE

Maintenance Schedule	Required Action	Typical Frequency
Below Ground Drainage Pipes, Manholes, etc		
Regular maintenance	Lift covers and inspect manholes for evidence of debris and silt deposits and evidence of blockages (standing water). Carry out CCTV survey if required	Quarterly
Remedial actions	High pressure jetting and/or remove minor blockages and silt build up	As required – 20% loss of pipe cross-section
	Replace broken access covers, remove major blockages, repair structurally defective pipework	As required
Flow Control Chamber		
Regular maintenance	Lift covers and inspect chamber for evidence of debris and silt deposits and evidence of blockages. Test bypass door operating correctly.	Quarterly
Remedial actions	Replace broken access covers, remove major blockages, repair/replace defective flow control devices	As required
	High pressure jetting and/or remove minor blockages and silt build up	As required
Linear Channel Drains and Gullies		
Regular maintenance	Lift access covers and inspect for silt/debris accumulation	Quarterly
Remedial actions	High pressure jetting and or remove minor blockages and silt build up	As required
	Replace broken access covers, gratings	As required
Rainwater Pipes		
Regular maintenance	Inspect rainwater goods for evidence of leaking pipework	Quarterly
Occasional maintenance	Remove rodding eyes and carry out high pressure jetting to remove any debris	Annually
Remedial actions	Replace cracked/leaking pipework	As required
Filter Drains		
Regular maintenance	Remove litter and debris from filter drain surface, access chambers and pre-treatment devices	Monthly (or as required)
	Inspect filter drain surface, inlet/outlet pipework and control systems for blockages, clogging, standing water and structural damage	Monthly
	Inspect pre-treatment systems, inlets and perforated pipework for silt accumulation, and establish appropriate silt removal frequencies	Six monthly
	Remove sediment from pre-treatment devices	Six monthly
Occasional maintenance	Remove or control tree roots where they are encroaching the sides of the filter drain using recommended methods (e.g. NJUG, 2007 or BS 3998:2010)	As required
	At locations with high pollution loads, remove surface geotextile and replace, and wash or replace overlying filter medium	Five yearly, or as required
	Clear perforated pipework of blockage	As required
Attenuation tank		
Regular maintenance	The majority of inspection and maintenance requirements are in the flow control downstream of the system.	See above
	Internal inspection and debris removal can be achieved via entry into the attenuation structure via manhole at basement level B1.	As required



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