



Site Specific Flood Risk Assessment
of
Proposed Development
Former Wheatfields Day Centre
Whitefield
Manchester M45 6DP

Client Name: Onword Homes
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SUTCLIFFE

Flood Risk Assessment

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1. Introduction

- 1.1 As part of the planning process it is necessary to prepare a site-specific flood risk assessment for the site at the site of the former Wheatfields Day Centre. The site area is approximately 10300m² and located in flood zone 1, as indicated on the Environment Agency flood maps.
- 1.2 The site is located in Whitfield, Manchester and is located within flood zone 1. However, as the site is greater than 1 Ha it requires a site-specific flood risk assessment.
- 1.3 The National Planning Policy Framework (NPPF) seeks to promote development in areas at low risk of flooding and to reduce the flood risk resulting from development. The purpose of this site-specific flood risk assessment is to demonstrate that the site falls within an area of low annual probability and assess the risk to the site from all sources of flooding. Where this cannot be achieved the flood risk assessment seeks to demonstrate that the site can be developed to reduce flood risk and its effect to life and property throughout the life time of the development.
- 1.4 Although PPS25 has been replaced by the National Planning Policy Framework (NPPF) the guidance remains relevant for assessing the flood risk to a site. In particular, Appendix C of the Planning Policy Statement 25 (PPS25) Practice Guide provides a proforma, for assessing flood risk which has been used as the basis of this report.

2. Development Description and Location

- 2.1 The proposed development involves the development of a site formally occupied by a day centre. It is proposed to construct 30 dwellings with associated car parking spaces and access road.
- 2.2 The site can be identified on a map by the following references.

Post code M45 6DP

Coordinates 381192 405724

Grid reference SD 811057
- 2.2 The site has an area of approximately 10,300m² (1.03Ha).
- 2.3 NPPF Technical Guide, Table 2, states that the development falls within the 'more vulnerable' risk classification. The 'more vulnerable' classification covers dwelling house etc. and is used during the sequential test to direct development to the appropriate flood risk zone, zone 1 as may be required.

- 2.4 The site is located in flood zone 1 and, therefore, does satisfy the requirements of the sequential test, the aim of which is to direct development to low risk flood areas, zone 1. A sequential test will not be required.

3. Definition of the Flood Hazard and Site Assessment

- 3.1 The NPPF outlines the forms of flooding that may affect development as fluvial (rivers), tidal, surface water, ground water, and infrastructure failure. From Figure 3.2. of PPS25: Development and Practice Guide identifies potential sources of flooding and will be discussed below

3.2 Sources of Flooding

3.2.1 Fluvial Flooding (River)

- 3.2.1.1 Rivers flood functional flood plains and during times of extreme rainfall events will flood areas beyond the functional flood plain. Over a period of time existing flood plains have been developed, causing a risk of flooding to property. The Environment agency have provided flood maps on their web site and an inspection of the flood maps indicate that the site is located in a flood zone 1, meaning the site has a less than 1 in 1000 annual probability of river or sea flooding.

- 3.2.1.2 As the site is located within a flood zone 1 it is not necessary to carry out a sequential test.

3.2.2 Surface Water

- 3.2.2.1 Sources of surface water flooding are typically sheet flow from adjacent land, surface flow caused by surcharged sewers or surface runoff that cannot be intercepted by existing drainage systems or other drainage methods, natural or manmade.

- 3.2.2.2 Information provided on the Environment Agency flood maps indicate that the site is at low risk from surface water flooding.

- 3.2.2.3 The extent of surface water flooding is from the west, flowing to the east, of the site, with a depth of below 300mm.

- 3.2.2.4 The source of surface water flooding cannot be prevented from entering the site during the development and must, therefore, be considered so as not to cause flooding of property or a danger to life should it occur during the lifetime of the development.

- 3.2.2.5 The proposed levels of the development will require consideration to ensure that, should surface water flooding occur, property will not be affected and that

the flows are directed safely around properties back to the route originally taken by the surface water flow.

3.2.3 Flooding from Groundwater

3.2.3.1 An intrusive ground investigation has been carried out and an inspection of the borehole logs and trial pit logs indicate water strikes at varying depths of 1.5m and 3.5m on 5 boreholes out of a total of 8 boreholes, suggesting that there is no consistent water table present within influence of the proposed development. The water strikes within the boreholes did not rise.

3.2.3.2 A review of borehole logs recorded on the British Geological Survey website was made. Nearby borehole logs do not indicate that there is a ground water table at or near to the surface.

3.2.3.3 Therefore, from the above the site is at low risk from groundwater flooding.

3.2.4 Flooding from Sewers

3.2.4.1 Flooding from the sewers occurs when surcharging during periods of excess flow breaks ground, typically at manholes or road gullies. The proposed development is not likely to increase the risk posed by sewer flooding as the surface water runoff, a primary cause of sewer surcharging, from the site is to be managed in accordance with the requirements of the NPPF. The surface water from the development will be discharged to the River Lune, via a network of new and existing drains / sewers.

3.2.4.2 There are no recorded incidences of sewer flooding for the site.

3.2.4.3 Therefore, from the above the site is at low risk from sewer flooding.

3.2.5 Flooding from Man Made structures

3.2.5.1 Flooding from canals and reservoirs need to be considered.

3.2.5.2 There are no canals in the vicinity of the site.

3.2.5.3 The site is not affected by potential flooding from reservoirs.

3.2.5.4 Therefore, from the above the site is not at risk of flooding from man-made structures.

4. **Probability, Sequential and Exception Test**

4.1 The site is located within flood zone 1.

4.2 As the development is located within flood zone 1 the sequential and exception tests are not required.

5. Climate Change

- 5.1 In 2018 the Environment Agency updated its advice in relation to climate change and its application in support of the NPPF.
- 5.2 The main risk from climate change is the projected increase in frequency of extreme rainfall events. These events will likely lead to short-term capacity exceedance of the gullies and roof outlets serving the site and surroundings.
- 5.3 The site is located within the North-West River Basin District and Sea Level Rise Boundaries.
- 5.4 The updated Environment Agency advice is to consider both the central and upper end climate change allowances to understand the range of impact of increased rainfall intensity. The total potential change in rainfall intensity anticipated over the design life of the development is 35% to 75% for the central and upper end estimates respectively.
- 5.5 These allowances must be considered in the design of the surface water management system for the proposed site.
- 5.6 The proposed development drainage and required attenuation will be designed to accommodate the increased runoff and building floor levels should be set to mitigate any residual risk from potential overland flow from any source.
- 5.7 The proposed drainage system should be designed for the central estimate (+35% rainfall intensity) and checked for sensitivity against the upper end estimate to assess any flooding consequences. If necessary, following the sensitivity check, additional storage should be introduced to mitigate potential flooding events.

6. Detailed Development Proposals

- 6.1 Details of the development layout are provided in Appendix A. The proposed development involves the construction of 30 dwellings with associated parking and access road. A separate drainage system is proposed for the site (surface water and foul drainage).
- 6.2 Two Infiltration tests have been carried out and neither returned an infiltration rate. The water level in both tests did not fall.
- 6.3 The existing development has been demolished and so no evidence of its drainage system was available to record. Therefore, the site is classified as a greenfield site.

- 6.4 The Lead Local Flood Authority (LLFA) require that surface water drainage discharges are reduced, with the aim of reducing, where practical, to greenfield runoff rates.
- 6.5 The LLFA standing advice is to prove that the existing drainage network carrying the surface water from the existing development is still functional and to then calculate the discharge of surface water from that drainage network for a 1 in 2-year critical rainfall event, for the existing development, and then reduce that discharge rate by 35% to obtain the allowable / acceptable surface water discharge rate. If this cannot be demonstrated then greenfield runoff discharge rates should be used in the surface water drainage system for the new development. If this rate falls below 5 l/s then the surface water discharge rate may default to 5 l/s to ensure that any flow controls remain effective throughout the lifetime of the development, and can be effectively managed / maintained, in accordance with advice provided by the Defra / Environment Agency's report "Rainfall runoff management for developments" (Report SC030219)
- 6.6 The greenfield runoff rate for the site has been calculated as being $Q_{bar} = 6.4$ l/s.
- 6.7 United utilities have been consulted and stated that we should, in the first instance look to manage surface water runoff using the hierarchy of infiltration down to discharge to combined sewer. If a discharge to a sewer is required then United Utilities have stated that we can have a maximum allowable discharge rate of 6.4 l/s, equivalent to Q_{bar} runoff rate.
- 6.8 As there is no evidence available that the existing surface water drainage system is functional the surface water discharge rate shall be restricted to 6.4 l/s.
- 6.9 The proposed surface water runoff discharge for the development is set at 6.4 l/s and will necessitate the requirement of attenuation. The site is to be reasonably densely developed and there are existing restrictions such as an existing combined water sewer crossing the site.
- 6.10 It would be our recommendation that the form of attenuation be that of a combination of oversized pipes and offline attenuation, designed to attenuate surface water volumes up to and including the 100 + 40% climate change, in accordance with LLFA requirements. The 30 year storm events will be attenuated in oversized sewers that will be offered to United Utilities for adoption.
- 6.11 The surface water should be discharged into an existing surface water sewer in line with United Utilities recommendations in their pre-development consultation, which is located in Brightwater Close, and will require the crossing of third party line, which is a shared access serving 3 properties car parking and bin storage areas.

- 6.12 Calculations have been carried out to demonstrate the volume of oversized pipes and off line attenuation required to meet the design requirements as identified above.
- 6.13 By providing the above measures, a suitably managed surface water drainage system can be provided for this development.

7. Flood Risk Management Measures

- 7.1 The aim of flood risk management is to prevent loss of life and prevent / minimise damage to property in the event of a flood and to minimise disruption.
- 7.2 The development is located in a flood zone 1, so has a low probability of flooding from river or sea.
- 7.3 The site is at low risk surface of surface water flooding, with a depth of flow of less than 300mm, as defined by the EA maps.
- 7.4 The development is not affected by flooding from reservoirs or other man made sources.
- 7.5 To manage the risk of surface water flooding the site levels are required to be developed to ensure that, in the event of surface water flooding, the levels direct the flow around buildings in a safe and managed environment back to the route of existing surface water flows that currently exist.
- 7.6 Surface water runoff from the development will be managed using a positive drainage network. Surface water will be collected via, for example, rainwater pipes, road gully's and driveway gully's and carrying the water via a piped underground network it will be attenuated to ensure that the rainfall events up to and including the 100 year + 40% climate change storm events are retained, whilst managing the discharge rate to no greater than 6.4 l/s to manage flood risk both on and off site.

8. Off Site Impacts

- 8.1 Run-off from the proposed development is managed at a limit of no more than greenfield runoff rates, 6.4 l/s, through the inclusion of attenuation and flow control within the proposed drainage system. In doing so the rate and volume of runoff from the site is controlled thus reducing off site flood risk.

9. Residual Risks

- 9.1 Flooding due to exceedance flood events could occur. A flood exceedance analysis has been carried out in the drainage strategy and found that flooding, when tested against the upper end allowance for a 100 year , 6 hour duration storm, occurred but did not affect life or property.
- 9.2 No other residual flood risks are anticipated for the site following development.

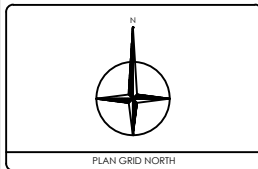
10. Conclusion

- 10.1 This Flood Risk Assessment demonstrates that the proposed development is suitable for the site.
- 10.2 Based on this evaluation the development satisfies the requirements of the NPPF and has addressed the flood risk posed to and stemming from the development.
- 10.3 The maximum surface water discharge rate shall not exceed 6.4 l/s.

Appendix A

Existing Site Layout

Proposed Site Layout



LEGEND

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NOTES

All measurements to O.S. (Ordnance Survey) Datum. Established using network WLS.

Survey carried out on a plane local grid, orientated to National Grid.

Services shown as 'From Statutory Authority Plans' line styles are taken from Statutory Plans supplied by the relevant regional authority. These services were not located and are shown for indicative purposes only.

DISCLAIMER:

All Layer Surveys limited and experienced staff use modern up to date techniques and top of the range electromagnetic and radar technology to locate and trace sub-surface utilities. However the performance of the equipment employed in non-invasive surveys can be adversely affected by factors outside the control of Layer Surveys. Therefore Layer Surveys cannot guarantee that all utilities present on site have been located. It is the responsibility of the Client to consult regional authority records and undertake trial dig where appropriate.

Where service services are in close proximity it may be impossible to separately trace individual services as the trace signal can experience interference. In such cases, services will be shown as a single, circumscribed line. The displayed depth will refer to the shallowest detected utility.

Successful tracing of non-conductive materials may be limited. Drainage gullies are the best where possible to prove connectivity but it is not always possible to introduce the sonde due to narrow pipe size and/or obstructions.

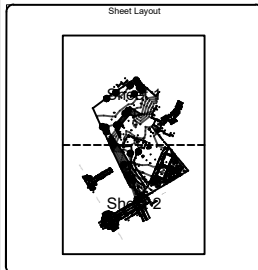
Depth information of underground services/features are generally accurate to within +/- 10% (i.e. a pipe at 2m deep may be accurate to +/- 200mm) but this cannot be guaranteed. Depths shown usually refer to the top of the service. Ground level and drain depths are usually to invert (base of drainage channel) unless otherwise stated.

Some above ground features may have been discovered at time of survey. It is not always possible to operate the Ground Penetrating Radar in areas including, but not limited to, dense vegetation, rubble, debris and/or rough/uneven ground.

Existing record information that was made available to Layer Surveys by the Client or by the statutory utility provider should be regarded only as an indication and cannot be guaranteed.

Excavation in the vicinity of services shown should be carried out with due diligence (Ref. HSG47).

SURVEY STATIONS			
Name	Easting	Northing	Height
LS1	381198.043	405630.329	88.13
LS1A	381198.022	405630.136	83.96
LS2	381232.315	405662.047	93.12
AR1	381213.301	405656.546	93.88
AR2	381228.034	405675.972	93.30



Scale 1:200

REV	DATE	DESCRIPTION
A	2011	AMENDED LEVELS



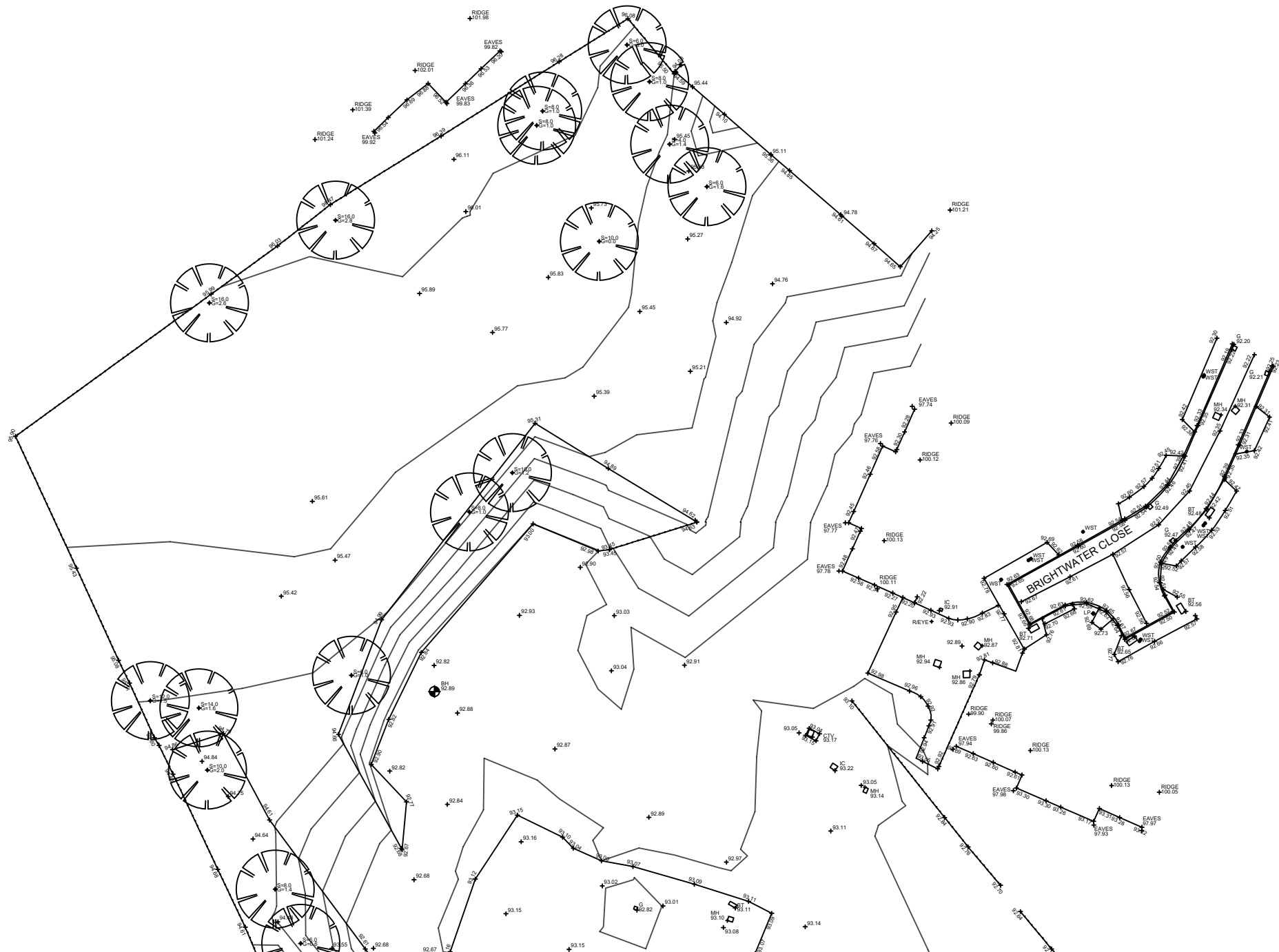
Client

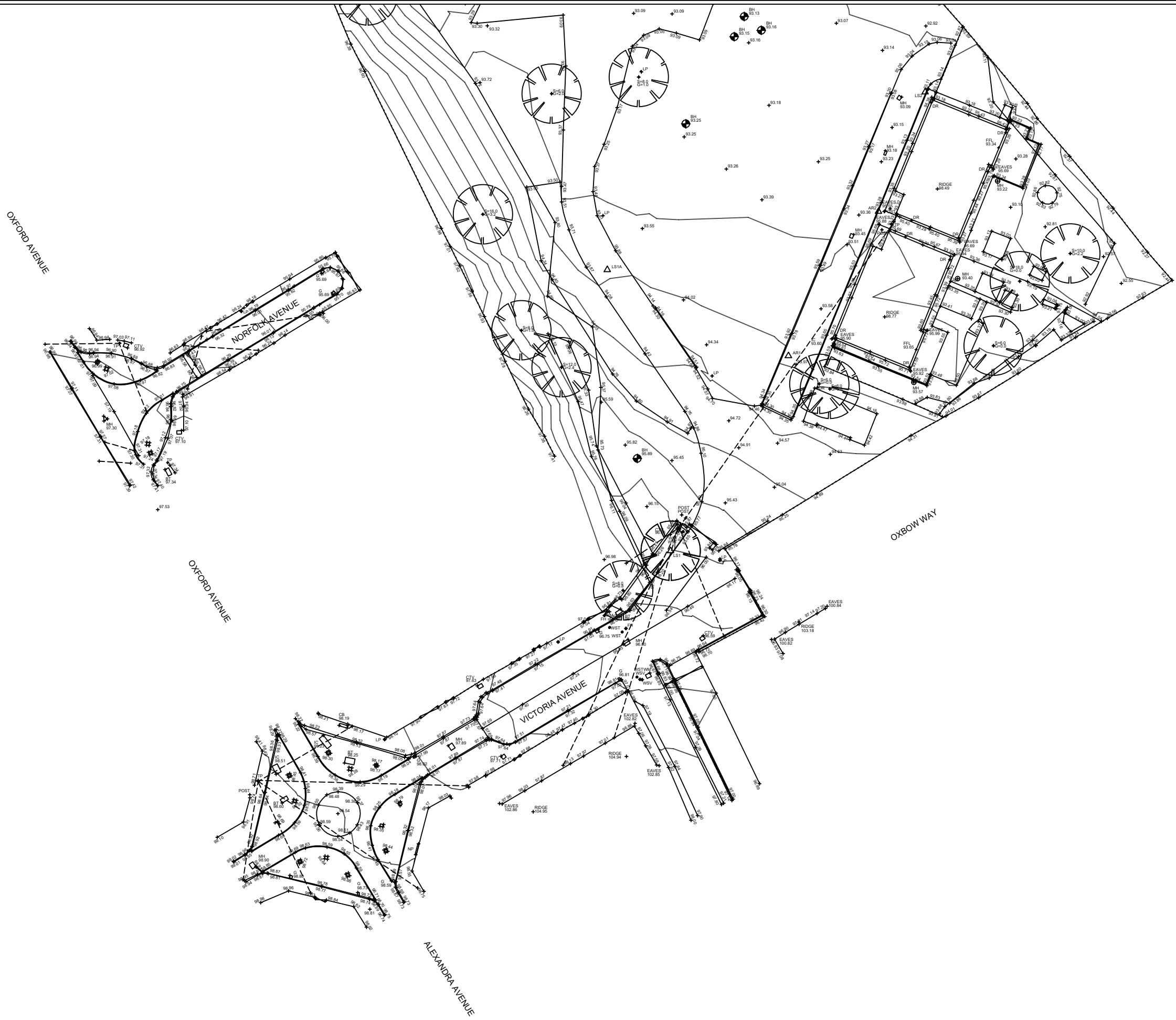
Sutcliffe
18-20 Harrington Street
Liverpool
L2 9GA

Project Title

Whitfield Day Centre
Manchester
M45 4DQ

Surveyed A.R	Drawn B.M	Checked Layer Surveys
Scale 1:200	Date SEPT 21	Drawing Ref. 995
No. 01	Size A3	Rev A





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PLAN GRID NORTH

LEGEND

Symbol	Description
...	...

Notes:
All elevations are to O.D. (Ordnance Datum). Established using network BS. Survey plotted on a plane local grid, orientated to National Grid.
Services shown as 'From Statutory Authority Plans' are shown on taken from Statutory Plans shown supplied by the relevant authority.
Services shown as 'From Statutory Authority Plans' are shown on taken from Statutory Plans shown supplied by the relevant authority.
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Where service services are in close proximity it may be impossible to separately trace individual services as the trace signal can experience interference. In such cases, services will be shown as a single, circumscribed line. The displayed depth will refer to the shallowest detected utility.
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Some above ground features may have been discovered at time of survey. It is not always possible to operate the Ground Penetrating Radar in areas including, but not limited to, dense vegetation, rubble, debris and/or rough/uneven ground.
Existing record information that was made available to Layer Surveys by the Client or by the statutory utility provider should be regarded only as an indication and cannot be guaranteed.
Excavation in the vicinity of services shown should be carried out with due diligence (Ref. HSG247).

SURVEY STATIONS			
Name	Easting	Northing	Height
LS1	381198.043	405630.329	88.13
LS1A	381198.021	405658.136	93.96
LS2	381232.315	405662.047	93.12
AR1	381213.301	405658.546	93.88
AR2	381228.034	405675.972	93.30

Sheet Layout



REV	DATE	DESCRIPTION
A	2011	AMENDED LEVELS



Client
Sutcliffe
18-20 Harrington Street
Liverpool
L2 9GA

Project Title
Wheatsfield Day Centre
Manchester
M45 6DQ

Surveyed A.R.	Drawn B.M.	Checked Layer Surveys
Scale 1:200	Date SEPT 21	Drawing Ref. 995
No. 02	Size A3	Rev A



Notes:

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Written dimensions to be taken in preference to scaled dimensions.
Due to the inaccuracies of scanning, scanned images should not be scaled.

REV:	DATE:	DESCRIPTION:	BY:
A	15.7.21	Bungalows Added	PO
B	16.7.21	Areas Revised	PO
C	7.10.21	Drain Shown and Layout Adjusted	PO
D	1.11.21	Further landscaping shown	PO
E	23.11.21	Site Entrance Revised	PO
F	25.02.22	Parking shown for 31-37 Victoria Avenue	PO
G	1.3.22	Increased Road Radius Near Plot 17	PO
H	4.3.22	Revised Road Layout	PO
I	4.3.22	Pinch Point Increased	PO
J	11.3.22	Road widend at bends	PO
K	22.3.22	Parking outside 33 & 35 reinstated	PO

Unit Type Key

- 3B5P Houses
Type A
18 no. @ 84m2 (90% NDSS)
- 2B3P Walk Up Apartments
Type B
6 no. @ 55/63m2 (90% NDSS)
- 2B3P Bungalows
Type C
6 no. @ 55m2 (90% NDSS)

Total 30 no. units

CLIENT:

Onward Homes

PROJECT:

Former Wheatfields Day Care Centre
Victoria Avenue, Whitefield

DRAWING NUMBER:

21059-PJA-00-ZZ-DR-A-1000-K

DRAWING TITLE:

Proposed Site Plan

STATUS:

PLANNING

SCALE:1 : 500@A2

DATE:30.6.21

BY:PO

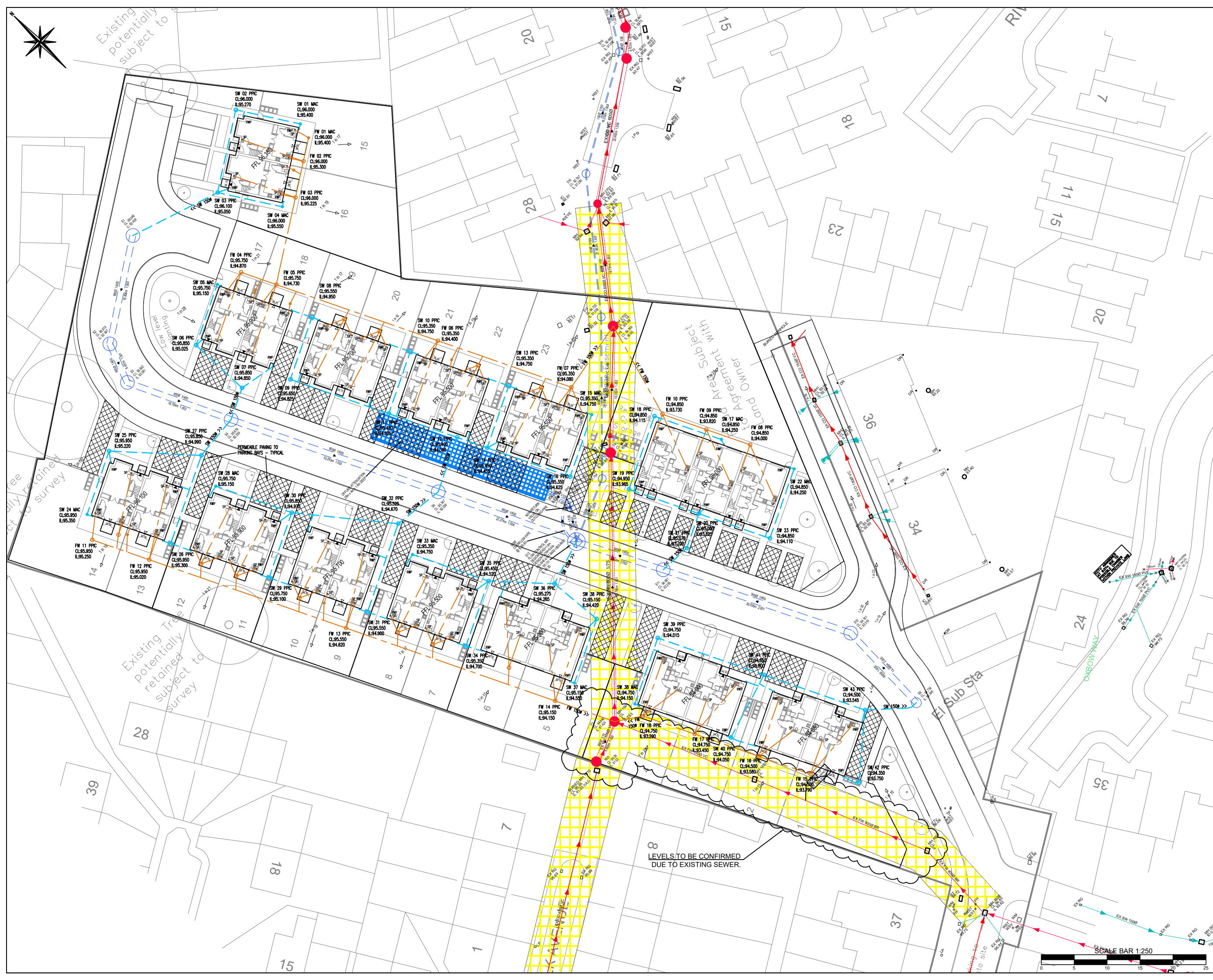
CHECKED:VA

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Merseyside, CH62 4UJ
0151 643 1234
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Paddock Johnson Partnership
Limited. Registered in England
and Wales. No. 06684275

Appendix B

Proposed Plan showing Preliminary Drainage Design



GENERAL NOTES

- THIS DRAWING TO READ IN CONJUNCTION WITH ALL RELEVANT STRUCTURAL AND ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.
- ALL DIMENSIONS TO BE CHECKED ON SITE BY THE CONTRACTOR / FABRICATOR PRIOR TO COMMENCEMENT OF WORKS.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
- ALL WORKS TO BE CARRIED OUT IN STRICT ACCORDANCE WITH THE ENGINEER'S SPECIFICATIONS, RELEVANT BRITISH STANDARDS AND WHERE APPLICABLE LOCAL AUTHORITIES REQUIREMENTS.

DRAINAGE KEY

- SITE BOUNDARY
- SURFACE WATER SENDER / MH
- FOUL WATER SENDER / MH
- COMBINED WATER SENDER / MH
- PRIVATE SURFACE WATER SENDER / MH
- PRIVATE FOUL WATER SENDER / MH
- SEWER EASEMENT (AS DIMENSIONED)
- EXISTING SURFACE WATER SENDER / MH
- EXISTING FOUL WATER SENDER / MH
- RWP = Rainwater pipe location
- SP = Soil pipe location
- Permeable driveway
- Surface Water Attenuation Cells

NOTE: ALL RWP/SP/BIG POSITIONS TO BE CONFIRMED BY ARCHITECT PRIOR TO START OF WORKS ON SITE

P03	PRIVATE DRAINAGE ADDED	30.06.22	AJB	DS
P02	SITE PLAN UPDATED	23.03.22	MJD	DS
P01	PRELIMINARY ISSUE	11.11.21	JG	DS
Rev	Description	Date	By	Chkd

Drawing Status

PRELIMINARY DRAWING

Sutcliffe

Client: ONWARD

Project: FORMER WHEATFIELDS DAY CENTRE WHITEFIELD

Drawing Title: INDICATIVE DRAINAGE LAYOUT

Date: NOV. 2021	Drawn By: JG	Checked By: DS
Scale at A1: 1:250	Project Number: 31990	Revision: P03
Sheet Number: 31990-SUT-ZZ-XX-DR-C-6020		

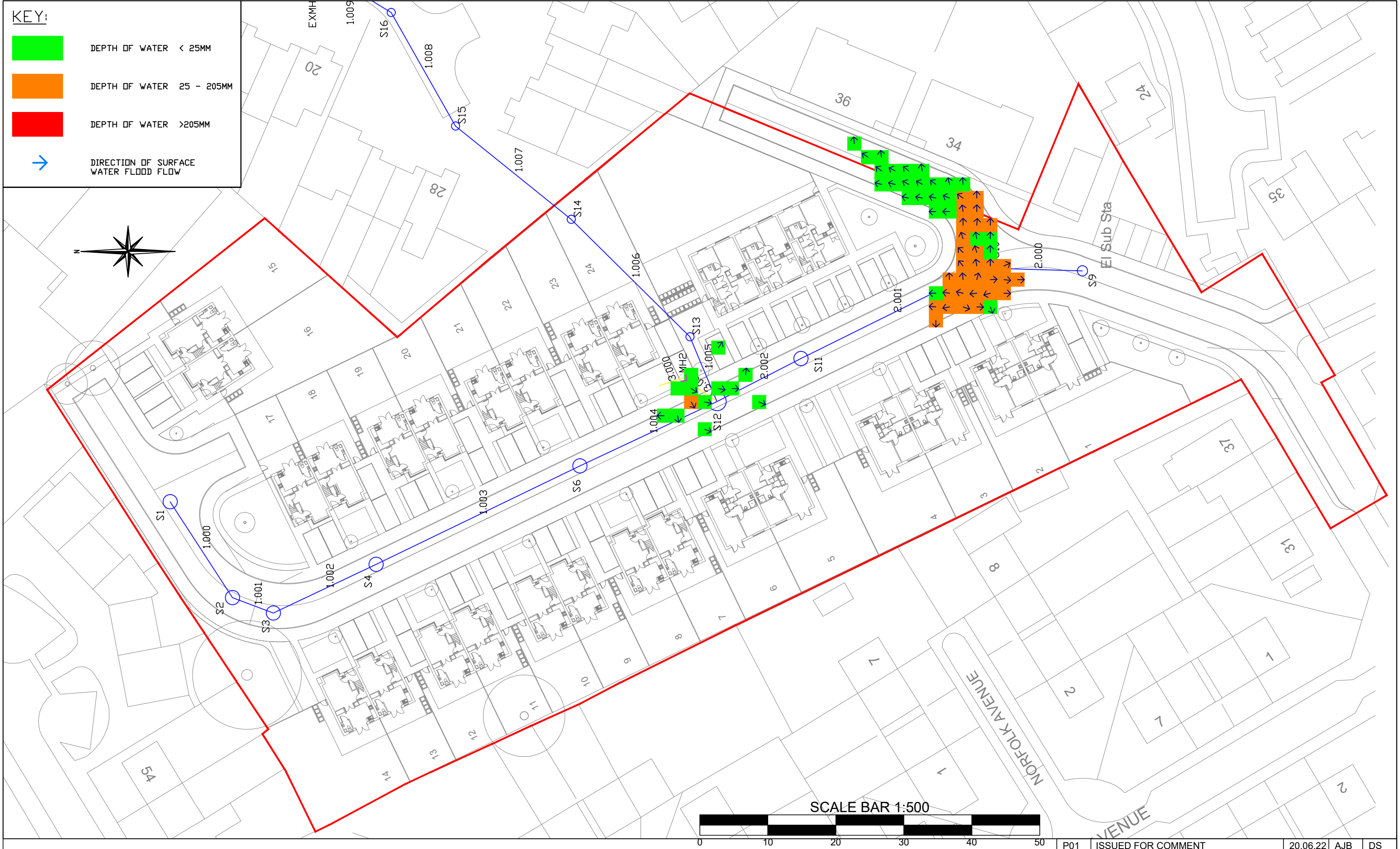
Appendix C

Greenfield Calculation

Sutcliffe		Page 1																												
18-20 Harrington Street Liverpool L2 9QA	Wheatfield Day Centre Whitefield Manchester																													
Date 16/06/2022 15:46 File 31990_Qbar.SRCX	Designed by DS Checked by																													
Innovyze	Source Control 2020.1.3																													
<u>ICP SUDS Mean Annual Flood</u> Input <table><tr><td>Return Period (years)</td><td>2</td><td>Soil</td><td>0.450</td></tr><tr><td>Area (ha)</td><td>1.000</td><td>Urban</td><td>0.000</td></tr><tr><td>SAAR (mm)</td><td>970</td><td>Region Number</td><td>Region 10</td></tr></table> Results 1/s <table><tr><td>QBAR Rural</td><td>6.4</td></tr><tr><td>QBAR Urban</td><td>6.4</td></tr><tr><td colspan="2"> </td></tr><tr><td>Q2 years</td><td>6.0</td></tr><tr><td colspan="2"> </td></tr><tr><td>Q1 year</td><td>5.6</td></tr><tr><td>Q30 years</td><td>10.9</td></tr><tr><td>Q100 years</td><td>13.4</td></tr></table>			Return Period (years)	2	Soil	0.450	Area (ha)	1.000	Urban	0.000	SAAR (mm)	970	Region Number	Region 10	QBAR Rural	6.4	QBAR Urban	6.4			Q2 years	6.0			Q1 year	5.6	Q30 years	10.9	Q100 years	13.4
Return Period (years)	2	Soil	0.450																											
Area (ha)	1.000	Urban	0.000																											
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Q1 year	5.6																													
Q30 years	10.9																													
Q100 years	13.4																													
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Appendix D

Flood Exceedance Plan



 Structural & Civil Engineering Geotechnical & Environmental Investigations Building Surveying Pre Planning Services Liverpool Head Office: 0151 227 3155 Manchester Office: 0161 817 5180 North Wales Office: 01978 664 071 London Office: 020 8016 4320  Client ONWARD <tr><td colspan="2">Project</td><td colspan="3">FORMER WHEATFIELDS DAY CENTRE WHITEFIELDS</td></tr> <tr><td colspan="2">Drawing Title</td><td colspan="3">FLOOD EXCEEDANCE DRAWING</td></tr> <tr><td>P01</td><td colspan="2">ISSUED FOR COMMENT</td><td>20.06.22</td><td>AJB</td><td>DS</td></tr> <tr><td>Rev</td><td colspan="2">Description</td><td>Date</td><td>By</td><td>Chkd</td></tr> <tr><td colspan="2">Date</td><td colspan="2">JUNE 2022</td><td colspan="2">Drawn By AJB</td><td>Checked By DS</td></tr> <tr><td colspan="3">Scale at A3 1:500</td><td colspan="3">Project Number 31990</td></tr> <tr><td colspan="3">Sheet Number 31990-SUT-ZZ-XX-DR-C-6002</td><td colspan="3">Revision P01</td></tr> <tr><td colspan="6">Drawing Status PRELIMINARY DRAWING</td></tr>	Project		FORMER WHEATFIELDS DAY CENTRE WHITEFIELDS			Drawing Title		FLOOD EXCEEDANCE DRAWING			P01	ISSUED FOR COMMENT		20.06.22	AJB	DS	Rev	Description		Date	By	Chkd	Date		JUNE 2022		Drawn By AJB		Checked By DS	Scale at A3 1:500			Project Number 31990			Sheet Number 31990-SUT-ZZ-XX-DR-C-6002			Revision P01			Drawing Status PRELIMINARY DRAWING					
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Appendix E

Correspondence

From: [Wastewater Developer Services](#)
To: [Dave Samuels](#)
Cc: [Wastewater Developer Services](#)
Subject: Pre Development Enquiry for: Former Wheatfields Day Centre M45 8SG UU Reference Number : 4200045674
Date: 16 December 2021 12:08:28
Attachments: [image001.png](#)

Good Afternoon Dave,

Pre Development Enquiry for: Former Wheatfields Day Centre M45 8SG **UU**
Reference Number : 4200045674

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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/>

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 600mm diameter public combined sewer within your proposed development at an unrestricted rate
Please ensure any proposed connections are not against the flow

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.

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 public surface water sewer within Oxbrow Way located South 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 6.4l/s.

The Sewer records in this area are incomplete and we are unable to confirm pipe diameters. We would recommend Investigation as part of enabling works to verify this.

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.

The area to the West of the site is topographically elevated above the proposed development. Sewers by design can surcharge but are only designed to hold a finite quantity of flow. In extreme events, sewers can experience flooding. Given that there are sewers located on elevated ground to your site and some located on-site, we would request that any potential exceedance routes are taken into consideration in order to protect the proposed dwellings.

We note there are multiple locations on-site where properties are set lower than the cover levels of existing manholes. As a result, should these ever flood, the adjacent properties could be at risk.

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 meet 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/wp-content/uploads/2020/03/SSG-App-C-Des-Con-Guide-v-2-100320-C.pdf>

Existing Wastewater Assets Crossing the Site

According to our public sewer records there are public sewers located within your site boundary. We will require unrestricted access to the sewer for maintenance purposes, we would ask that you maintain a minimum clearance of 6m which is measured 3m from the centre line of the pipe unless there happens to be a formal easement agreement in place, in which case the specified easement width would apply.

We note, that there is an existing public combined sewer which has been suggested to be located in rear gardens, this reduces future access for maintenance purposes and does not represent best practice. As a result you may wish to reconsider the site layout or a sewer diversion.

Please refer to the link below to obtain full details of the processes involved with sewer diversions:

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

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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,

Kind regards



Mike Duckworth

Developer Services Engineer
Developer Services & Metering
Customer Services

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