

Benmore Road, Former White Moss Day Care, Manchester

Drainage Strategy

The Guinness Partnership

January 2023

Notice

This document and its contents have been prepared and are intended solely as information for The Guinness Partnership and use in relation to a full planning application for a residential development on the land off Benmore Road, Manchester.

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Document history

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
1.0	For Client Review	RW	FL	CB	GC	30/01/23
1.1	Drainage Strategy Updated	RW	FL	CB	GC	31/01/23

Client signoff

Client	The Guinness Partnership
Project	Benmore Road, Manchester
Job number	5218589
Client signature / date	

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1. Introduction

Atkins has been commissioned by The Guinness Partnership to prepare a drainage strategy to inform a full design package for a proposed residential development (the 'Proposed Development'), on the land off Benmore Road, former White Moss Resource Community Centre, Manchester (the "Site").

This Drainage Strategy has been prepared in accordance with the National Planning Policy Framework (NPPF)¹ and associated Planning Practice Guidance². This Drainage Strategy has been established through consultation with and using documentation provided by United Utilities (UU), Environment Agency (EA) and the Manchester City Council, Lead Local Flood Authority (LLFA).

¹ National Planning Policy Framework, February 2019, Department for Communities and Local Government

² Planning Practice Guidance, March 2014, Department for Communities and Local Government

2. Background Information

2.1. Environment Agency (EA)

An enquiry was submitted to the Environment Agency (EA). The response received is summarised below and included in full in **Appendix A**:

- The site is in Flood Zone 1.
- The nearest model is in Blackley, which has no impact on this site location.
- The EA do not have any records of flooding affecting the Site.
- The EA have no flood defences in the vicinity of this Site.

2.2. United Utilities (UU)

A Developer Enquiry was submitted to UU. A copy of the response and sewer records are included in **Appendix A** and the key points summarised below:

- UU have no current record of sewer flooding within the vicinity of the Proposed Development.
- UU allows foul water flow from the Proposed Development to be discharged into their public combined sewer at an unrestricted rate. Their preferred point of connection is the 450mm diameter public combined sewer within Benmore Road to the west of the Site.
- In relation to surface water, UU will consider a connection to their 450mm diameter public combined sewer within Benmore Road located west of the Site at discharge rate not exceeding 5l/s, only once evidence is provided that surface water cannot be discharged via methods that are higher in the drainage hierarchy within the National Planning Practice Guidance².
- UU assess adoption applications based on the current Design & Construction Guidance and local practices.
- Site drainage must be designed in accordance with Building Regulations, National Planning Policy, and local flood authority guidelines.
- All SuDS should be designed in accordance with the standards within the Design & construction guidance & the CIRIA SuDS manual (C753).
- Sewer record shows that there are combined sewers surrounding the Site. There is a sewer along Benmore Road to the south of the Site. There are sewers within Pembridge Road and White Moss Road to the east and north of the Site respectively.

2.3. Manchester City Council (MCC)

MCC, as the LLFA, have been consulted regarding requirements specific to the site and the preliminary development proposals. A copy of the full response received is included in **Appendix A** and summarised below:

- The Site is located in the Conurbation Core Critical Drainage Area (CDA).
- The nearest flood/drainage incident on record is approximately 40m north of the Site, dated 16/04/2012. The incident is described as "Grid / gully blocked".
- The asset register highlights the Lionfield Brook culverted ordinary watercourse may be in close proximity to the Site (passing in a route approximately 30m north of the site and 60m west of the site). 3rd party historic OS mapping indicates a 'river' was proximal to the southern Site boundary.
- The 1984 drainage survey of major assets does not highlight the indicative culvert asset.
- MCC cannot guarantee 100% accuracy for all their underground assets and request the applicant to inform onsite contractor to remain observant and take appropriate safety precautions during excavation works.

3. Site Description

3.1. Location

The Site is located in a residential area to the north Manchester City Centre and approximately 600m south of junction 20 of the M60 (Manchester Outer Ring Road). The Site sits in the southwest corner of a square in between Benmore Road and Pembridge Road, both of which are south off the White Moss Road. The Site has direct access from Benmore Road from the south, as Benmore Road borders the Site on the southern side.

The proposed area under consideration for the development is shown below and has an approximated centre point coordinates at Easting: 386649 and Northing: 403517.



Figure 3-1 Site location plan (not to scale)

3.2. Topography

The site has an approximate area of 0.53ha. The topographical survey of the Site is shown in **Appendix B**.

The topographical survey indicates that the Site falls from the perimeter to the central area, creating an informal attenuation pond. Levels along the perimeter fall from north to south from an approximate level of 101.6m AOD to 100.5m AOD. The lowest level within the site is located in the central area and is approximately 100.2m AOD.

The Site's surrounding area generally falls in a southerly direction.

3.3. Land Use

3.3.1. Historic

Early mapping (1848) shows it was undeveloped farmland and had multiple ponds within 250m of the site, that were infilled in 1980. A farm was located to the west of the site, known as Dam Head Farm, but was demolished in 1975. Since 1949 the site has been surrounded by residential development in all direction. An irregular shaped building can be seen on the site from 1963 onwards, named White Moss Community Resource Centre and was used as a home for the elderly. It was then demolished between 2016 and 2021, leaving the site vacant.

3.3.2. Current

The Site is currently a landscaped site, with all the area covered by grass. There are several mature trees within the Site and hedgerows along part of the boundary.

The immediate surrounding area is primarily composed of residential developments.

3.4. Ground Conditions

The content of this section has been informed by Geo-Environmental and Geotechnical Reports prepared by Curtins (reference: 077873-CUR-00-XX-RP-GE-041-P01; date: November 2022) together with information from a number of on-line, public domain data sources.

3.4.1. Soils

According to Soilscales³, the soils on the site are described as *slowly permeable and seasonally wet acid loamy and clayey soils*. No information is currently available regarding the depth of this stratum.

3.4.2. Made Ground

Made ground was encountered to depths of between 0.3 and of 0.9m.

Made Ground soils comprise either loose light grey gravelly sand, loose dark brown slightly clayey gravelly sand with rare cobbles, or loose brown gravelly sand with rare cobbles. The gravel fraction of the granular soils includes fine to coarse and angular to subrounded brick, concrete, and mudstone. Cobbles were angular to subangular of brick and concrete.

3.4.3. Geology

3.4.3.1. Superficial Deposits

According to the Geotechnical Report, the superficial deposits underlying the Site are classified as Glacial Till Deposits (interbedded granular and cohesive soils) and the Pennine Lower Coal Measures Formation bedrock for the majority of the site and the Pennine Middle Coal Measures Formation bedrock in the southern corner of site. The Glacial Till encountered comprises predominantly cohesive deposits described typically as a soft to firm sandy clay.

3.4.3.2. Bedrock

According to the British Geological Survey (BGS) GeoIndex⁴, the bedrock underlying the Site is Pennine Lower Coal described as interbedded grey mudstone, siltstone and pale grey sandstone, commonly with mudstones containing marine fossils in the lower part, and more numerous and thicker coal seams in the upper part.

3.4.3.3. Contamination

The Geo-Environmental and Geotechnical Reports have identified the presence of Metals (Mercury).

3.5. Water Environment

3.5.1. Drainage

3.5.1.1. Land Drainage

There is no evidence indicating that there are any land drainage systems within the Site. If any land drainage is encountered during construction, it must be reconnected and/or diverted to ensure ongoing drainage post-development.

3.5.1.2. Private Drainage

There are no records of any private drainage within the Site. However, due to the Site having been developed in the past and surrounded by residential developments; it is possible that private drainage is present within the Site.

3.5.1.3. Public Sewerage

UU sewer records for the Site and surrounding area have been obtained and are provided in **Appendix A**.

There nearest sewer is a 225/450mm diameter combined sewer, approximately 3 to 5m deep, within Benmore Road to the south of the Site flowing in a westerly direction.

³ Soilscales, <http://www.landis.org.uk/soilscales/>

⁴ British Geological Survey GeoIndex 1:50000 mapping records for Manchester dated 2010, <http://mapapps2.bgs.ac.uk/geoindex/home.html>

There are a 225mm diameter combined sewer along on Pembridge Road, running south; 300 and 1500mm diameter combined sewer along White Moss Road, flowing east and combined sewers in the private back gardens of the residential buildings to the north of the Site.

A site constraints plan (drawing reference: 5218589-ATK-BN-XX-DR-D-0601) showing the public sewers location is provided in **Appendix B**.

3.5.2. Watercourses

MCC development enquiry response (section 2.3) highlights the possibility of the presence of a section of the Lionfield Brook culverted watercourse in close proximity to the site, approximately 30m north and 60m west of the site. The culvert is an indicative asset and has not been verified with a survey.

The River Irk is located approximately 2km to the north of the Site and the nearest surface water features are the Lionfield Brook, ordinary watercourse, located approximately 400m to the south of the Site, within Bailey's Wood, the Boardman Brook, located approximately 1km to the north of the Site and the Boggart Hole Brook, located approximately 1km to the southwest of the Site.

3.5.3. Waterbodies

There are no waterbodies located within the site. A Boating Lake is located approximately 1km to the south of the Site.

3.5.4. Groundwater

According to Environment Agency mapping and the Geo-Environmental and Geotechnical Reports, the Site is not located within any groundwater source protection zones. The superficial deposits are designated as a Secondary Undifferentiated Aquifer. The bedrock underlying the Site is classified as a Secondary A Aquifer.

Groundwater was encountered in one borehole, located in the central area of the Site, at a depth of 4m.

3.6. Proposed Development

The proposal involves development of residential housing, comprising of 20 new units, a mix of 2 and 3 bedroom houses with private car parking, and a new access road.

The proposed development layout (drawing reference: 5218589-ATK-BN-XX-M2-D-5603; date: Dec 2023) is included in **Appendix B**.

4. Surface Water Drainage Strategy

4.1. Existing Drainage Regime

The Site in its current conditions drains either via infiltration into the ground or by overland flow into the highway drainage surrounding the Site.

To assess the existing run-off flow rates that could be generated by the Site, the current green field runoff rates have been calculated using IH124 Flood Estimation for Small Catchments with the ICP SUDS modifications as the Site has an area of less than 50ha. MicroDrainage Source Control was used to undertake the calculations using the following parameters:

- Area 0.53ha
- SAAR (Standard Annual Average Rainfall) 955mm
- SOIL 0.450
- Urban 0.000
- Region 10

The calculation results are shown in Table 4-1.

AEP	Run-off flow (l/s)
100%	2.9
42.9%(QBAR)	3.3
3.3%	5.7
1%	7.0

Table 4-1 - Existing surface water run-off rates

4.2. Proposed Outfall

Surface water run-off from the Proposed Development will be discharged into the local public combined water sewers on the Benmore Road to the southwest of the Site (UU manhole ref. 6403).

As described in section 3.4, ground beneath the Site comprises clay and made ground hence is unlikely to be sufficiently permeable for infiltration to be used as a means of surface water disposal and there is a risk of mobilising contaminants; therefore, the use of infiltration as a means of surface water disposal is not proposed.

4.3. Maximum Permitted Discharge Rate

The maximum total discharge rate from the Proposed Development into the public combined water sewer will be limited to the QBAR greenfield runoff rate of 3.3l/s.

This flow rate is lower than the maximum discharge rate provided by UU of 5l/s (section 2.2).

4.4. SuDS Selection

The LLFA requires SuDS to be considered for inclusion within the drainage strategy for the Proposed Development. The SuDS techniques suitable for this development have been identified using the selection process defined in CIRIA C697 *The SuDS Manual*⁴ and information provided in CIRIA C753 *The SuDS Manual*⁵.

The Proposed Development is residential; therefore, according to CIRIA C697⁴, Table 5.2 (reproduced in **Appendix C**), all SuDS techniques, with the exception of perimeter sand filter are considered acceptable.

As described in Section 4.2, surface water from the Proposed Development will be discharged into UU's combined sewer. Surface water disposal via infiltration is not considered to be viable as the primary method of surface water discharge.

⁴ C697 The SUDS Manual, CIRIA, 2007

⁵ C753 The SUDS Manual, CIRIA, 2016

According to CIRIA C753⁵, Table 4.3, the Proposed Development, including the new access road, has a *low* pollution hazard level. For *low* pollution hazard levels, this necessitates the *Simple Index Approach* to assess the water quality management requirements for the proposed development.

According to CIRIA C753⁵, Table 26.2, the *low* pollution hazard levels for the Proposed Development translate to the pollution hazard indices set out in Table 4-2.

Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydrocarbons
Residential roofs	Very low	0.2	0.2	0.05
Individual property driveways, residential car parks, low traffic roads (<300 movements/day)	Low	0.5	0.4	0.4

Table 4-2 - Development pollution hazard indices

The parameters for the initial selection of SuDS components for this site using CIRIA CIRIA C697⁴ Table 5, reproduced in **Appendix C** are as follows:

- Soils: Impermeable
- Area draining to a single SuDS component: 0 – 2ha
- Minimum depth to water table: >1m
- Site slope: 0 – 5%
- Available head: 1 – 2m
- Available space: Low

Based on this initial selection process, the following SuDS techniques are identified as being potentially suitable for this site:

- Subsurface storage
- Pocket wetland
- Sub-surface sand filter
- Filter trench
- Green roofs
- Rainwater harvesting
- Permeable paving

Subsurface storage is anticipated to provide the primary surface water storage within the Proposed Development. This will take the form of oversized pipes.

Wetlands require either a continuous through-flow of water or consistently high groundwater levels. Neither of these are present on the Site hence wetlands are not considered to be a viable SuDS technique for the Proposed Development.

Subsurface sand filter is potentially suitable; however, at this stage a decision regarding the use of these systems has not been made.

Pocket filter drains are proposed for each residential housing downpipe to provide both interception and water quality benefits for residential roof runoff. Details of pocket filter drains will be established later in the design process.

The Proposed Development does not include green roofs. This is due to uncertainties regarding the ongoing future maintenance that the householder will need to undertake to ensure that they remain operational and effective into the future.

Rainwater harvesting systems for the residential properties are not proposed on this site. This is due to uncertainty regarding the maintenance of such systems when installed in private properties. However, all properties may be fitted with rainwater butts on appropriate downpipes.

Permeable paving is proposed on the private drives. The permeable paving will primarily provide treatment for flows passing through it. The car parking areas are considered to present the higher risk of surface run-off

pollution due to substances dripping from parked vehicles and tyre and brake material deposited as vehicles manoeuvre.

Trapped gullies will be used on the public road to separate contaminants and silt from the surface water run-off before it reaches the outfall.

The percentage of the total Site's run-off treated by each SuDS component is shown in Table 4-3.

SuDS component	Run-off treated by the SuDS component (% of total runoff)
Pocket filter drain	35
Permeable paving	35
Trapped gully	30

Table 4-3 - % of total run-off treated by each SuDS component

The pollution mitigation indices for pocket filter drain and permeable paving are set out in Table 4.4 as follows (CIRIA C753, Table 26.3).

SuDS component	Total suspended solids (TSS)	Metals	Hydrocarbons
Pocket filter drain	0.4	0.4	0.4
Permeable paving	0.7	0.6	0.7

Source: CIRIA C753, Table 26.3 and 26.4 (extract)

Table 4-4 - Pollution mitigation indices for permeable paving

Table 4-5 demonstrates that the SuDS techniques identified above will achieve the required degree of pollution mitigation for each of the different land uses.

Land use	Pollution hazard indices			SuDS feature	Pollution mitigation indices		
	TSS	Metals	Hydrocarbons		TSS	Metals	Hydrocarbons
Residential roofs	0.2	0.2	0.05	Pocket filter drain	0.4	0.4	0.4
Individual property driveways, car parks, low traffic roads (<300 movements/day)	0.5	0.5	0.4	Permeable paving	0.7	0.6	0.7

Table 4-5 - Potential SuDS configurations

4.5. Proposed Strategy

The drainage strategy is illustrated on drawing number 5218589-ATK-BN-XX-DR-C-0602 Proposed Drainage Strategy; a copy is included in **Appendix B**.

Based on the proposed development layout plans, the Proposed Development has been calculated as having a 70% impermeable area. The total impermeable area that the surface water drainage system must manage is 0.37ha.

It is proposed that the surface water drainage system will comprise a conventional pipe network, alongside SuDS components, draining to oversized pipes.

A Hydro-Brake® flow control is proposed to be used prior to the outfall into the sewer, limiting the flow to the maximum permitted flow rate for the Site, as detailed in section 4.3.

The storage has been designed to provide the necessary flow attenuation for all rainfall events up to and including the 1% AEP +45% climate change event.

The required storage volume is 160m³. This has been determined using MicroDrainage Source Control; the results are provided in **Appendix D**.

4.6. Adoption & Maintenance

It is anticipated that the underground pipework within the proposed surface water drainage system will be offered to UU for adoption.

5. Foul Water Drainage Strategy

5.1. Foul Water Flow Rates

As described in section 4.1, the Proposed Development comprises 20 accommodation buildings. Based on the Design and Construction Guidance, clause B3.1.1.(b), each dwelling generates 4,000 l/dwelling/day; therefore, the peak foul water flow rate generated by the proposed development will be 0.9 l/s (based on 6 dry weather flow (DWF)).

5.2. Proposed Outfall

Correspondence with UU confirmed that there is a suitable point of connection into the 450mm diameter public combined sewer on Benmore Road, to the southwest of the Proposed Development at an unrestricted rate (UU manhole ref. 6403).

5.3. Strategy

It is proposed that foul water flows within the Proposed Development will be conveyed via a gravity pipe network. The pipe network will consist of pipes laid at gradients that enable self-cleansing flow velocities to be achieved in accordance with the Design and Construction Guidance

5.4. Adoption & Maintenance

It is anticipated that the proposed foul water drainage system will be offered to UU for adoption.

6. Conclusions & Recommendations

6.1. Conclusions

Surface water run-off from the Proposed Development will be discharged into a local public combined water sewer located in Benmore Road to the southwest of the Site (UU manhole ref. 6403) at a maximum total discharge rate of 3.3l/s. The ground beneath the Site comprises clay hence is unlikely to be sufficiently permeable for infiltration to be used as a means of surface water disposal; therefore, the use of infiltration as a means of surface water disposal is not proposed.

The Proposed Development will incorporate SuDS features. Subsurface storage is anticipated to provide the primary surface water storage within the Proposed Development, in the form of oversized pipes.

The Proposed Development does not include green roofs and rainwater harvesting systems due to uncertainties regarding the ongoing future maintenance that the householder will need to undertake to ensure that they remain operational and effective. However, all properties may be fitted with rainwater butts on appropriate downpipes.

Permeable paving is proposed on the private drives. Subsurface sand filters are potentially suitable and should be considered during future design stages.

Pocket filter drains are proposed for each residential housing downpipe to provide both interception and water quality benefits for residential roof runoff.

Trapped gullies will be used on the public road to separate contaminants and silt from the surface water run-off before it reaches the outfall.

A Hydro-Brake® flow control is proposed to be used prior to the outfall into the sewer, limiting the flow to the maximum permitted flow rate for the Site.

The required storage volume is 160m³. This has been designed to provide the necessary flow attenuation for all rainfall events up to and including the 1% AEP +45% climate change event.

The peak foul water flow rate generated by the proposed development will be 0.9l/s. These are proposed to be discharged into the public combined sewer within Benmore Road to the southwest of the Site (UU manhole ref. 6403). The suitability of the connection has been confirmed by UU.

Both the proposed surface and foul water drainage system will be offered to UU for adoption.

6.2. Recommendations

This Drainage Strategy is suitable for submission in support of a full planning application for the Proposed Development.

The design of the Proposed Development and its drainage systems must comply with the principles and parameters defined in this document or a suitable alternative as agreed with the relevant approving authorities.

Appendices



Appendix A. Correspondence

Wilkinson, Ruth

From: GMMC Info Requests <InfoRequests.GMMC@environment-agency.gov.uk>
Sent: 19 October 2022 09:23
To: Wilkinson, Ruth
Subject: GMMC281028SW Response attached from the Environment Agency

Dear Ruth,

Thank you for your enquiry which was received on 23/09/22.

We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004.

The site proposal is located in Flood Zone 1, very low risk. Our nearest model is in Blackley, which has no impact to this site location.

We have no flood defences in the vicinity of this site.

We have no records of flooding affecting the site. However, this does not mean flooding has not occurred in the past or that it will not flood in future. We recommend that you also contact United Utilities and the lead local flood authority who may hold additional information (the former especially in relation to sewer flooding).

For further information on your property's flood risk, visit:

Long term flood risk website: <https://flood-warning-information.service.gov.uk/long-term-flood-risk/>

Flood Map for Planning: <https://flood-map-for-planning.service.gov.uk/>

For surface water information please use link: <https://check-long-term-flood-risk.service.gov.uk/map?easting=362125.07&northing=388310.97&map=SurfaceWater>

Please refer to the [Open Government Licence](#) which explains the permitted use of this information.

Please get in touch if you have any further queries or contact us within two months if you'd like us to review the information we have sent.

Kind regards,

Sarah

Sarah Walters | Customer and Engagement Officer
Greater Manchester, Merseyside and Cheshire

Direct email: InfoRequests.GMMC@environment-agency.gov.uk

Office address: Richard Fairclough House, Knutsford Road, Latchford, Warrington, WA4 1HT



From: Wilkinson, Ruth <Ruth.Wilkinson@atkinsglobal.com>
Sent: 23 September 2022 10:50

To: Enquiries, Unit <enquiries@environment-agency.gov.uk>

Subject: 220929/GA09-Ref: Development enquiry - Former White Moss Day Care Centre, Benmore Road, M9 6DN

You don't often get email from ruth.wilkinson@atkinsglobal.com. [Learn why this is important](#)

Good morning,

I am contacting you in regards to a proposed residential development at former White Moss Day Care Centre near Benmore Road, Manchester. Please find the site location details below and the site location plan attached.

Site location: Adjacent to Benmore Road, M9 6DN

NGR coordinates: 386650, 403521

I am preparing a Drainage Strategy to support a planning application and would be grateful if you could advise on the following:

- Confirm that the site lies within Flood Zone 1
- Whether there are any records of flooding from any source in the vicinity of the site
- Are you aware of any specific flood risk and/or drainage issues that need to be considering within the Drainage Strategy for this site?

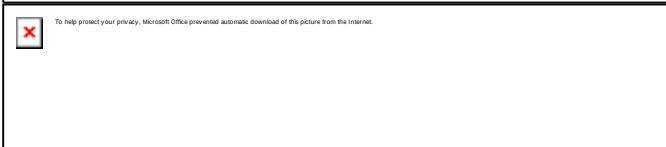
Please contact me if you require any clarifications about this enquiry.

Kind Regards,

Ruth Wilkinson *MEng*
Graduate Civil Engineer, Infrastructure
UK & Europe
Engineering, Civil Engineering & Advanced Technology

 + (44) 1214835888

Two Chamberlain Square, Birmingham, West Midlands, B3 3AX



Company



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make this message and any reply to it public if asked to under the Freedom of Information Act, Data Protection Act or for litigation. Email messages and attachments sent to or from any Environment Agency address may also be accessed by someone other than the sender or recipient, for business purposes.

Wilkinson, Ruth

From: wastewaterdeveloperservices@uuplc.co.uk
Sent: 03 October 2022 10:13
To: Wilkinson, Ruth
Subject: Pre Development Enquiry for: Former White Moss Day Care - Charlestown UU
Reference Number : 02849952

Good Morning, Ruth

Pre Development Enquiry for: Former White Moss Day Care - Charlestown UU Reference Number : 02849952

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 450mm diameter public combined sewer within Benmore 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.

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 450mm diameter public combined sewer within Benmnore Road located West 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 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.

Please be aware that any proposed diversion may require modelling. This process may take up to 6 months in order to reach an acceptable design.

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/>

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.

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/>

Many thanks and kind regards,



Gary Jaundrell
Assistant Developer Engineer
Developer Services & Metering
Customer Services
T: 07388 715 589
unitedutilities.com

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 WastewaterDeveloperServices@uuplc.co.uk

Coronavirus

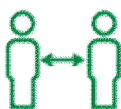
Prevent the spread



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: 26/09/2022 14:25

To: ruth.wilkinson@atkinsglobal.com

Subject: RE: Our reference - 02849952 Former White Mos Day Care Centre, Near Benmore Rd, Manchester

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

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

Sent: 26/09/2022 10:07

To: uth.wilkinson@atkinsglobal.com

Subject: Our reference - 02849952 Former White Mos Day Care Centre, Near Benmore Rd, Manchester



To help protect your privacy, Microsoft Office prevented automatic download of this picture from the Internet.

Good Morning Ruth

PRE DEVELOPMENT APPLICATION AT: Former White Mos Day Care Centre,
Near Benmore Rd, Manchester
UU Ref: 02849952

Please accept this email as receipt of your application received on 23/09/2022 for the above development. This has now been logged on our system and the job reference is 02849952 we would ask that you quote this reference in all future correspondence.

I have reviewed your application (and attachments) and can confirm this is suitable to be passed to Gary Jaundrell for technical assessment. You will receive their response within 8 working days.

Kind regards



Amanda Harding
Customer Advisor Advanced
Developer Services & Metering
Customer Services
Direct Tel: 01925 233186
Tel: 0345 072 6067
[unitedutilities.com](https://www.unitedutilities.com)

If you have received a great service today why not tell us?
Visit: [unitedutilities.com/wow](https://www.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 WastewaterDeveloperServices@uuplc.co.uk



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Atkins - Utility Solutions

The Hub
500 Park Avenue,, Aztec West, Almondsbury
Bristol,
BS32 4RZ

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: 115545
Our Ref: UUPS-ORD-452036
Date: 08/12/2022

Dear Sirs

Location: 1 LINDSIDE WALK, MANCHESTER, M9 6DH

I acknowledge with thanks your request dated 07/12/2022 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,



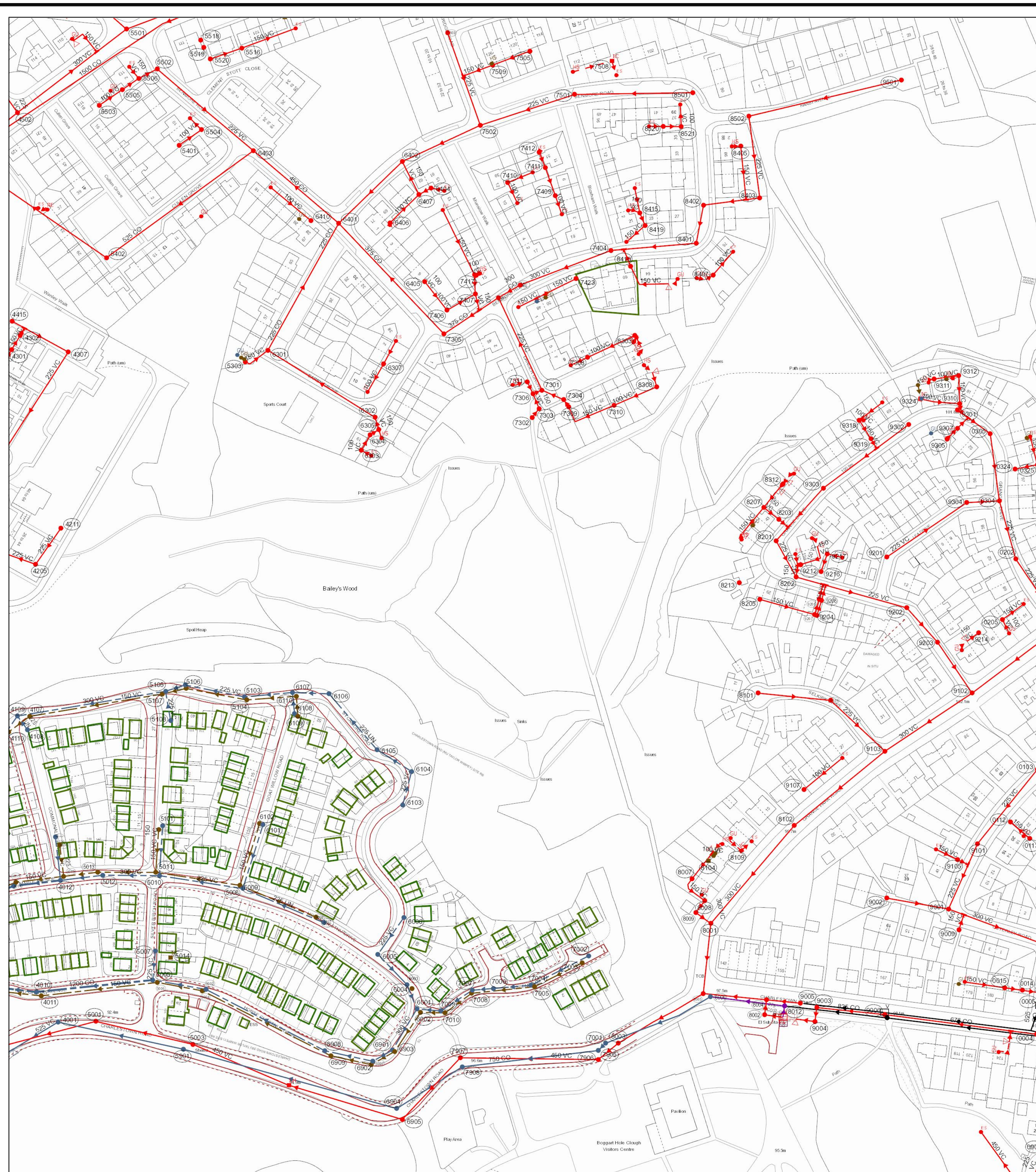
Karen McCormack
Property Searches Manager

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 affect.
- 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.

[illegible]

Retro	Cover	Func	Invert	Size x	Size y	Shape	Matt	Length	Grad
4015	93.88	FO	92.71	150			VC	35.13228	1 in 32
4015	93.88	FO	92.71	150			VC	35.13228	1 in 32
4109	94.97	SW	92.34	300			VC	32.64607	1 in 42
4109	94.97	SW	92.34	300			VC	32.64607	1 in 42
4001		SW	86.79	525			VC	29.06233	
4001		SW	86.79	525			VC	29.06233	
4001	92.04	CO	88.46	450			VC	53.7785	
4001	92.04	CO	88.46	450			VC	53.7785	
4003	93.55	CO	89.01	450			VC	55.0726	1 in 106
4003	93.55	CO	89.01	450			VC	55.0726	1 in 106
4011	92.9	FO	91.56	150			VC	24.6391	1 in 40
4011	92.9	FO	91.56	150			VC	24.6391	1 in 40
4005	94.12	SW	88.58	1200			CO	64.63882	1 in 204
4007	94.92	SW	93.33	225			VC	16.02258	1 in 22
7509		CO		150			VC	17.56463	
7509		CO		150			VC	17.56463	
7501	101.24	CO	98.51	225			VC	54.70832	1 in 166
7501	101.24	CO	98.51	225			VC	54.70832	1 in 166
7404	100.19	IN	95.37	300			VC	53.48832	1 in 297
7404	100.19	IN	95.37	300			VC	53.48832	1 in 297
6303		CO		100			VC	28.68626	
6308		CO		100			VC	25.70632	
6501	101.24	CO	99.35	225			VC	86.34813	1 in 29
6501	101.24	CO	99.35	225			VC	86.34813	1 in 29
6310		CO		150			VC	5.1038	
9304	102.37	CO	99.94	225			VC	18.02776	1 in 139
9304	102.36	CO	98.79	225			VC	33.24154	1 in 128
6207		CO		150			VC	10.69763	
6303	100.03	CO	99.32	225			VC	38.94688	1 in 73
6201	100.74	CO	98.74	225			VC	22.82542	1 in 163
9104	101.77	CO	98.19	225			VC	41.03657	1 in 95
8005		CO		150			VC	18.6521	1 in 168
7908	97.54	CO	93.88	450			VC	76.00658	1 in 123
8012	97.3	SW	95.27	300			VC	35.70357	1 in 137
7001	97.51	SW	92.6	750			CO	5.565854	1 in 28
8003	97.46	CO	93.36	450			VC	14.21267	1 in 25
8005	97.62	CO	94.05	450			VC	54.32558	1 in 84
8008	97.66	CO	0	300			VC	8.190775	
8009	97.53	CO	98.46	450			VC	10.27011	
9001	100.59	CO	98.31	300			VC	87.58472	1 in 180
6008		CO		150			VC	8.603988	
6014		CO		150			VC	10.23413	
6404		CO		100			VC	7.551493	
6404		CO		100			VC	7.551493	
5504		CO		100			VC	8.943911	
5504		CO		100			VC	8.943911	
5518		CO		150			VC	31.64024	
5518		CO		150			VC	31.64024	
6403	100.52	CO	94.51	525			CO	100.2088	1 in 1432
6403	100.52	CO	94.51	525			CO	100.2088	1 in 1432
6401	100.39	CO	94.7	450			CO	61.7171	1 in 363
6401	100.39	CO	94.7	450			CO	61.7171	1 in 363
6302	97.74	CO	96.07	225			VC	69.64194	1 in 170
4108	94.95	FO	93.63	150			VC	17.40154	1 in 79
4108	94.95	FO	93.63	150			VC	17.40154	1 in 79
4103	98.55	SW	96.82	225			VC	19.13797	1 in 101
4107	95.16	FO	93.27	150			VC	14.54713	1 in 25
4105	96.63	SW	94.16	300			VC	14.54713	1 in 28
4108	96.59	FO	94.69	150			VC	62.78629	1 in 45
4108	96.59	FO	94.69	150			VC	13.40705	1 in 134
6108	97.72	SW	95.81	225			UN	20.25471	1 in 54
4205	97.32	CO	91.72	225			VC	18.02776	
4205	97.32	CO	91.72	225			VC	18.02776	
4402	98.4	CO	94.43	525			VC	97.08244	
4402	98.4	CO	94.43	525			VC	97.08244	
4402	98.4	CO	94.43	525			VC	97.08244	
4402	98.4	CO	94.43	525			VC	97.08244	
4501	100.14	CO	98.21	225			VC	50.21952	1 in 173
4501	100.14	CO	98.21	225			VC	50.21952	1 in 173
6007	97.04	FO	94.53	300			VC	22.89226	1 in 135
6008	96.76	FO	94.36	150			VC	75.29721	1 in 79
6001	97.47	SW	94.35	300			VC	26.37988	1 in 132
6001	97.47	SW	94.35	300			VC	26.37988	1 in 132
6901	93.47	SW	88.93	525			VC	70.7922	1 in 33

LEGEND

Abandoned

Foul

Surface Water

Combined

Public Sewer

Private Sewer

Section 104

Rising Main

Sludge Main

Overflow

Water Course

Highway Drain

All point assets follow the standard colour convention:

red - combined

blue - surface water

brown - foul

purple - overflow

●

Manhole

⬮

Head of System

⬮

Extent of Survey

⬮

Rodding Eye

⬮

Inlet

⬮

Discharge Point

⬮

Vortex

⬮

Penstock

⬮

Washout Chamber

⬮

Valve

⬮

Air Valve

⬮

Non Return Valve

⬮

Soakaway

⬮

Gully

⬮

Cascade

⬮

Flow Meter

⬮

Hatch Box

⬮

Oil Interceptor

⬮

Summit

⬮

Drop Shaft

⬮

Orifice Plate

⬮

Side Entry Manhole

○

Outfall

■

Screen Chamber

⬮

Inspection Chamber

⬮

Bifurcation Chamber

⬮

Lamp Hole

⬮

T Junction / Saddle

⬮

Catchpit

⬮

Valve Chamber

⬮

Vent Column

⬮

Vortex Chamber

⬮

Penstock Chamber

□

Network Storage Tank

□

Sewer Overflow

🏠

Ww Treatment Works

▲

Ww Pumping Station

⬮

Septic Tank

⬮

Control Kiosk

▽

Change of Characteristic

MANHOLE FUNCTION

FO Foul

SW Surface Water

CO Combined

OV Overflow

SEWER SHAPE

CI Circular

TR Trapezoidal

EG Egg

AR Arch

OV Oval

BA Barrel

FT Flat Top

HO HorseShoe

RE Rectangular

UN Unspecified

SQ Square

SEWER MATERIAL

AC Asbestos Cement

BR Brick

PE Polyethylene

RP Reinforced Plastic Matrix

CO Concrete

CSB Concrete Segment Bolted

CSU Concrete Segment Unbolted

CC Concrete Box Culverted

PSC Plastic / Steel Composite

GRC Glass Reinforecd Plastic

DI Ductile Iron

PVC Polyvinyl Chloride

CI Cast Iron

SI Spun Iron

ST Steel

VC Vitrified Clay

PP Polypropylene

PF Pitch Fibre

MAC Masonry, Coursed

MAR Masonry, Random

U Unspecified

Address or Site Reference:

1 LINDSIDE WALK,
MANCHESTER,
M9 6DH

OS sheet
Number:
Scale: 1:1250

SD8603SE

Nodes: 273
Sheet: 3 of 4

Date: 08/12/2022

Printed by: Property Searches

The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

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OS sheet SD8603SE
Number:
Scale: 1:1250 Date: 08/12/2022
Nodes: 273
Sheet: 3 of 4

Printed by: Property Searches

**SEWER
RECORDS**

 **United
Utilities**
Water for the North West



Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad	Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
7002	88.3	CO	96.61	300	300	VC	VC	2.201232	1 in 127	7001	88.3	CO	96.61	300	300	VC	VC	2.201232	1 in 127
8805	96.73	CO	96.61	300	300	VC	VC	16.49242	1 in 412	5501	101.71	CO	97.07	375	375	VC	VC	66.60332	1 in 416
8803	96.7	CO	96.61	300	300	VC	VC	21.58703	1 in 186	5501	101.71	CO	97.07	375	375	VC	VC	66.60332	1 in 416
8806	99.87	CO	97.56	300	300	VC	VC	32.01562	1 in 246	5501	101.71	CO	97.07	375	375	VC	VC	66.60332	1 in 416
8807	99.65	CO	96.22	225	225	VC	VC	18.39355	1 in 142	5501	88.21	CO	96	225	225	VC	VC	54.42588	1 in 101
7801	99.44	CO	96.21	225	225	VC	VC	66.23387	1 in 217	5501	88.21	CO	96	225	225	VC	VC	54.42588	1 in 101
7802	99.25	CO	96.61	225	225	VC	VC	42.2019	1 in 90	7001	88.97	CO	96.68	225	225	VC	VC	106.7001	1 in 130
7803	99.69	CO	96.61	225	225	VC	VC	40.209127	1 in 90	5501	88.28	CO	96.68	225	225	VC	VC	40.209127	1 in 90
7814	100	CO	96.61	225	225	VC	VC	5.749976	1 in 126	5501	88.4	CO	96.68	225	225	VC	VC	20.21651	1 in 122
7813	100.61	CO	96.61	225	225	VC	VC	14.07098	1 in 13	5501	88.4	CO	96.68	225	225	VC	VC	20.21651	1 in 122
8801	99.99	CO	96.43	825	825	VC	VC	14.34745	1 in 13	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8808	100	CO	96.43	825	825	VC	VC	14.07098	1 in 13	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8711	100.68	CO	97.06	150	150	VC	VC	34.50707	1 in 103	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
9710	99.4	CO	97.54	300	300	VC	VC	27.56076	1 in 71	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
9712	100	CO	97.54	300	300	VC	VC	10.27354	1 in 71	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
9720	100	CO	97.54	300	300	VC	VC	9.94399	1 in 71	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
9727	100	CO	97.54	300	300	VC	VC	12.57234	1 in 71	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8705	100.38	SW	98.17	225	225	VC	VC	44.4126	1 in 91	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
9702	98.83	SW	97.43	225	225	VC	VC	9	1 in 86	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
9723	100	CO	97.54	300	300	VC	VC	8.693803	1 in 129	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8606	99.62	CO	97.76	375	375	VC	VC	29.60206	1 in 129	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
7712	100	CO	97.54	300	300	VC	VC	2.200388	1 in 129	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8616	100	CO	97.54	300	300	VC	VC	6.201232	1 in 129	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8610	99.7	CO	97.71	150	150	VC	VC	21.96215	1 in 189	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8604	99.72	SW	97.83	300	300	VC	VC	18.89047	1 in 270	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
7602	100.69	CO	98.4	225	225	VC	VC	5.380165	1 in 939	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8506	99.94	FO	97.56	150	150	VC	VC	29.26386	1 in 139	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8508	100.84	FO	98.19	150	150	VC	VC	10.28074	1 in 128	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8508	100	CO	98.19	150	150	VC	VC	14.33085	1 in 128	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
7503	100.95	CO	99.06	225	225	VC	VC	0.6740227	1 in 61	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
7503	100.95	CO	99.06	225	225	VC	VC	54.08327	1 in 61	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8501	100.86	CO	98.96	225	225	VC	VC	65.00769	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8521	100	CO	98.96	225	225	VC	VC	12.20286	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8521	100	CO	98.96	225	225	VC	VC	12.20286	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8401	99.65	CO	95.62	225	225	VC	VC	47.16991	1 in 187	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8401	99.65	CO	95.62	225	225	VC	VC	47.16991	1 in 187	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8419	100	CO	98.96	225	225	VC	VC	13.58874	1 in 187	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8419	100	CO	98.96	225	225	VC	VC	13.58874	1 in 187	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
7410	100	CO	98.96	225	225	VC	VC	12.53881	1 in 187	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
7410	100	CO	98.96	225	225	VC	VC	12.53881	1 in 187	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
7411	100	CO	98.96	225	225	VC	VC	12.53881	1 in 187	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
7411	100	CO	98.96	225	225	VC	VC	12.53881	1 in 187	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
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8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
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8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8502	99.39	CO	96.33	225	225	VC	VC	16.463231	1 in 155	5502	96.81	CO	94.37	225	225	VC	VC	4.472136	1 in 95
8502	99.39	CO	96.33	225	2														

Lazzarin, Filippo

From: wastewaterdeveloperservices@uuplc.co.uk
Sent: 17 January 2023 11:01
To: Wilkinson, Ruth
Cc: Lazzarin, Filippo
Subject: DG5 Register for Manchester area

Good Morning Ruth,

Thank you for your email and the additional information.

The following information applies to all five addresses:

I can confirm that we have no current record of sewer flooding within the vicinity of the proposed development.

Please note that United Utilities Water Limited (U UW) 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 U UW 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.

As with all development sites, we recommend you liaise with our water and wastewater engineers by contacting our Developer Services team so the details of your development proposal can be considered further. Details can be found at the following link.

<https://www.unitedutilities.com/services/builders-developers/>

Should you require any further information please do not hesitate to contact me.

Kind regards



Louise Dack
Customer Advisor Advanced
Developer Services & Metering
Customer Services
T: 01925 233063 (33063 internal)
[unitedutilities.com](https://www.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

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

From: Wilkinson, Ruth [ruth.wilkinson@atkinsglobal.com]

Sent: 16/01/2023 10:16

To: wastewaterdeveloperservices@uuplc.co.uk

Cc: filippo.lazzarin@atkinsglobal.com

Subject: FW: DG5 Register for Manchester area

EXTERNAL EMAIL This email originated outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Good Morning Louise,

The addresses and postcode for the 5 sites are as follows:

1. Benmore Road, M9 6DN
2. White Moss Road, M9 6DA
3. Canberra Street, M11 4NL
4. Queens Road, M40 8TQ
5. Palgrave Avenue, M40 8JW

If you could perform a search on our system, that would be greatly appreciated. If you need any more information please just let me know.

Kind Regards,

Ruth Wilkinson *MEng*

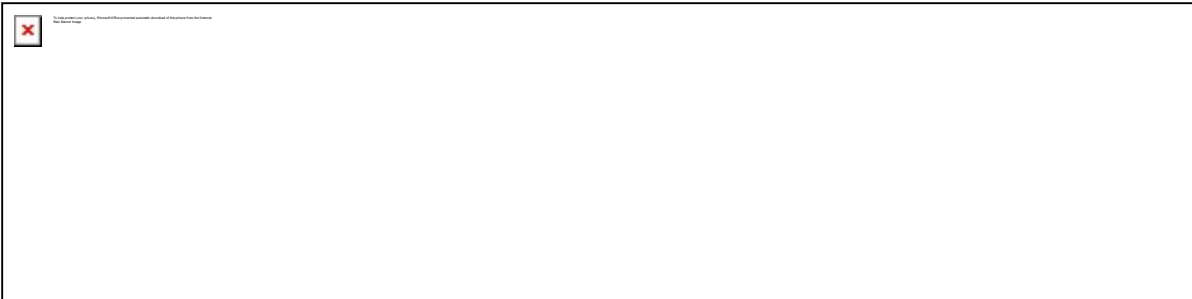
Graduate Civil Engineer, Infrastructure

UK & Europe

Engineering, Civil Engineering & Advanced Technology

 +(44)1214835888

Two Chamberlain Square, Birmingham, West Midlands, B3 3AX



Company



From: wastewaterdeveloperservices@uuplc.co.uk <wastewaterdeveloperservices@uuplc.co.uk>

Sent: 16 January 2023 10:07

To: Lazzarin, Filippo <Filippo.Lazzarin@atkinsglobal.com>

Subject: DG5 Register for Manchester area

Good Morning Filippo,

Thank you for contacting United Utilities.

Unfortunately, we cannot provide a copy of the DG5 register and we cannot provide information regarding specific properties.

We can provide an overview of the area if you can supply the five property addresses.

Our response does not include:

1. any sewer flooding events caused by blockages or collapses which are the result of third party actions, natural events or other actions over which U UW has no control and not a facet of sewer capacity; or
2. any historical sewer flooding events that have been removed from the register as a result of investment in our infrastructure.

If you can provide the full addresses and post codes, we can perform a search on our system.

Kind Regards,



Louise Dack

Customer Advisor Advanced
Developer Services & Metering
Customer Services
T: 01925 233063 (33063 internal)
[unitedutilities.com](https://www.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

From: Lazzarin, Filippo <Filippo.Lazzarin@atkinsglobal.com>
Sent: 12 January 2023 11:06
To: propertysearches@uuplc.co.uk
Subject: DG5 Register for Manchester area

EXTERNAL EMAIL This email originated outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Good Morning,

I am working on Flood Risk Assessments for 5 no. sites in the Manchester area.

In order to assess the risk of flooding from sewers, could you please provide me with a copy of the DG5 register for the Manchester area?

Kind Regards,

Filippo Lazzarin *MEng*
Civil Engineer, Infrastructure
CE&AT MIDLANDS, SW & WALES
Engineering, Design & Project Management

☐ +441214835583

Two Chamberlain Square, Birmingham, B3 3AX

Company

☐ ☐ ☐ ☐

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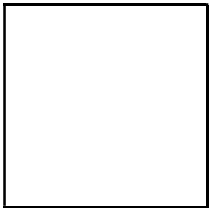
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**MANCHESTER
CITY COUNCIL**

Lead Local Flood Authority

Highways Service
Growth and Neighbourhoods Directorate
Manchester City Council
PO Box 532
Town Hall
Manchester
M60 2LA

Email: floodriskmanagement@manchester.gov.uk

DATE 04/01/2023

Dear Sir or Madam,

RE: Our Ref: MCC004B/01/2023

We acknowledge with thanks your payment received on 15/12/2022 for our LLFA data screen service.

Please find enclosed plan showing the results of the data screen. The position of features shown on this plan is approximate only and is given in accordance with the best information currently available.

The enclosed plan cannot be used to substitute a competent site investigation.

The enclosed plan is being provided to you subject to Manchester City Council's terms and conditions which are shown attached.

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

If you have any queries regarding this matter, please do not hesitate to contact us.

Yours Faithfully,

A handwritten signature in black ink, appearing to be 'NB' or similar initials.

Neil Bayliss-Rowe, Highways Development Control & Flood Risk Manager, Lead Local Flood Authority

TERMS AND CONDITIONS – LLFA DATA SCREEN

These provisions apply to LLFA data supplied by Manchester City Council (“MCC”).

TERMS AND CONDITIONS:

- This data 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.
- MCC has taken all reasonable care to compile this data Map. This data Map and any information supplied with it is provided for general guidance only and MCC makes no representation, undertaking or warranty of any kind as to its accuracy, completeness or being up to date is given or implied.
- In particular, the position of any culverted assets shown on the data Map are approximate only. MCC strongly recommends that a comprehensive site investigation is undertaken in addition to reviewing this data Map to determine and ensure the precise location of any assets. The exact location, positions and depths should be obtained by an appropriate survey which may include but shall not be limited to GPR and CCTV.
- The data screened may be modified over time without notice and therefore this data 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 data Map have been made subsequent to issue and prior to any works being carried out.
- This data 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) or for the purpose of determining the suitability of a point of connection to discharge.
- No person or legal entity, including any company shall be relieved from any liability howsoever and whensoever arising from damages of any kind caused to assets by reason of the actual position and/or existence of assets being different from those shown on the data 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 affect.
- 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 MCC from bringing proceedings in any other competent jurisdiction, whether concurrently or otherwise.

DATA SCREEN SYMBOLOGY

Bridge

-  Good
-  Fair
-  Poor
-  Very Poor
-  Unknown

Trash Screen

-  Good
-  Fair
-  Poor
-  Very Poor
-  Unknown

Culvert Orifice

-  Very Good
-  Good
-  Fair
-  Poor
-  Very Poor
-  Unknown

Culvert Conduit

-  CCTV surveyed
-  Not CCTV surveyed
-  Ordinary Watercourse Conduit
-  MCC SuDS
-  MCC Flood Incident Points
-  MCC Section 19 Report
-  MCC Flood Incident Polygons
-  MCC Local Authority Boundary

Supplementary Information where available:

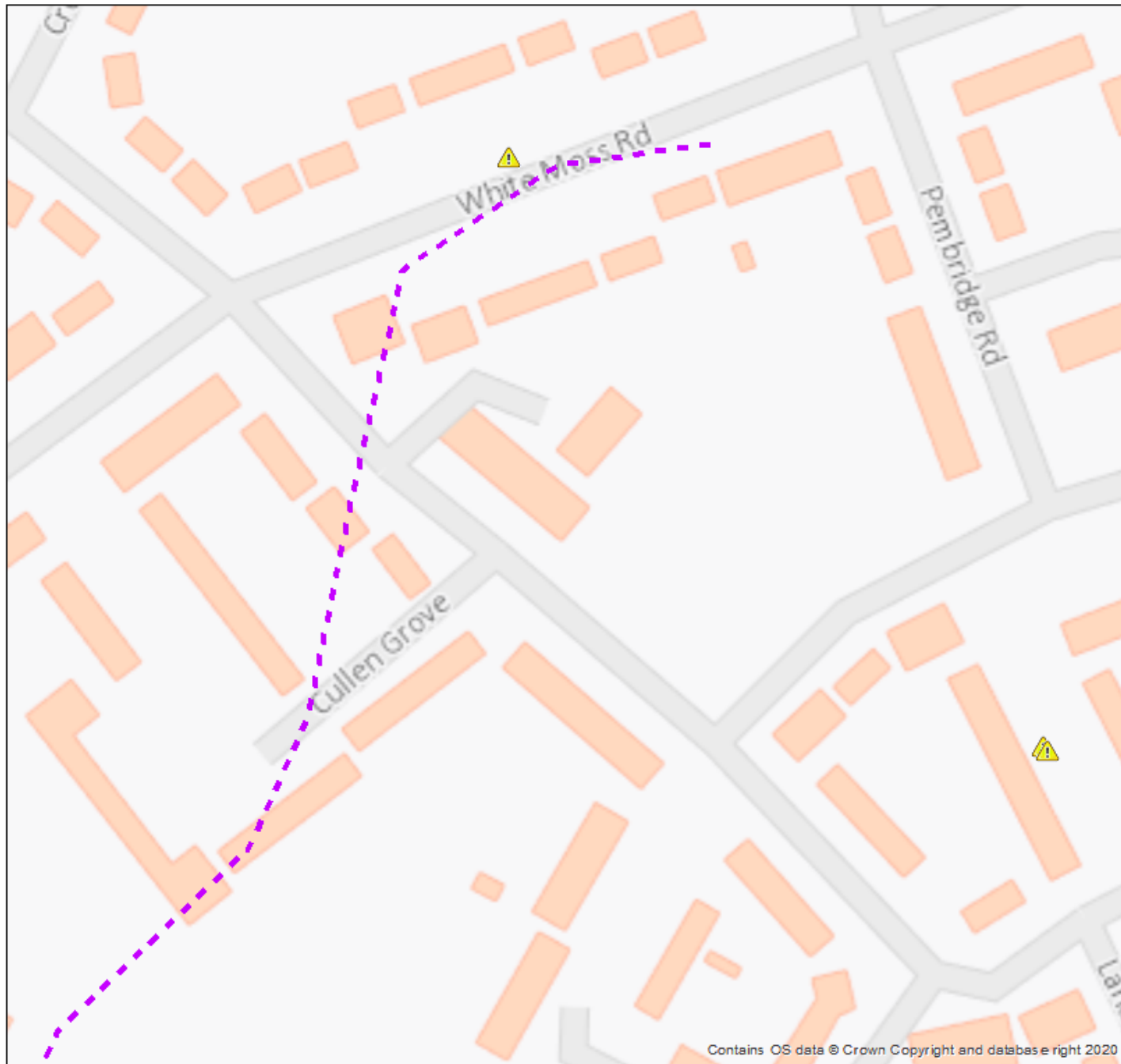
Critical Drainage Area – The Site is in the Conurbation Core CDA.

Flood Incidents – The nearest flood/drainage incident on record is approximately 40m north of the Site, dated 16/04/2012, described as “Grid / gully blocked” with further detail “standing water in wet conditions and some flood damage to the footway.”

Culvert Conduits – The asset register highlights that the Lionfield Brook culverted ordinary watercourse may be in close proximity to the Site (passing in a route approximately 30m north of the site and 60m west of the site). 3rd party historic OS mapping indicates a ‘river’ was proximal to the southern Site boundary. This culvert is an indicative asset and has not been verified with survey.

Survey and Design Archive – The 1984 drainage survey of major assets (enclosed) does not highlight the indicative culvert asset.

Any other information identified by LLFA officer during screening – While our records are frequently updated to ensure the highest level of accuracy, the records cannot guarantee 100% accuracy for all MCC underground assets. We would request that the applicant informs the onsite contractor to remain observant and to take the appropriate safety precautions during excavation works. If any major unknown drainage assets are found beneath the site, then further investigation works should take place to identify the asset and MCC should be contacted immediately.



**MANCHESTER
CITY COUNCIL**

LLFA DATA SCREEN

Address/Site Ref:
Benmore Road, M9 6DN

Our Ref: **MCC004B/01/2023**

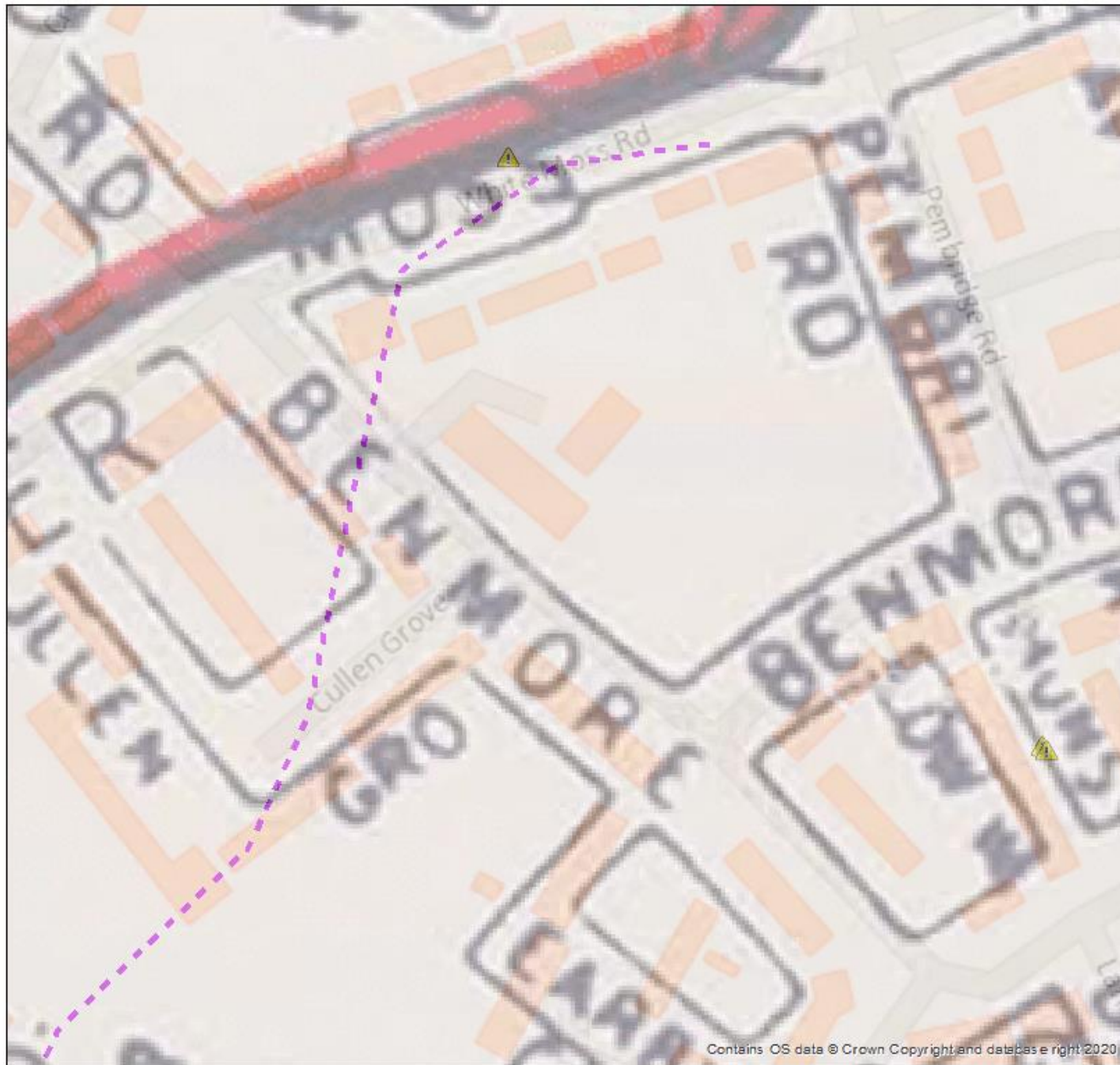
Author: Manchester City Council LLFA
Date: 04/01/2023
Scale: 1:1,250

The position of features shown on this plan is approximate only and is given in accordance with the best information currently available. Manchester City Council will not accept liability for any loss or damage caused by the actual position being different from those shown.

0 5 10 20
Meters



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**MANCHESTER
CITY COUNCIL**

LLFA DATA SCREEN

Address/Site Ref:
Benmore Road, M9 6DN

Our Ref: **MCC004B/01/2023**

Author: Manchester City Council LLFA
Date: 04/01/2023
Scale: 1:1,250

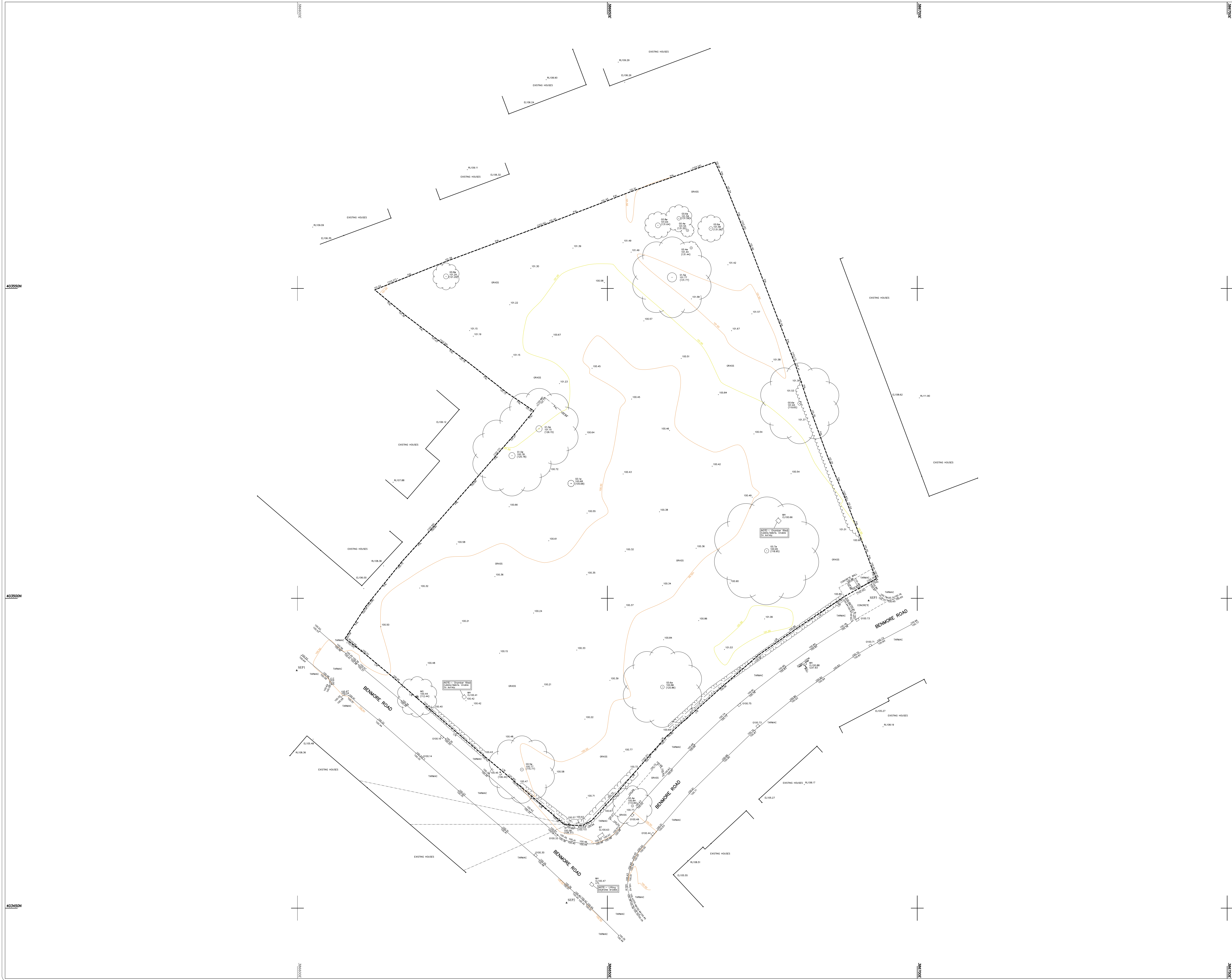
The position of features shown on this plan is approximate only and is given in accordance with the best information currently available. Manchester City Council will not accept liability for any loss or damage caused by the actual position being different from those shown.

0 5 10 20
Meters



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Appendix B. Drawings



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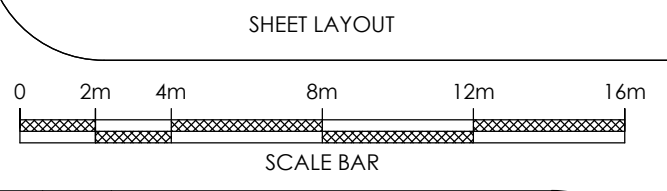


File Name: S21437-T-30.dwg

LEGEND	
AB	ABUTMENT
BE	BELIEF BAND
BN	BANK
BR	BROOK
BS	BUILDING
BT	BT INSPECTION COVER
CC	CONCRETE CURB
CD	CONCRETE DRAIN
CO	CONCRETE
CP	CONCRETE PAVEMENT
CU	CURB
CV	CANAL
DD	DRAINAGE DRAIN
DE	DRAINAGE
DF	DRAINAGE FLOW
EG	EGG INSPECTION COVER
EL	ELEVATION
EP	ELEVATION POINT
ER	ELEVATION
ES	ELEVATION
ET	ELEVATION
EV	ELEVATION
EW	ELEVATION
EX	ELEVATION
FA	FACILITY
FB	FACILITY
FC	FACILITY
FD	FACILITY
FE	FACILITY
FF	FACILITY
FG	FACILITY
FH	FACILITY
FI	FACILITY
FJ	FACILITY
FK	FACILITY
FL	FACILITY
FM	FACILITY
FN	FACILITY
FO	FACILITY
FP	FACILITY
FQ	FACILITY
FR	FACILITY
FS	FACILITY
FT	FACILITY
FU	FACILITY
FV	FACILITY
FW	FACILITY
FX	FACILITY
FY	FACILITY
FZ	FACILITY
GA	GRASS
GB	GRASS
GC	GRASS
GD	GRASS
GE	GRASS
GF	GRASS
GG	GRASS
GH	GRASS
GI	GRASS
GJ	GRASS
GK	GRASS
GL	GRASS
GM	GRASS
GN	GRASS
GO	GRASS
GP	GRASS
GQ	GRASS
GR	GRASS
GS	GRASS
GT	GRASS
GU	GRASS
GV	GRASS
GW	GRASS
GX	GRASS
GY	GRASS
GZ	GRASS
HA	HARDWARE
HB	HARDWARE
HC	HARDWARE
HD	HARDWARE
HE	HARDWARE
HF	HARDWARE
HG	HARDWARE
HH	HARDWARE
HI	HARDWARE
HJ	HARDWARE
HK	HARDWARE
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HP	HARDWARE
HQ	HARDWARE
HR	HARDWARE
HS	HARDWARE
HT	HARDWARE
HU	HARDWARE
HV	HARDWARE
HW	HARDWARE
HX	HARDWARE
HY	HARDWARE
HZ	HARDWARE
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IB	IRON
IC	IRON
ID	IRON
IE	IRON
IF	IRON
IG	IRON
IH	IRON
II	IRON
IJ	IRON
IK	IRON
IL	IRON
IM	IRON
IN	IRON
IO	IRON
IP	IRON
IQ	IRON
IR	IRON
IS	IRON
IT	IRON
IU	IRON
IV	IRON
IW	IRON
IX	IRON
IY	IRON
IZ	IRON
JA	JAIL
JB	JAIL
JC	JAIL
JD	JAIL
JE	JAIL
JF	JAIL
JG	JAIL
JH	JAIL
JI	JAIL
JJ	JAIL
JK	JAIL
JL	JAIL
JM	JAIL
JN	JAIL
JO	JAIL
JP	JAIL
JQ	JAIL
JR	JAIL
JS	JAIL
JT	JAIL
JU	JAIL
JV	JAIL
JW	JAIL
JX	JAIL
JY	JAIL
JZ	JAIL
KA	KAYAK
KB	KAYAK
KC	KAYAK
KD	KAYAK
KE	KAYAK
KF	KAYAK
KG	KAYAK
KH	KAYAK
KI	KAYAK
KJ	KAYAK
KK	KAYAK
KL	KAYAK
KM	KAYAK
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KP	KAYAK
KQ	KAYAK
KR	KAYAK
KS	KAYAK
KT	KAYAK
KU	KAYAK
KV	KAYAK
KW	KAYAK
KX	KAYAK
KY	KAYAK
KZ	KAYAK
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LI	LAND
LJ	LAND
LK	LAND
LL	LAND
LM	LAND
LN	LAND
LO	LAND
LP	LAND
LQ	LAND
LR	LAND
LS	LAND
LT	LAND
LU	LAND
LV	LAND
LW	LAND
LX	LAND
LY	LAND
LZ	LAND
MA	MATERIAL
MB	MATERIAL
MC	MATERIAL
MD	MATERIAL
ME	MATERIAL
MF	MATERIAL
MG	MATERIAL
MH	MATERIAL
MI	MATERIAL
MJ	MATERIAL
MK	MATERIAL
ML	MATERIAL
MM	MATERIAL
MN	MATERIAL
MO	MATERIAL
MP	MATERIAL
MQ	MATERIAL
MR	MATERIAL
MS	MATERIAL
MT	MATERIAL
MU	MATERIAL
MV	MATERIAL
MW	MATERIAL
MX	MATERIAL
MY	MATERIAL
MZ	MATERIAL
NA	NATURAL
NB	NATURAL
NC	NATURAL
ND	NATURAL
NE	NATURAL
NF	NATURAL
NG	NATURAL
NH	NATURAL
NI	NATURAL
NJ	NATURAL
NK	NATURAL
NL	NATURAL
NM	NATURAL
NO	NATURAL
NP	NATURAL
NQ	NATURAL
NR	NATURAL
NS	NATURAL
NT	NATURAL
NU	NATURAL
NV	NATURAL
NW	NATURAL
NX	NATURAL
NY	NATURAL
NZ	NATURAL
OA	OPEN AREA
OB	OPEN AREA
OC	OPEN AREA
OD	OPEN AREA
OE	OPEN AREA
OF	OPEN AREA
OG	OPEN AREA
OH	OPEN AREA
OI	OPEN AREA
OJ	OPEN AREA
OK	OPEN AREA
OL	OPEN AREA
OM	OPEN AREA
ON	OPEN AREA
OO	OPEN AREA
OP	OPEN AREA
OQ	OPEN AREA
OR	OPEN AREA
OS	OPEN AREA
OT	OPEN AREA
OU	OPEN AREA
OV	OPEN AREA
OW	OPEN AREA
OX	OPEN AREA
OY	OPEN AREA
OZ	OPEN AREA
PA	PAVED
PB	PAVED
PC	PAVED
PD	PAVED
PE	PAVED
PF	PAVED
PG	PAVED
PH	PAVED
PI	PAVED
PJ	PAVED
PK	PAVED
PL	PAVED
PM	PAVED
PN	PAVED
PO	PAVED
PP	PAVED
PQ	PAVED
PR	PAVED
PS	PAVED
PT	PAVED
PU	PAVED
PV	PAVED
PW	PAVED
PX	PAVED
PY	PAVED
PZ	PAVED
QA	QUARRY
QB	QUARRY
QC	QUARRY
QD	QUARRY
QE	QUARRY
QF	QUARRY
QG	QUARRY
QH	QUARRY
QI	QUARRY
QJ	QUARRY
QK	QUARRY
QL	QUARRY
QM	QUARRY
QN	QUARRY
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SK	SAND
SL	SAND
SM	SAND
SN	SAND
SO	SAND
SP	SAND
SQ	SAND
SR	SAND
SS	SAND
ST	SAND
SU	SAND
SV	SAND
SW	SAND
SX	SAND
SY	SAND
SZ	SAND
TA	TERRACE
TB	TERRACE
TC	TERRACE
TD	TERRACE
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TT	TERRACE
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TY	TERRACE
TZ	TERRACE
UA	UNDERGROUND
UB	UNDERGROUND
UC	UNDERGROUND
UD	UNDERGROUND
UE	UNDERGROUND
UF	UNDERGROUND
UG	UNDERGROUND
UH	UNDERGROUND
UI	UNDERGROUND
UJ	UNDERGROUND
UK	UNDERGROUND
UL	UNDERGROUND
UM	UNDERGROUND
UN	UNDERGROUND
UO	UNDERGROUND
UP	UNDERGROUND
UQ	UNDERGROUND
UR	UNDERGROUND
US	UNDERGROUND
UT	UNDERGROUND
UU	UNDERGROUND
UV	UNDERGROUND
UW	UNDERGROUND
UX	UNDERGROUND
UY	UNDERGROUND
UZ	UNDERGROUND
VA	VALLEY
VB	VALLEY
VC	VALLEY
VD	VALLEY
VE	VALLEY
VF	VALLEY
VG	VALLEY
VH	VALLEY
VI	VALLEY
VJ	VALLEY
VK	VALLEY
VL	VALLEY
VM	VALLEY
VO	VALLEY
VP	VALLEY
VQ	VALLEY
VR	VALLEY
VS	VALLEY
VT	VALLEY
VU	VALLEY
VV	VALLEY
VW	VALLEY
VX	VALLEY
VY	VALLEY
VZ	VALLEY
WA	WATER
WB	WATER
WC	WATER
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WE	WATER
WF	WATER
WG	WATER
WH	WATER
WI	WATER
WJ	WATER
WK	WATER
WL	WATER
WM	WATER
WN	WATER
WO	WATER
WP	WATER
WQ	WATER
WR	WATER
WS	WATER
WT	WATER
WU	WATER
WV	WATER
WW	WATER
WX	WATER
WY	WATER
WZ	WATER
XA	X-ROAD
XB	X-ROAD
XC	X-ROAD
XD	X-ROAD
XE	X-ROAD
XF	X-ROAD
YG	Y-ROAD
YH	Y-ROAD
YI	Y-ROAD
YJ	Y-ROAD
YK	Y-ROAD
YL	Y-ROAD
YM	Y-ROAD
YN	Y-ROAD
YO	Y-ROAD
YP	Y-ROAD
YQ	Y-ROAD
YR	Y-ROAD
YS	Y-ROAD
YT	Y-ROAD
YU	Y-ROAD
YV	Y-ROAD
YW	Y-ROAD
YX	Y-ROAD
YY	Y-ROAD
YZ	Y-ROAD
ZA	Z-ROAD
ZB	Z-ROAD
ZC	Z-ROAD
ZD	Z-ROAD
ZE	Z-ROAD
ZF	Z-ROAD

NOTES:
All levels are to G.D. (British Datum). Distances are to nearest 10m.
Survey carried out on a plane local grid, orientated to National Grid.

SURVEY STATIONS			
Station	Easting	Northing	Height
SP1	38041.80	40448.00	100.00
SP2	38041.80	40448.00	100.00
SP3	38041.80	40448.00	100.00



REV	DATE	DESCRIPTION

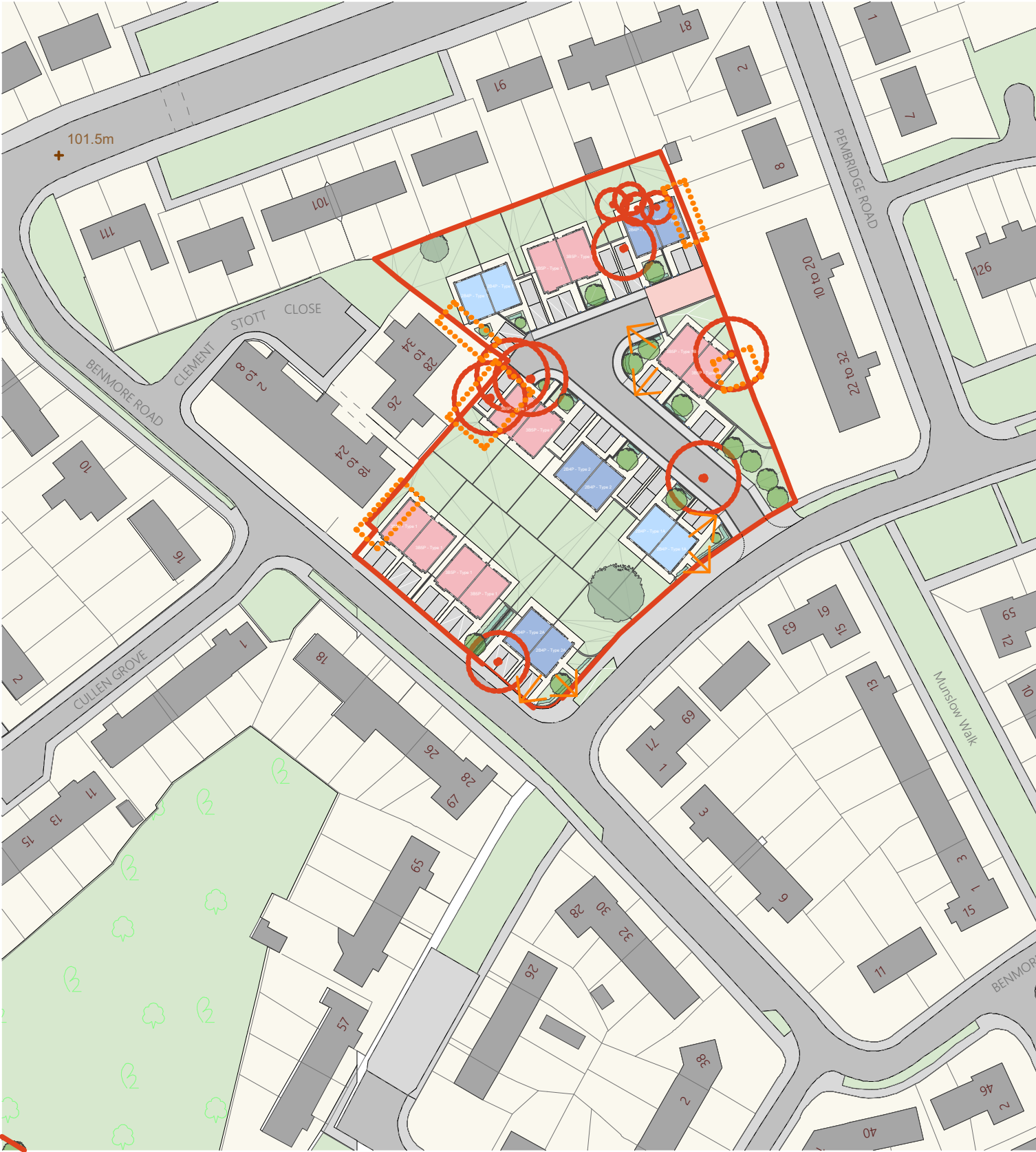


Client
Curtis Consulting Limited
Rose Wharf
78-80 East Street
Leeds
LS1 4EE

Project Title
Topographical Survey of Land at:
Former White Moss Day Centre
Benmore Road
Manchester
M9 6EH

Surveyed	Drawn	Checked
S.Howard	M.Chaffon	R.Critchley
Scale	Date	Drawing Ref.
1:200	Apr 21	S21437-T
No.	Size	Rev
01	A0	--

PROPOSED PLAN



1 Proposed Site Plan 1:1000

- N
- SITE BOUNDARY
- SITE AREA : 5283m²
- EXISTING TREES
 - EXISTING TREES TO BE REMOVED
 - PROPOSED SOFT LANDSCAPING
(Subject to a detailed landscaping strategy)
 - PROPOSED TREES
(Subject to a detailed landscaping strategy)
 - EV 7kW Charge Point
 - DUAL ASPECT UNITS TO ADDRESS EACH CORNER
 - POTENTIAL PARTY WALL DISCUSSIONS NEEDED

	House Type	Total
	2B4P House Type 1 @ 79m ²	4
	2B4P House Type 2 @ 79m ²	6
	3B5P House Type 1 @ 93m ²	10
		20



Dimensions are to be checked on site. Do not scale from drawings. Report discrepancies to the Architect.

PROPOSED MASSING



100
Millimetres
0 10

CLASSIFICATION - Baseline (Low Risk)

UNKNOWN CULVERT, PRESENCE AND LOCATION TO BE VERIFIED

VORTEX FLOW CONTROL
RESTRICTING FLOW TO 3.3 l/s

NEW PIPE CONNECTION INTO EXISTING MANHOLE
CHAMBER. CHAMBER MAY REQUIRE MODIFICATION TO
ACCEPT NEW CONNECTION

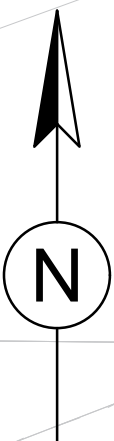
UU REF. 6403
IL 94.51

OVERSIZED PIPES PROVIDING 160m³
STORAGE

UU REF. 6402
IL 97.8

UU REF. 6401
IL 94.7

DO NOT SCALE



SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

- PROXIMITY TO LIVE TRAFFIC
- BURIED SERVICES

MAINTENANCE/CLEANING

- PROXIMITY TO LIVE TRAFFIC
- BURIED SERVICES

DECOMMISSIONING/DEMOLITION

- PROXIMITY TO LIVE TRAFFIC
- BURIED SERVICES

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

NOTES:

1. ALL DIMENSIONS ARE IN METRES (m) UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE SHOWN IN METRES ABOVE ORDNANCE DATUM (mAOD) UNLESS OTHERWISE STATED.
3. TOPOGRAPHICAL SURVEY DATA TAKEN FROM DRAWING REFERENCE S21437-T, PROVIDED BY SURVEY & ENGINEERING PROJECTS, DATED APRIL 21.
5. SITE LAYOUT PROVIDED BY JOHN MCCALL ARCHITECTS (REF. PL.003, RECEIVED IN NOVEMBER 22).
6. SEWER RECORDS TRACED OVER PDF VERSION OF UNITED UTILITIES REPORT (REF. Single Utility Report - 115545 - Whitmore Road & Benmore, RECEIVED 12/12/2022).
7. CULVERTED WATERCOURSE TRACED OVER PDF VERSION OF MANCHESTER CITY COUNCIL LLFA DATA SCREEN (REF. DataScreen_BenmoreRoad, RECEIVED 05/01/2023).

KEY:

- SITE BOUNDARY
- PROPOSED SURFACE WATER
- PROPOSED FOUL WATER
- PROPOSED UU COMBINED
- EXISTING UU COMBINED
- CULVERTED WATERCOURSE (INDICATIVE)

P02	31/01/23	UPDATED DRAINAGE	TKP	FL	CB
P01	30/01/23	FIRST ISSUE	RW	FL	CB

Rev.	Date	Description	By	Chk'd	App'd
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Drawing Status	Suitability
FOR INFORMATION	S2

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**the guinness partnership**

Two Chamberlain Square
Birmingham
West Midlands
B3 3AX

Tel: +44 (0)121 483 5757
Fax:
www.atkinsglobal.com
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Project Title

PROJECT 500 MANCHESTER

Drawing Title

BENMORE ROAD
EXISTING AND PROPOSED
DRAINAGE LAYOUT

Scale	Designed	Drawn	Checked	Authorised
SCALE	RW	RW	FL	CB
Original Size	Date	Date	Date	Date
A1	20/01/23	20/01/23	27/01/23	30/01/23

Drawing Number	Revision
5218589-ATK-BN-XX-DR-D-0602	P02

CLASSIFICATION - Baseline (Low Risk)

USER: PANG001 Date: 31/12/23 16:06:48 Filename: \\wales.com\project\GIS\BENCH\Project\Drawings\18589_Guinness_Partnership_Site_Manchester_P001\WPD\CAD\0602\18589-ATK-BN-XX-DR-D-0602_Drainage_Layout.dwg Internal Project Number: 5218589

Appendix C. SuDS Selection

The following tables are taken from CIRIA C697 The SuDS Manual (2007).

CIRIA C697, Table 5.2 Land Use Selection Matrix

SuDS group	Technique	Low density	Residential	Local roads	Commercial	Hotspots	Construction site	Brownfield	Contaminated land
Retention	Retention pond	Y	Y	Y ₁	Y ₂	Y ₂	Y ₃	Y	Y ₂
	Subsurface storage	Y	Y	Y	Y	Y	Y ₃	Y	Y
Wetland	Shallow wetland	Y	Y	Y ₁	Y ₂	Y ₂	N	Y	Y ₂
	Extended detention wetland	Y	Y	Y ₁	Y ₂	Y ₂	N	Y	Y ₂
	Pond/wetland	Y	Y	Y ₁	Y ₂	Y ₂	N	Y	Y ₂
	Pocket wetland	Y	Y	Y ₁	Y ₂	Y ₂	N	Y	Y ₂
	Submerged gravel wetland	Y	Y	Y ₁	Y ₂	Y ₂	N	Y	Y ₂
	Wetland channel	Y	Y	Y ₁	Y ₂	Y ₂	N	Y	Y ₂
Infiltration	Infiltration trench	Y	Y	Y ₁	Y ₂	N	N	Y	Y ₄
	Infiltration basin	Y	Y	Y ₁	Y ₂	N	N	Y	Y ₄
	Soakaway	Y	Y	Y ₁	Y ₂	N	N	Y	Y ₄
Filtration	Surface sand filter	N	Y	Y ₁	Y ₂	Y ₂	N	Y	Y ₂
	Sub-surface sand filter	N	Y	Y ₁	Y ₂	Y ₂	N	Y	Y ₂
	Perimeter sand filter	N	N	Y ₁	Y ₂	Y ₂	N	Y	Y ₂
	Bioretention/filter strip	Y	Y	Y ₁	Y ₂	Y ₂	N	Y	Y ₂
	Filter trench	Y	Y	Y ₁	Y ₂	Y ₂	N	Y	Y ₂
Detention	Detention basin	Y	Y	Y ₁	Y ₂	Y _{1,2}	Y ₃	Y	Y ₂
Open channels	Conveyance swale	Y	Y	Y ₁	Y ₂	Y ₂	Y ₃	Y	Y ₂
	Enhanced dry swale	Y	Y	Y ₁	Y ₂	Y ₂	Y ₃	Y	Y ₂
	Enhanced wet swale	Y	Y	Y ₁	Y ₂	Y ₁	Y ₃	Y	Y ₂
Source control	Green roof	Y	Y	N	Y ₂	Y	N	Y	Y
	Rainwater harvesting	Y	Y	N	Y ₂	N	N	Y	Y
	Permeable paving	Y	Y	N	Y ₂	Y ₁	N	Y	Y ₂

Y: Yes N: No

¹ May require two treatment train stages, depending on type and intensity of road use and receiving water sensitivity.

² May require three treatment train stages, depending on receiving watercourse sensitivity.

³ Will require draw-down and rehabilitation following construction activities, prior to use as a permanent drainage system.

⁴ Providing designs prevent mobilisation of contamination.

CIRIA C697, Table 5.4 Site Characteristics Selection Matrix

SuDS group	Technique	Soils		Area draining to a single SuDS component		Minimum depth to water table		Site slope		Available head		Available space	
		Impermeable	Permeable	0 - 2ha	>2ha	0 - 1m	>1m	0 - 5%	>5%	0 - 1m	1 - 2m	Low	High
Retention	Retention pond	Y	Y ₁	Y	Y ₅	Y	Y	Y	Y	Y	Y	N	Y
	Subsurface storage	Y	Y	Y	Y ₅	Y	Y	Y	Y	Y	Y	Y	Y
Wetland	Shallow wetland	Y ₂	Y ₄	Y ₄	Y ₆	Y ₂	Y ₂	Y	N	Y	Y	N	Y
	Extended detention wetland	Y ₂	Y ₄	Y ₄	Y ₆	Y ₂	Y ₂	Y	N	Y	Y	N	Y
	Pond/wetland	Y ₂	Y ₄	Y ₄	Y ₆	Y ₂	Y ₂	Y	N	Y	Y	N	Y
	Pocket wetland	Y ₂	Y ₄	Y ₄	N	Y ₂	Y ₂	Y	N	Y	Y	Y	Y
	Submerged gravel wetland	Y ₂	Y ₄	Y ₄	Y ₆	Y ₂	Y ₂	Y	N	Y	Y	N	Y
	Wetland channel	Y ₂	Y ₄	Y ₄	Y ₆	Y ₂	Y ₂	Y	N	Y	Y	N	Y
Infiltration	Infiltration trench	N	Y	Y	N	N	Y	Y	Y	Y	N	Y	Y
	Infiltration basin	N	Y	Y	Y ₅	N	Y	Y	Y	Y	N	N	Y
	Soakaway	N	Y	Y	N	N	Y	Y	Y	Y	N	Y	Y
Filtration	Surface sand filter	Y	Y	Y	Y ₅	N	Y	Y	N	N	Y	N	Y
	Sub-surface sand filter	Y	Y	Y	N	N	Y	Y	N	N	Y	Y	Y
	Perimeter sand filter	Y	Y	Y	N	N	Y	Y	N	Y	Y	Y	Y
	Bio-retention/filter strip	Y	Y	Y	N	N	Y	Y	N	Y	Y	N	Y
	Filter trench	Y	Y ₁	Y	N	N	Y	Y	N	Y	Y	Y	Y
Detention	Detention basin	Y	Y ₁	Y	Y ₅	N	Y	Y	Y	N	Y	N	Y
Open channels	Conveyance swale	Y	Y	Y	N	N	Y	Y	N ₃	Y	N	N	Y
	Enhanced dry swale	Y	Y	Y	N	N	Y	Y	N ₃	Y	N	N	Y
	Enhanced wet swale	Y ₂	Y ₄	Y	N	Y	Y	Y	N ₃	Y	N	N	Y
Source control	Green roof	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y
	Rainwater harvesting	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y
	Permeable paving	Y	Y	Y	Y	N	Y	Y	N	Y	Y	Y	Y

Y: Yes N: No

¹ With liner

² With surface baseflow

³ Unless follows contours

⁴ With liner and constant surface baseflow, or high ground water table

⁵ Possible, but not recommended (implies appropriate management train not in place)

⁶ Where high flows are diverted around SuDS component.

Appendix D. Surface Water Calculations

Atkins (Epsom)		Page 1
Woodcoste Grove Ashley Road, Epsom Surrey, KT18 5BW		
Date 31/01/2023 15:08 File BN_NETWORKS.MDX	Designed by LAZZ4777 Checked by	
Innovyze Network 2020.1.3		

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	1	PIMP (%)	100
M5-60 (mm)	18.500	Add Flow / Climate Change (%)	0
Ratio R	0.336	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

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Atkins (Epsom)		Page 2
Woodcoste Grove Ashley Road, Epsom Surrey, KT18 5BW		
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Innovyze	Network 2020.1.3	

Online Controls for Storm

Hydro-Brake® Optimum Manhole: S5, DS/PN: S1.004, Volume (m³): 60.4

Unit Reference	MD-SHE-0068-3300-2900-3300
Design Head (m)	2.900
Design Flow (l/s)	3.3
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	68
Invert Level (m)	97.683
Minimum Outlet Pipe Diameter (mm)	100
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.900	3.3
Flush-Flo™	0.297	2.0
Kick-Flo®	0.602	1.6
Mean Flow over Head Range	-	2.4

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	1.7	1.200	2.2	3.000	3.4	7.000	5.0
0.200	1.9	1.400	2.4	3.500	3.6	7.500	5.1
0.300	2.0	1.600	2.5	4.000	3.8	8.000	5.3
0.400	2.0	1.800	2.6	4.500	4.0	8.500	5.5
0.500	1.9	2.000	2.8	5.000	4.3	9.000	5.6
0.600	1.6	2.200	2.9	5.500	4.4	9.500	5.8
0.800	1.8	2.400	3.0	6.000	4.6		
1.000	2.0	2.600	3.1	6.500	4.8		

Atkins (Epsom)

Page 3

Woodcote Grove
Ashley Road, Epsom
Surrey, KT18 5BW

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Network 2020.1.3

100 year Return Period 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 0

Number of Online Controls 1

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 0.336

Region England and Wales Cv (Summer) 0.750

M5-60 (mm) 18.500 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0

Analysis Timestep 2.5 Second Increment (Extended)

DTS Status OFF

DVD Status ON

Inertia Status ON

Profile(s) Summer and Winter

Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440, 2160, 2880

Return Period(s) (years) 100

Climate Change (%) 45

									Water
	US/MH		Return	Climate	First (X)	First (Y)	First (Z)	Overflow	Level
PN	Name	Storm	Period	Change	Surcharge	Flood	Overflow	Act.	(m)
S1.000	S1	480 Winter	100	+45%					99.298
S1.001	S2	480 Winter	100	+45%					99.298
S2.000	S3	15 Winter	100	+45%					99.375
S1.002	S3	480 Winter	100	+45%	100/360 Winter				99.298
S3.000	S5	480 Winter	100	+45%					99.298
S1.003	S4	480 Winter	100	+45%	100/240 Winter				99.298
S1.004	S5	480 Winter	100	+45%	100/15 Summer				99.298
S1.005	S6	480 Winter	100	+45%					97.713

Surcharged Flooded

Half Drain Pipe

US/MH

Depth

Volume

Flow / Overflow

Time

Flow

Level

PN

Name

(m)

(m³)

Cap.

(l/s)

(mins)

(l/s)

Status

Exceeded

S1.000

S1

-0.069

0.000

0.00

0.1

OK

S1.001

S2

-0.042

0.000

0.00

0.2

OK

S2.000

S3

-0.154

0.000

0.46

28.1

OK

S1.002

S3

0.083

0.000

0.01

9.8

SURCHARGED

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Atkins (Epsom)

Page 1

Woodcote Grove
Ashley Road, Epsom
Surrey, KT18 5BW

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Micro
Drainage

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor 1.000
Hot Start (mins) 0
Hot Start Level (mm) 0
Manhole Headloss Coeff (Global) 0.500
Foul Sewage per hectare (l/s) 0.000

Additional Flow - % of Total Flow 0.000
MADD Factor * 10m³/ha Storage 2.000
Inlet Coeffiecient 0.800
Flow per Person per Day (l/per/day) 0.000

Number of Input Hydrographs 0
Number of Online Controls 1
Number of Offline Controls 0

Number of Storage Structures 0
Number of Time/Area Diagrams 0
Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH
FEH Rainfall Version 2013
Site Location GB 386560 403466 SD 86560 03466
Data Type Point
Cv (Summer) 0.750
Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
Analysis Timestep 2.5 Second Increment (Extended)
DTS Status OFF
DVD Status ON
Inertia Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440, 2160, 2880
Return Period(s) (years) 100
Climate Change (%) 45

US/MH
PN Name Storm

Return
Period

Climate
Change

First (X)
Surcharge

First (Y)
Flood

First (Z)
Overflow

Overflow
Act.

S1.000
S1.001
S2.000
S1.002
S3.000
S1.003
S1.004
S1.005

S1 480 Winter
S2 480 Winter
S3 480 Winter
S3 480 Winter
S5 480 Winter
S4 480 Winter
S5 480 Winter
S6 480 Winter

100
100
100
100
100
100
100
100

+45%
+45%
+45%
+45%
+45%
+45%
+45%

100/240 Winter
100/240 Winter
100/240 Winter
100/120 Winter
100/240 Winter
100/120 Winter
100/15 Summer

Water
Level

Surcharged
Depth

Flooded
Volume

Flow /
Cap.

Overflow
(l/s)

Half Drain
Time
(mins)

Pipe
Flow
(l/s)

Status

S1.000

S1

100.397

1.030

0.000

0.00

0.2

FLOOD RISK

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Filippo Lazzarin
Atkins Limited
Two Chamberlain Square
Paradise Circus
Birmingham
B3 3AX

Tel: +44 (0)121 483 5583