

Flood Risk Assessment and Drainage Strategy Report

WHITEFIELD MEDICAL CENTRE.

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CONTENTS

1	Introduction	4
2	Existing Site Details	6
3	Development and Flood Risk	9
4	Hydrological Assessment	14
5	Mitigation	20
6	Climate change	21
7	Drainage Strategy	22
8	Maintenance	28

APPENDICES

Appendix A –	Proposed Site Layout
Appendix B –	United Utilities Sewer Records
Appendix C –	Surveys
Appendix D –	Borehole
Appendix E –	Environment Agency Flood Map for Planning
Appendix F –	United Utilities Correspondence
Appendix G –	Existing and Proposed Catchments
Appendix H -	Greenfield & Existing Drainage Calculations
Appendix I -	Drainage Strategy
Appendix J -	Proposed Drainage Calculations

1 INTRODUCTION

1.1 Project Background

Curtins has been appointed by the NHS Property Ltd to provide a Flood Risk Assessment (FRA) and Drainage Strategy for the proposed development of Whitefield Medical Centre, Pinfold Ln, Whitefield, Manchester M45 7NY

The report provides information on the nature of flood risk at the site and follows Government guidance regarding development and flood risk.

The report is based on currently available information and preliminary discussions.

Proposals contained or forming part of this report represent the design intent and may be subject to alteration or adjustment in completing the detailed design for this project. Where such adjustments are undertaken as part of the detailed design and are deemed a material deviation from the intent contained in this document, prior approval shall be obtained from the relevant authority in advance of commencing such works.

1.2 Scope of Assessment

The assessment is to be undertaken in accordance with the standing advice and requirements of the Environment Agency (EA) for Flood Risk Assessments as outlined in the Communities and Local Governments Planning Policy Guidance to the National Planning Policy Framework (NPPF).

The assessment will:

- Investigate all potential risks of flooding to the site,
- Consider the impact the development may have elsewhere with regards to flooding,
- Consider design proposals to mitigate any potential risk of flooding determined to be present; and
- Consider foul and surface water drainage proposals for the proposed development.

The total site area is approximately 0.25 hectares. A review of the Environment Agency flood maps confirms that the site is located within Flood Zone 1. However, it also falls within a Critical Drainage Area. Although the Local Flood Authority has been consulted regarding the need for a Flood Risk Assessment (FRA) for planning—given the site's area is less than 0.5 hectares—an FRA has been undertaken to support the project's BREEAM assessment and to secure the associated credits.

In April 2015, the Government made changes to the National Planning Policy Framework which made Sustainable Urban Drainage Systems (SuDS) a material consideration in the determination of planning applications for all developments.

A Drainage Strategy will therefore be required as part of the Planning Application for the development, as the site is considered to be 'major' development by the Town and Country Planning Order 2015.

This Flood Risk Assessment and Drainage Strategy reviews the following information:

- Environment Agency flood maps for rivers and sea flooding
- UK Government Flood Warning Information Service maps for surface water flooding and reservoir flooding.
- Greater Manchester Level 1 Strategic Flood Risk Assessment (SFRA) published in March 2019.
- Great Manchester Level 2 Hybrid Strategic Flood Risk Assessment- Main Report October 2020
- Assessment of planning application: Flood Risk Emergency Planning consideration November 2013
- Great Manchester Surface Water Management Plan Stage 1- A strategic Assessment of Surface Water Flood Risk January 2012
- Great Manchester Surface Water Management Plan -Water Street SWMP January 2013
- Bury Council Local Flood Risk Management Strategy – April 2014
- Bury Council Local Flood Risk Management Strategy – April 2018
- Topographical Survey by Survey Solutions dated April 2025
- United Utilities Sewer records

The proposed development involves converting the existing library building into a Health Centre, including resurfacing of the existing car park, the addition of ramp access to the building, and the construction of a bin store

The Proposed Site Layout is enclosed in Appendix A.

2 EXISTING SITE DETAILS

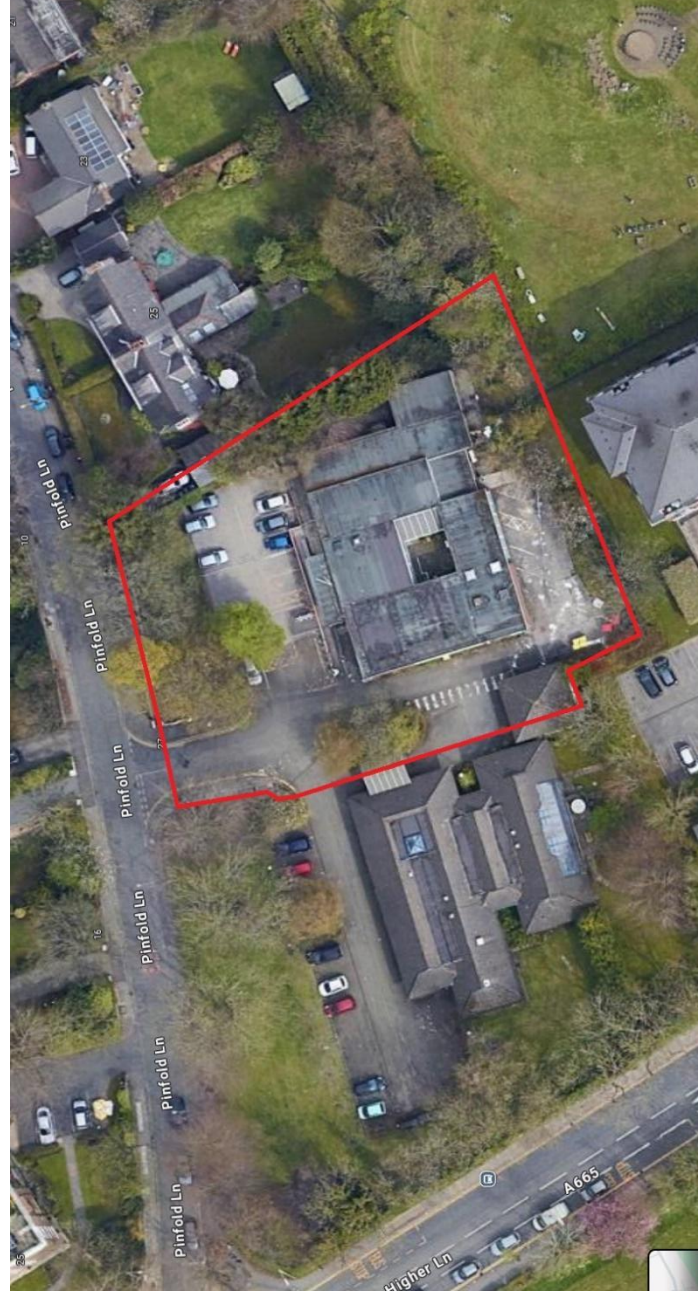
2.1 History and Current Use

The existing building, formerly used as a library, is located on Pinfold Lane, Whitefield, Manchester, M45 7NY. The site is referenced by Grid Reference SD804055 (Easting: 380461, Northing: 405592)

The site is bounded by an apartment block and associated car park to the west, Wentworth Court to the south and southwest, the sports pitches of Higher Lane Primary School to the southeast, residential properties to the east, and Pinfold Lane to the north. Vehicular and pedestrian access to the site is provided from Pinfold Lane

Refer to Figure 1.

Figure 1 – Site Location Plan



2.2 Existing Watercourses and Other Waterbodies

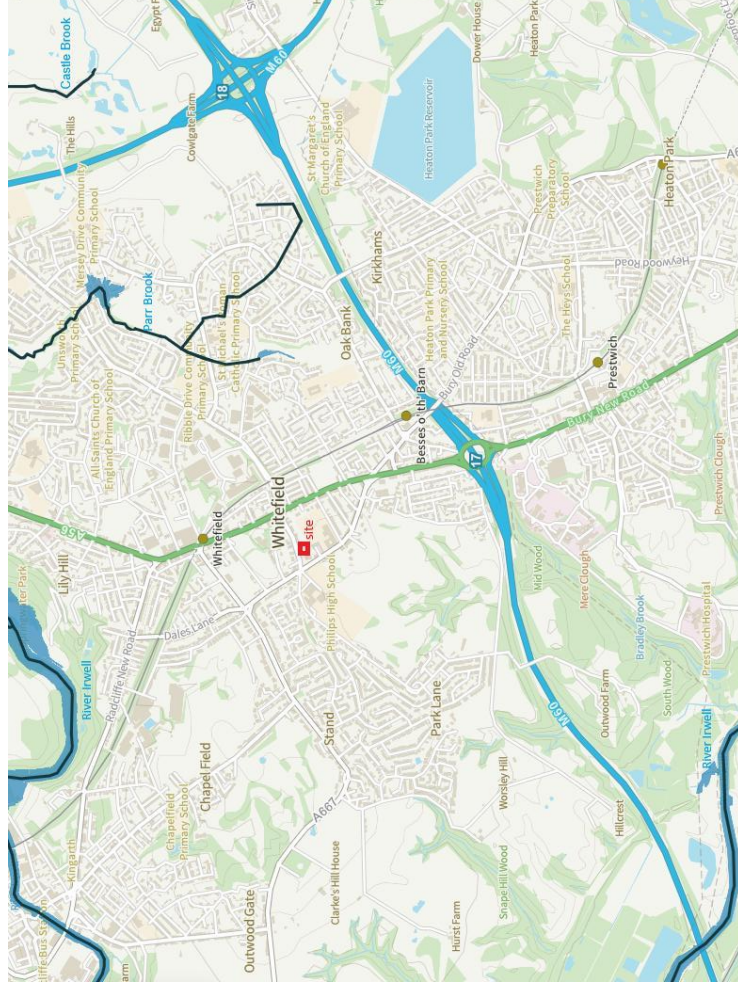
No above-ground watercourses have been identified within the boundaries of the proposed site.

The main watercourses are: the River Irwell, located approximately 1.51 km to the north and 2.34 km to the southwest. Parr Brook lies around 1.05 km to the east, while Castle Brook is approximately 2.63 km to the east.

An ordinary watercourse, Bradley Brook, is situated about 1.21 km to the southwest of the site.

Additionally, Heaton Park Reservoir is located approximately 2.10 km to the southeast.

Figure 2 – Flooding map planning, river, reservoir location



2.3 Existing Drainage

The United Utilities public sewer records have been obtained for the site and surrounding area and confirm that there is no public sewer located within the site boundary. An extract is shown in Figure 3 and the records are enclosed in *Appendix B*.

Figure 3 – United Utilities Sewer Records



The records indicate that the following public sewers are located within the vicinity of the site:

- There is a 450mm public combined water sewer within Pinfold Lane at approximately 3.39m deep, flowing in an easterly direction.

There are further public sewers identified on the public sewer records within the wider vicinity of the site, but these are not considered relevant to the scheme.

No surface water sewers have been identified in close proximity.

GPR and CCTV Survey have been carried out and have identified a number of private drains serving the site:

- The existing building and a portion of the external areas are served by a combined drainage network. The network is made up of 100mm and 150mm diameter pipes. The drainage exits the site in the northeast corner, the information indicates that the combined drain connects to the 450mm public sewer in Pinfold Lane. However, the final manhole (MH5), is buried, and further investigation is required to confirm the details and condition of the final connection.
- The remainder of the external hardstanding areas is served by a combined drain, which runs along the western boundary of the site. The network is made up of 100mm and 150mm diameter pipes and also serves the existing building located outside the ownership boundary. This network connects to the public combined sewer in Pinfold Lane at an existing manhole.

A copy of the CCTV and GPR plans are enclosed in Appendix C

2.4 Topography

A Topographical Survey of the site was completed by Survey Solution in April 2025 and is included in Appendix C. The existing building is situated at an elevation of 111.19m AOD. There are existing steps on the north and east sides providing access from the external area to the building. The external car park area slopes from the south at 110.90m AOD to the north at 110.11m AOD. The access road has a slope that partially directs towards the site and partially towards the adjacent property. A low point is present in the western car park, with levels falling away from the buildings.

2.5 Geology

The British Geological Survey (BGS) map does not indicate the presence of Made Ground on site. However, due to the site's developed nature, a layer of Made Ground is anticipated. The BGS records the presence of Devensian Till (Diamicton) as a superficial deposit, with the site underlain by Nob End Rock - Sandstone. No borehole records are available from BGS for locations adjacent to the site.

The nearest borehole, SD80NW65/D, located south near London Street, indicates the presence of clay up to 9 meters below ground level (mbgl), underlain by sand, with no groundwater encountered. Borehole records have been included in Appendix D.

Site is not located within Source Protection Zone.

3 DEVELOPMENT AND FLOOD RISK

3.1 National Planning Policy Framework (NPPF) and Planning Practice Guidance

In July 2022, the Department of Communities and Local Government published the National Planning Policy Framework document (NPPF) and the Planning Practice Guidance was published in March 2014 and updated in September 2023, which provides guidance on how flood risk should be assessed during the planning and development process.

Table 1: (Extract from *Planning Practice Guidance*) Flood Zone Classifications

These Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences. They are shown on the Environment Agency's [Flood Map for Planning \(Rivers and Sea 🗺️\)](#), available on the Environment Agency's web site, as indicated in the table below.

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or Land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

Table 2: (Extract from Planning Practice Guidance) Flood Risk Vulnerability Classification

Essential Infrastructure • Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk. • Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including electricity generating power stations and grid and primary substations; and water treatment works that need to remain operational in times of flood. • Wind turbines.
Highly Vulnerable • Police and ambulance stations; fire stations and command centres; telecommunications installations required to be operational during flooding. • Emergency dispersal points. • Basement dwellings. • Caravans, mobile homes and park homes intended for permanent residential use. • Installations requiring hazardous substances consent. (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as ‘Essential Infrastructure’).
More Vulnerable • Hospitals • Residential institutions such as residential care homes, children’s homes, social services homes, prisons and hostels. • Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels. • Non-residential uses for health services, nurseries and educational establishments. • Landfill* and sites used for waste management facilities for hazardous waste. • Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.

Less Vulnerable

- Police, ambulance and fire stations which are **not** required to be operational during flooding.
- Buildings used for shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'More Vulnerable' class; and assembly and leisure.
- Land and buildings used for agriculture and forestry.
- Waste treatment (except landfill* and hazardous waste facilities).
- Minerals working and processing (except for sand and gravel working).
- Water treatment works which do not need to remain operational during times of flood.
- Sewage treatment works, if adequate measures to control pollution and manage sewage during flooding events are in place.

Water-Compatible Development

- Flood control infrastructure.
- Water transmission infrastructure and pumping stations.
- Sewage transmission infrastructure and pumping stations.
- Sand and gravel working.
- Docks, marinas and wharves.
- Navigation facilities.
- Ministry of Defence defence installations.
- Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location.
- Water-based recreation (excluding sleeping accommodation).
- Lifeguard and coastguard stations.
- Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms.
- Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.

Table 3: (Extract from Planning Practice Guidance) Flood Risk Vulnerability and Flood Zone Compatibility

Flood Zones	Flood Risk Vulnerability Classification					
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible	
Zone 1	✓	✓	✓	✓	✓	
Zone 2	✓	Exception Test required	✓	✓	✓	
Zone 3a †	Exception Test required †	✗	Exception Test required	✓	✓	
Zone 3b *	Exception Test required *	✗	✗	✗	✗*	

Key:

- ✓ Development is appropriate
- ✗ Development should not be permitted.

Notes to table 3:

- This table does not show the application of the Sequential Test which should be applied first to guide development to Flood Zone 1, then Zone 2, and then Zone 3; nor does it reflect the need to avoid flood risk from sources other than rivers and the sea;
- The Sequential and Exception Tests do not need to be applied to minor developments and changes of use, except for a change of use to a caravan, camping or chalet site, or to a mobile home or park home site;
- Some developments may contain different elements of vulnerability and the highest vulnerability category should be used, unless the development is considered in its component parts.

† In Flood Zone 3a essential infrastructure should be designed and constructed to remain operational and safe in times of flood.

* In Flood Zone 3b (functional floodplain) essential infrastructure that has to be there and has passed the Exception Test, and water-compatible uses, should be designed and constructed to:

- remain operational and safe for users in times of flood;
- result in no net loss of floodplain storage;
- not impede water flows and not increase flood risk elsewhere.

3.2 Site Specific NPPF Flood Risk Categorisation

To assess the NPPF flood risk classification for the site, the first step was to inspect the UK Government web based 'Flood Map for Planning' which is used to inform planning of a site's Flood Zone(s) and the probability of flooding from rivers or sea taking into account the presence of flood defences and climate change. However, the web based 'Long Term Flood Risk Assessment for Locations in England' should also be used to identify the long-term flood risks from rivers and seas, surface water and reservoirs.

The Flood Map for Planning report is enclosed in *Appendix E*, and it can be seen that the pre-development site and the surrounding area is located in an area classified as Flood Zone 1 (low probability of flooding from rivers or sea).

Further site-specific review of the flood risk to the site is provided in section 4.

3.3 Site Specific Flood Zone Compatibility

The proposals for the development site are likely to fall within the following category:

- **Non-residential use for health services**

Non-residential use for health services are classed as 'more Vulnerable' development in the Flood Risk Vulnerability Classification (Table 2)

The site is located within Flood Zone 1 for which a 'more Vulnerable' development is deemed to be appropriate. Therefore, the development does not trigger the requirement for a sequential test/exception test (refer to the Flood Zone compatibility table in the NPPF technical guidance).

4 HYDROLOGICAL ASSESSMENT

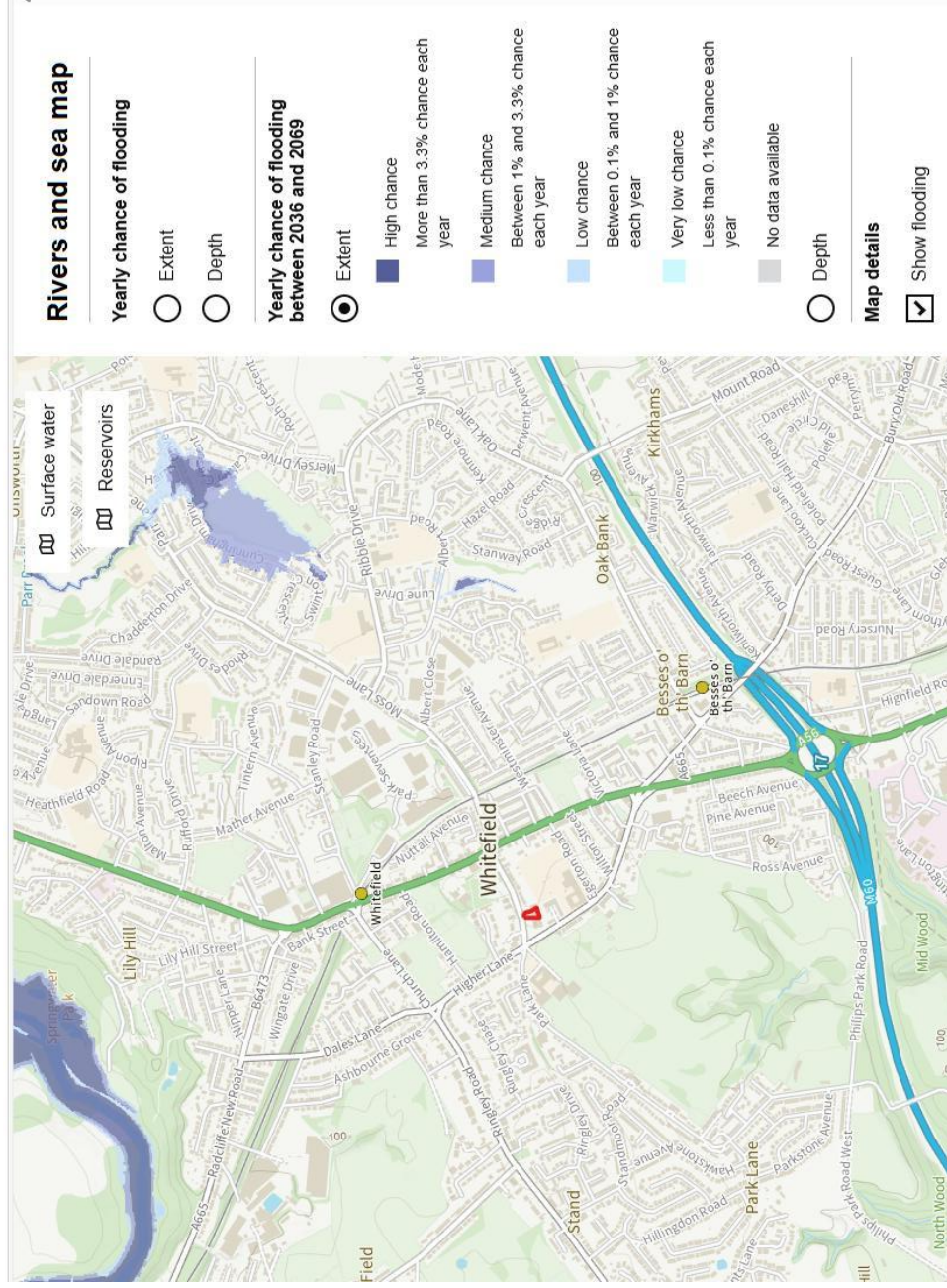
4.1 Sources of Flood Risk

This study assesses the risk from different types of flooding to the development and the risk of flooding from the development, taking into consideration climate change, as well as how flood risks should be managed. The approach to assessing flood risk at the development site was informed by the requirements of NPPF in conjunction with the client and Environment Agency requirements.

4.2 Fluvial Flooding (Rivers and Streams)

Flooding to the site from rivers and sea is indicated below in Figure 4, taken from the UK Government's Long-Term Flood Risk Information.

Figure 4 - Long Term Flood Risk Assessment Map – Flood Risk from Rivers or Sea (© Crown Copyright)



Flood risk from rivers or the sea

Very low risk means that each year this area has a chance of flooding of less than 0.1%. This takes into account the effect of any flood defences in the area. These defences reduce but do not completely stop the chance of flooding as they can be overtopped, or fail.

[Back to map](#)

Figure 4 The long-term map shows the river flooding to site is unlikely therefore fluvial flood risk is considered **very low**.

4.3 Tidal Flooding (Coastal or Estuarine)

There is currently no flood risk identified on the UK Government flood maps for the site and it is therefore regarded to be at **very low** risk from tidal flooding.

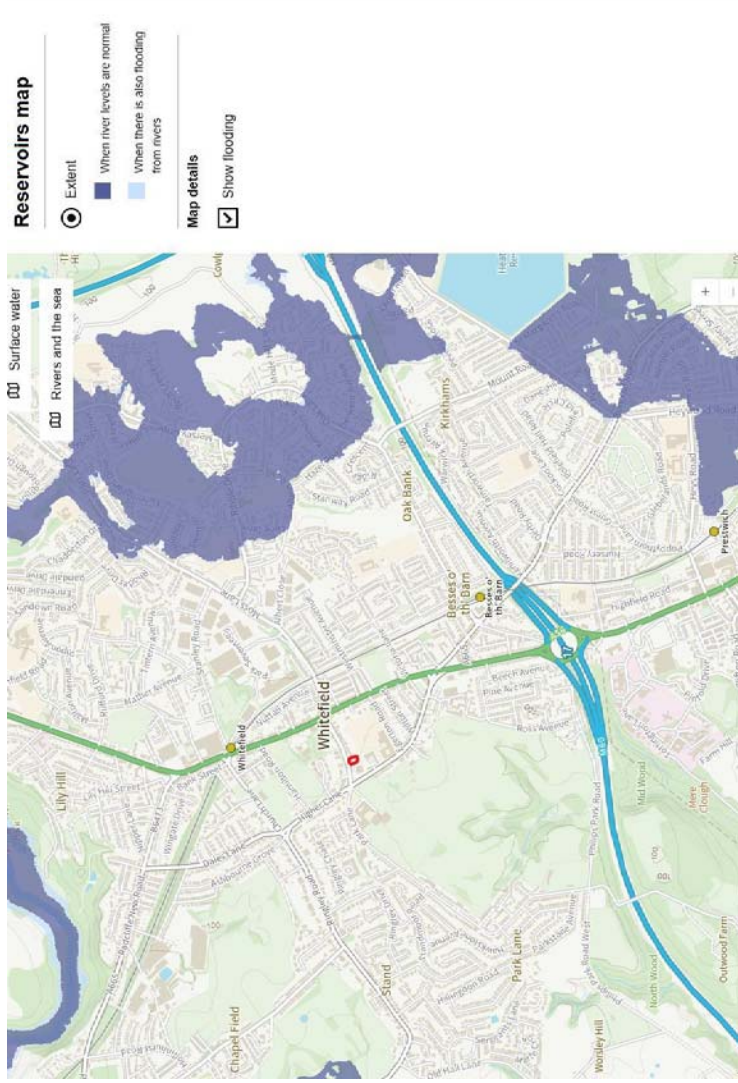
4.4 Reservoir Flooding

Reservoir flooding is extremely unlikely to happen and there has been no loss of life in the UK from reservoir flooding since 1925. The Environment Agency is the enforcement authority and ensures that reservoirs are inspected regularly, and essential safety work is carried out.

The Long-Term Flood Risk Assessment (Flood Risk from Reservoirs) map shows the site is located outside the reservoir flooding extent.

Since this is a prediction of a worst-case scenario, it is very low risk that a reservoir flood would be this large. Based on the above risk of reservoir flooding to the site, it is considered to be **very low**.

Figure 5 - Long Term Flood Risk Assessment Map – Flood Risk from Reservoirs (© Crown Copy Right)



4.5 Canal Flooding

There is no canals located in close proximity to the site. The nearest canal to the site is Manchester Bolton&Bury Canal located 2.93 km to the north of the site boundary.

The canals are identified in the SFRA as not generally posing a direct flood risk as they are a controlled water body. Therefore, the residual risk of canal flooding is usually associated with lower probability events such as overtopping and/or the breaching of embankments.

Based on the above information; it is considered that it is **unlikely** of canal flooding to the site.

4.6 Groundwater Flooding

There is no mention of significant groundwater issues in the surrounding area in the SFRA and relevant Bury Council Strategy documents.

No site investigation has been completed at this stage. Based on BGS borehole record SD80NW65/D, the groundwater has not been found up to 15m bgl.

The existing building is elevated above the surrounding area, and no new basement is proposed. As the existing levels slope away from the building, the risk of groundwater flooding is considered to be **very low**.

4.7 Sewers or Highway Drainage Flooding (Infrastructure Failure)

There are no highway drains recorded adjacent to the site.

Figure 6-8 of the Level 1 SFRA indicates that there are no recorded sewer flooding incidents within the Whitefield area.

United Utilities and Bury Council have not provided any records of flooding to the site or the vicinity.

Providing United Utilities and Bury Council maintain their drainage assets within and in the vicinity of the site, the risk of flooding to the proposed development site from public sewers or highway drainage is considered as **very low**.

4.8 Surface Water Flooding to the Site

Surface water flooding can be caused when rainwater during extreme rainfall events does not drain away through the normal drainage system or soak into the ground with flooding occurring, principally from manholes and gullies. Surcharging sewers can result in overland flows which if originating at a higher elevation than a development site can potentially pose a flood risk.

From the UK Government's Flood Risk from Surface Water (extent of flooding) map:

- Where a site is located in a dark blue shaded zone, this indicates that the site is at high risk of flooding, where flooding occurs as a result of rainfall with a greater than 1 in 30 (3.3%) chance in any given year.
- Where a site is located in a mid-blue shaded zone, this indicates that the site is at medium risk of flooding, where flooding occurs as a result of rainfall of between 1 in 100 (1%) and 1 in 30 (3.3%) chance in any given year.
- Where a site is located in a light blue shaded zone, this indicates that the site is at low risk of flooding, where flooding occurs as a result of rainfall of between 1 in 1000 (0.1%) and 1 in 100 (1%) chance in any given year.
- Where a site is located in a clear (unshaded) area; this indicates that the site is at very low risk of flooding, where flooding occurs as a result of rainfall with less than 1 in 1000 (0.1%) chance in any given year.

The extent of surface water flooding to the site is shown in Figure 6, which indicates that the area to the west boundary is at varying levels of flood risk—low, medium, and high. However, Figure 7 shows a low likelihood (between 0.1% and 1% chance per year) of flood depths reaching up to 0.20m, suggesting that the low-lying area within the adjacent property's car park is unlikely to cause surface water to overland flow onto the development site. Additionally, Figure 8 demonstrates that, during a 1 in 100-year storm event, surface water from the adjacent property does not overland flow onto the site.

The topographical survey indicates that the access road is at a higher elevation, preventing surface water from adjacent land from overflowing onto the site.

Figure 6 - Risk of Flooding from Surface Water - Extent of Flooding

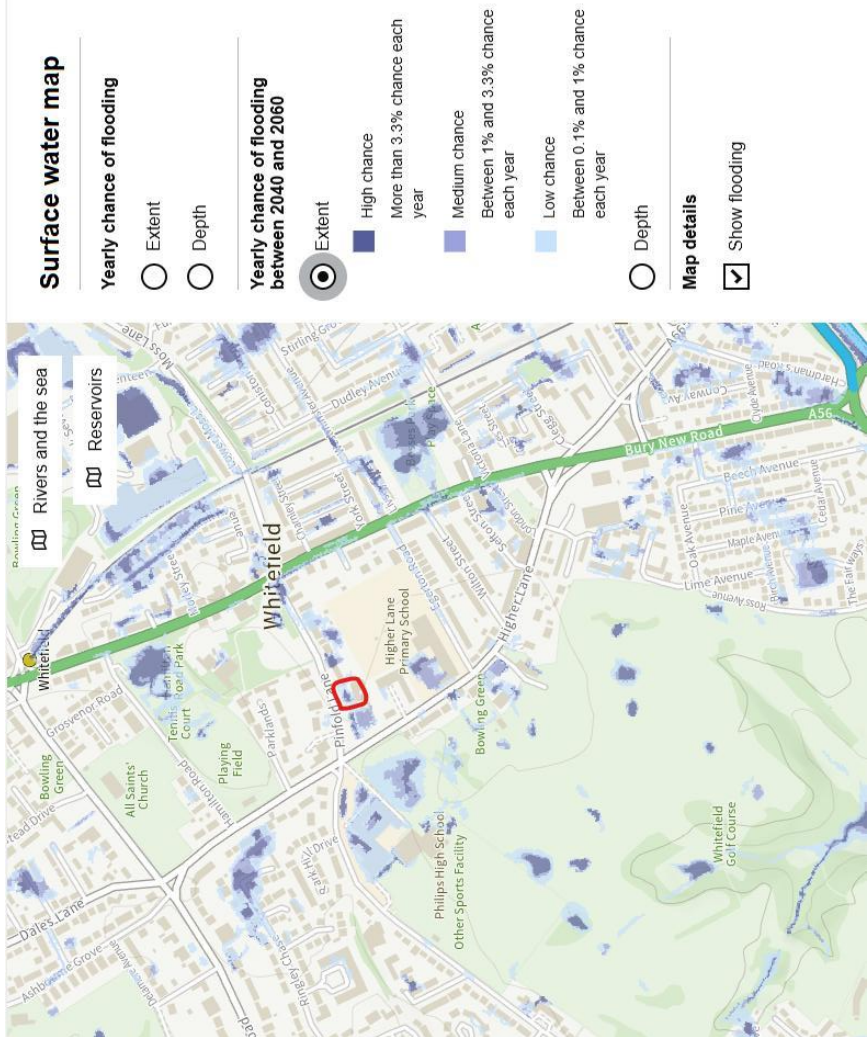


Figure 7 - Risk of Flooding from Surface Water - Depth of Flooding

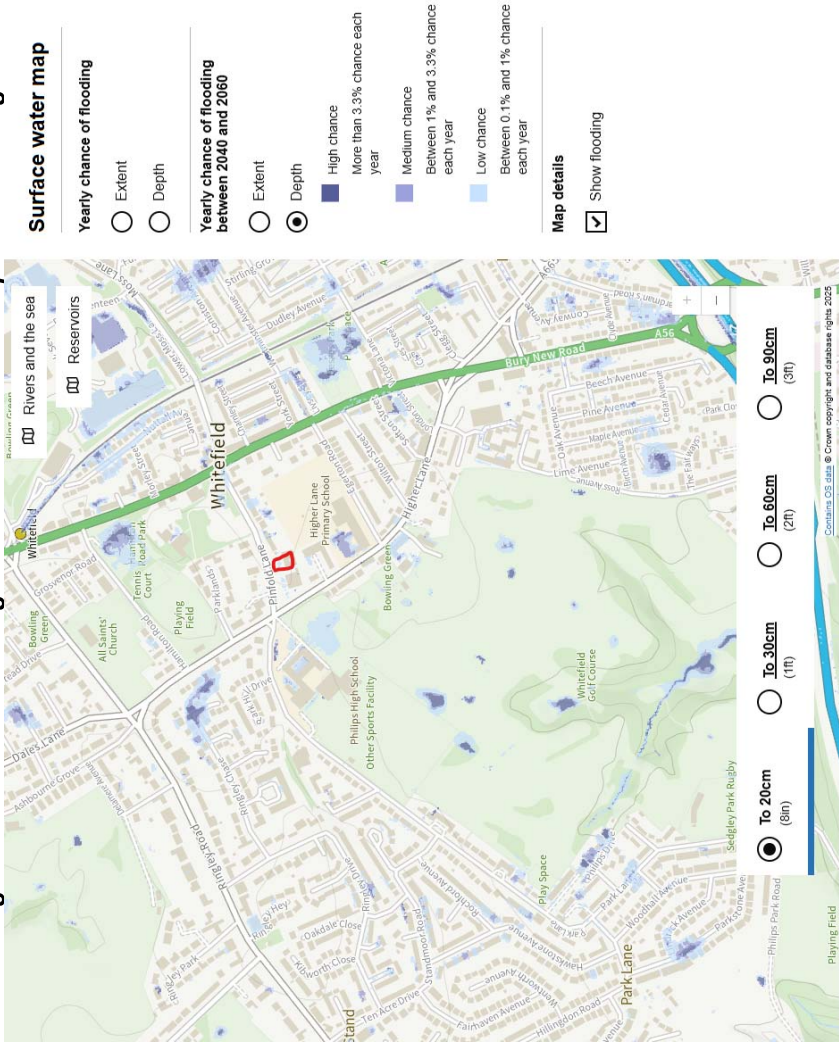
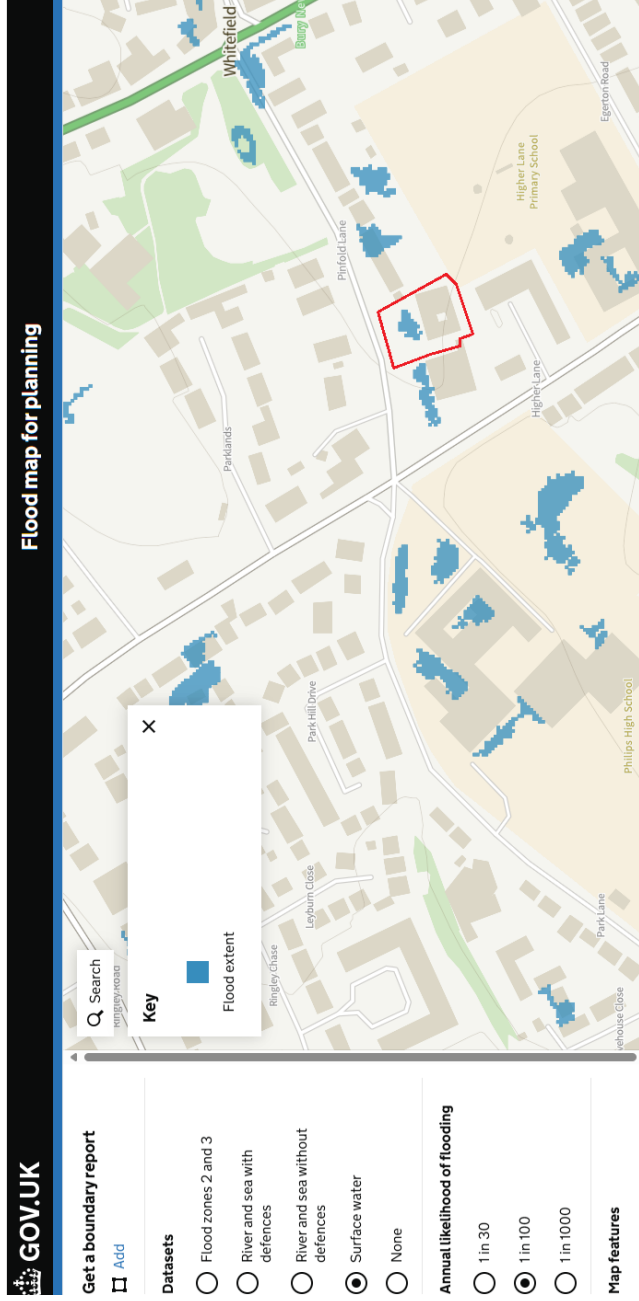


Figure 8- Surface water flooding map planning 1 in 100



Based on the above, the risk of flooding to the site is assessed to be very low. However, there are specific measures to mitigate against surface water flooding from outside to the site, which are detailed in chapter 5.

4.9 Surface Water Flooding from the Site

The extent of surface water flooding on the site is shown in Figures 6, 7, and 8. Figure 6 identifies a low spot within the northern car park area, with varying flood risk levels of low, medium, and high. However, Figure 7 indicates a low annual probability (between 0.1% and 1%) of flood depths reaching up to 0.20m. Figure 8 further shows that during a 1 in 100-year storm event, surface water will not overland flow onto adjacent land or affect the existing building on the site.

The flooding maps are based on Lidar data and site-specific assessment should be carried out.

The CCTV survey has not been carried out on the time of writing the report.

It is proposed that the surface water from the existing building to discharged as existing as any limitation on the existing drainage network will pose a risk to the building.

Although the proposed development involves resurfacing the existing car park and making minor alterations to the access to the building, an assessment of the existing drainage capacity and flooding extent should still be carried out.

Developers are responsible for ensuring that new development does not increase the flood risk elsewhere. Where new development is proposed, the new surface water drainage network shall be designed to not flood for the critical 1 in 30-year storm event and flood water generated up to the critical 1 in 100-year plus climate change storm event shall be constrained within areas on site so as not to cause damage to buildings, essential services or adjoining developments and services.

4.10 Historical Flooding

No historic records of flooding for the site were received at the time of writing this report.

4.11 Summary of Flood Risk

From the evidence collated and subsequent negotiations the main types of flooding that may apply to the proposed development site are as follows:

- Surface water flooding to the site (residual risk); and
- Surface water flooding from the site (potential).

5 MITIGATION

5.1 Surface Water Flooding to the site Mitigation

The UK Government Long Term Flood Risk Assessment surface water flood maps indicate that the site is at very low risk of surface water flooding from the adjacent site to the west of the boundary. Therefore, measures outlined in this section are recommended in order to ensure that the risk of surface water flooding to the post-development site shall not be increased.

It is proposed that existing access road levels will be maintained to ensure the risk to site from adjacent land does not increase.

Providing the above measures are implemented, the flooding risk to the development site from surface water is therefore considered very **low** post development.

5.2 Surface Water Flooding from the site Mitigation

It is proposed that the surface water from the existing building to be discharged as existing as any limitation on the existing drainage network will pose a risk to the building.

Although the proposed development involves converting the existing building into a health centre, an assessment of the existing drainage capacity and flooding extent should still be carried out. The flooding extent should be checked for a 1 in 100-year event plus 45% climate change to ensure that floodwater does not overland flow onto adjacent properties.

Any new drainage shall be designed to not flood for the critical 1 in 30-year storm event and flood water generated up to the critical 1 in 100-year plus climate change storm event shall be constrained within areas on site so as not to cause damage to buildings, essential services or adjoining developments and services.

To minimise localised flooding within the site, the drainage design should ensure that gullies, drainage channels and drains are all suitably sized to accommodate peak storm flows. Also, all inlet features should have suitably sized sumps to catch silts and should be subject to a documented routine maintenance and cleansing regime.

Flood water exceedance routes should be identified, both on and off site.

An appropriate management and maintenance plan for the proposed and existing drainage for the lifetime of the development should be submitted which should include:

- Any arrangements for management and maintenance by a Management Company
- Arrangements concerning appropriate funding mechanisms for its on-going maintenance of all elements of the proposed and existing drainage (i.e. inspections, regular maintenance)
- Means of access for maintenance and easements, where applicable

Assuming that the existing and proposed drainage system is designed to provide adequate capacity, and that the private drainage will be maintained by their chosen maintenance company, it can be assumed risk of flood from blockage or overloading is minimal.

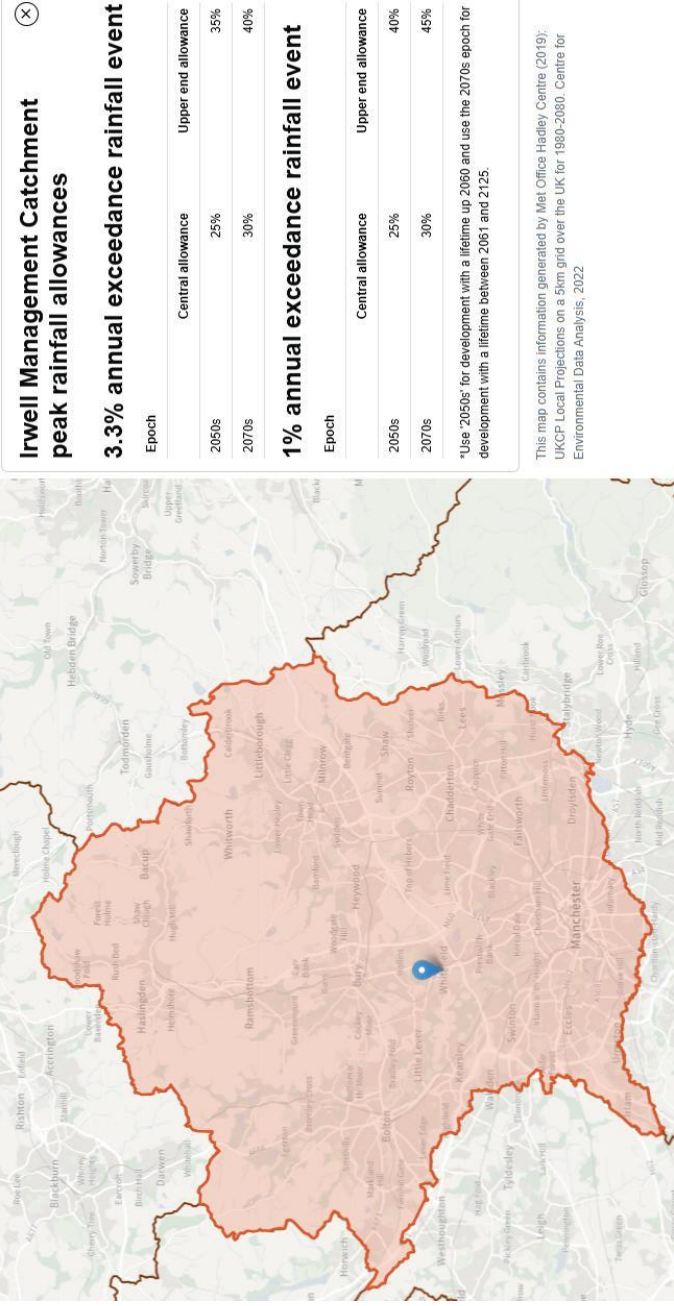
The final design of the drainage networks shall be in accordance with the legislation set by the Bury Council.

6 CLIMATE CHANGE

In May 2022, the Environment Agency released updated climate change allowances for peak rainfall intensities which should be applied to new developments. Rather than nationwide allowances, each area has its own peak rainfall allowances. In the case of the proposed site area, this is the Irwell Management Catchment. Figure 9 demonstrates the climate change allowances with central and upper end allowances for 2020s, 2050, and 2080s.

Based on the nature of the development, a lifespan in excess of 100 years is anticipated. Therefore, the potential climate change allowance for the 2070's ranges between 25% for the central allowance and 45% for the upper end allowance. As such, an allowance of 45% for climate change on peak rainfall intensity will be included in calculations.

Figure 9: (Extract Environment Agency Guidance) Peak Rainfall Intensity Allowance in small and urban catchments



7 DRAINAGE STRATEGY

7.1 Existing Drainage

A CCTV Survey have been carried out and has identified a number of private drains serving the site:

- The existing building and a portion of the external areas are served by a combined drainage network. The network is made up of 100mm and 150mm diameter pipes. The drainage exits the site in the northeast corner, the information indicates that the combined drain connects to the 450mm public sewer in Pinfold Lane. However, the final manhole (MH5), is buried, and further investigation is required to confirm the details and condition of the final connection. This has been designated as Existing Network/ Outfall 1.
- The remainder of the external hardstanding areas is served by a combined drain, which runs along the western boundary of the site. The network is made up of 100mm and 150mm diameter pipes. This network connects to the public combined sewer in Pinfold Lane at an existing manhole. This has been designated as Existing Network/ Outfall 1.

A copy of the CCTV and GPR plans are enclosed in Appendix C

Network 1

A model of existing Network 1 has been created using Flow Drainage Design Software. The drainage has been modelled for the 1, 30 and 100-year storm events.

The peak flows for the model are as follows:

- 1-Year Storm: 15.9 l/s
- 30-Year Storm: 25.1 l/s
- 100-Year Storm: 28.6 l/s

The model identified flooding at the manhole identified as MH3 in the 30 and 100-year storm events.

Network 2

The Network 2 model serves external areas within the site, and also existing buildings and external areas outside of the site boundary.

In the proposed scheme, the external areas within the site boundary will be served by the new proposed surface water drainage. Therefore, the existing model has not been modelled, as the network will not serve the proposed site post-development.

The existing drainage catchments and layouts is shown on drawing 087132-CUR-XX-XX-DR-C-92530, which is enclosed in Appendix G.

7.2 Proposed Foul Water Drainage

The new foul water downpipes from the building will be connected under the existing slab to the existing external private drainage. Some private pipes need to be re-laid as they are too shallow, which increase the risk of solids settlement and blockage of the pipes.

To minimize excavation beneath the existing building slab, it is recommended that facilities be located as close to the building's edge as possible.

Foul water drainage is designed in accordance with Building Regulations Part H.

United Utilities has confirmed in their pre-development enquiry response that they have no objection to discharging foul water at an unrestricted discharge rate to the public sewer within Pinfold Lane utilising the existing connection.

A copy of the United Utilities correspondence is enclosed in *Appendix F*.

It is assumed that the site will remain under a single ownership, therefore sewers cannot be offered for adoption by United Utilities. Any new connection(s) to the public sewer network will be subject to a Section 106 Agreement with United Utilities

The proposed drainage strategy is enclosed in *Appendix G*.

7.3 Proposed Surface Water Drainage

Existing Building Surface Water

It is proposed that the existing rainwater pipes connections to the existing combined drainage (Network 1) will be retained/ relaid. If the existing rainwater pipes are restricted, this could cause increased flood risk to the building.

Additional rainwater pipes are proposed, which reduces the roof catchment served by the existing combined network to 390m². The new rainwater pipes will be connected to the proposed surface water network.

The peak flows for the model are as follows:

- 1-Year Storm: 4.6 l/s
- 30-Year Storm: 11.1 l/s
- 100-Year Storm: 17.1 l/s

The model confirms that the post-development model does not flood for storm events up to the 100-year + 45% climate change event.

The remainder of the roof area (305m²) is served by new rainwater pipes which will connect to the proposed surface water network.

Proposed Surface Water drainage.

Although resurfacing of the external area is proposed, alterations to the car park layout and the inclusion of an additional pedestrian area will necessitate supplementary surface water drainage. As noted above, a proportion of the roof will be served by new rainwater pipes. These pipes will be connected to the new surface water drainage network.

The proposed catchments are shown on drawing 087132-CUR-XX-XX-DR-C-92531, which is enclosed in *Appendix G*.

The new drainage channels have been proposed to prevent surface water from the access road and external areas from flowing toward the adjacent property

As the external area will be resurfaced and only slightly altered, the Local Flooding Authority has been contacted to confirm whether the proposed discharge rate from the site, however, no response has been received.

Any new surface water drainage should be designed in accordance with current best practice to provide adequate capacity not to flood for the critical 1 in 30-year storm event and flood water generated for up to the critical 1 in 100-year plus climate change storm event shall be constrained within the areas on site so not to cause damage to buildings, essential services or adjoining developments and services.

As discussed in Section 6 based on the nature of the development, a lifespan in excess of 100 years is anticipated, an allowance of 45% for climate change on peak rainfall intensity should be included in the calculations for 1 in 100 storm events.

In following the standard hierarchy of drainage solutions, consideration should firstly be given to the discharge of surface water runoff by sustainable methods such as infiltration.

Infiltration

Given the ground conditions, including the presence of clay up to 15 meters deep, infiltration is not considered feasible. Additionally, as the building occupies the majority of site footprint, infiltration would not meet building regulation requirements, which specify a minimum 5-meter offset from foundations.

Watercourse

There are no watercourses within or adjacent to the site.

Surface Water Sewer

There are no surface water sewers identified within the vicinity of the site.

Combined Water Sewer

A combined public sewer is present within Pinfold Lane.It is proposed to reuse the existing connection to the public sewer, provided it is in suitable condition and of adequate size and depth-subject to the results of the CCTV survey.

Table 4 summarises the options for surface water disposal.

Table 4: Surface Water Disposal

Surface Water Disposal	Potential	Description
Infiltration	X	Ground conditions are not suitable for infiltration
Watercourse	X	There is no watercourse within or adjacent to the site
Surface Water Public Sewer	X	There are no surface water sewers identified within the vicinity of the site.
Combined Public Sewer	✓	Public combined sewer within the road using the existing private drainage

It is assumed that new drainage will be required for the car park, external areas and the additional part of the roof connected to the proposed surface water. According to Bury Council guidance, surface water discharge from the site should be limited to greenfield runoff rates. As the calculated greenfield rate is below 5 l/s, it is proposed to restrict the discharge to 5 l/s to minimise the risk of blockage within the flow control device.

United Utilities, in their pre-development response, also advised that the discharge rate should not exceed 5 l/s.

Greenfield rates are included in *Appendix H*, UU predevelopment advice is included in *Appendix F*.

7.4 Sustainable Drainage Systems and Green Infrastructure

In accordance with the National Planning Policy Framework (NPPF) a sustainable drainage system (SuDS) should be provided unless demonstrated to be inappropriate. The following options have been considered for the site:

Infiltration Systems:

Systems such as infiltration trenches and soakaways were considered as part of the surface water management strategy. However, given the existing ground condition and the building taking up the majority of the development footprint, infiltration systems are not considered suitable for the site.

Green/Blue roofs:

As it is existing building Green/Blue roofs has not been considered for the roof.

Swales, Wetlands and Attenuation Ponds:

Due to the nature of the site and the limited space available, pre-treatment steps and retention systems such as swales, wetlands and ponds are not considered suitable for the site due to their space requirements.

Permeable Paving

The existing car park and access road structure will be reused; therefore, permeable pavement is not suitable.

Rain Gardens and Drained Soft Landscaping

There are no external soft landscaped areas on site to implement any rain gardens.

Greywater Recycling

There are currently no proposals to include for rainwater harvesting within the scheme.

SuDS Conclusion

The development is proposing to include:

- Cellular Attenuation Tanks

The proposed network has been modelled for the 1, 30 and 100-year + 45% climate change storm events. The attenuation required for the proposed drainage has been calculated as 64m³.

A copy of the proposed drainage model details and results is in enclosed in Appendix J.

Surface water run-off from hard paved areas at risk of contamination should receive water quality treatment. External areas are considered as a low hazard in terms of contamination. Figure 11 illustrates the pollution hazard indices for different land use classifications from The CIRIA SuDS Manual C753 (2015).

Figure 11: Pollution Hazard indices for land use classification (Table 26.2 the CIRIA SuDS manual 2015)

TABLE 26.2 Pollution hazard indices for different land use classifications					
Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydrocarbons	
Residential roofs	Very low	0.2	0.2	0.05	
Other roofs (typically commercial/ industrial roofs)	Low	0.3	0.2 (up to 0.8 where there is potential for metals to leach from the roof)	0.05	
Individual property driveways, residential car parks, low traffic roads (eg cul de sacs, homezones and general access roads) and non-residential car parking with infrequent change (eg schools, offices) ie < 300 traffic movements/day	Low	0.5	0.4	0.4	
Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads except low traffic roads and trunk roads/motorways ¹	Medium	0.7	0.6	0.7	
Sites with heavy pollution (eg haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites), sites where chemicals and fuels (other than domestic fuel oil) are to be delivered, handled, stored, used or manufactured; industrial sites; trunk roads and motorways ¹	High	0.8 ²	0.8 ²	0.9 ²	

Figure 12 illustrates the SuDS Component mitigation indices from The CIRIA SuDS Manual C753 (2015)

Figure 12: Indicative SuDS mitigation indices (Table 26.3 the CIRIA SuDS manual 2015)

TABLE 26.3 Indicative SuDS mitigation indices for discharges to surface waters				
Type of SuDS component	Mitigation indices ¹			Hydrocarbons
	TSS	Metals		
Filter strip	0.4	0.4		0.5
Filter drain	0.4 ²	0.4		0.4
Swale	0.5	0.6		0.6
Bioretention system	0.8	0.8		0.8
Permeable pavement	0.7	0.6		0.7
Detention basin	0.5	0.5		0.6
Pond ⁴	0.7 ³	0.7		0.5
Wetland	0.8 ³	0.8		0.8
Proprietary treatment systems ^{5,6}	These must demonstrate that they can address each of the contaminant types to acceptable levels for frequent events up to approximately the 1 in 1 year return period event, for inflow concentrations relevant to the contributing drainage area.			

Notes

- 1 SuDS components only deliver these indices if they follow design guidance with respect to hydraulics and treatment set out in the relevant technical component chapters.
- 2 Filter drains can remove coarse sediments, but their use for this purpose will have significant implications with respect to maintenance requirements, and this should be taken into account in the design and Maintenance Plan.
- 3 Ponds and wetlands can remove coarse sediments, but their use for this purpose will have significant implications with respect to the maintenance requirements and amenity value of the system. Sediment should normally be removed upstream, unless they are specifically designed to retain sediment in a separate part of the component, where it cannot easily migrate to the main body of water.
- 4 Where a wetland is not specifically designed to provide significantly enhanced treatment, it should be considered as having the same mitigation indices as a pond.
- 5 See **Chapter 14** for approaches to demonstrate product performance. A British Water/Environment Agency assessment code of practice is currently under development that will allow manufacturers to complete an agreed test protocol for systems intended to treat contaminated surface water runoff. Full details can be found at: <http://tinyurl.com/qf7yuj7>
- 6 SEPA only considers proprietary treatment systems as appropriate in exceptional circumstances where other types of SuDS component are not practicable. Proprietary treatment systems may also be considered appropriate for existing sites that are causing pollution where there is a requirement to retrofit treatment. SEPA (2014) also provides a flowchart with a summary of checks on suitability of a proprietary system.

The selection of treatment should ensure that the SuDS mitigation component index (Figure 12) exceeds the pollution hazard index (Figure 11). Treatment should be provided using Suds methods, however as the external car park will be resurfaced only, Suds methods are not suitable.

The access road and car park have a combined area of 1,091 m². In the absence of updated guidance, the previous PPG3 recommendation has been applied, which requires a petrol interceptor for areas exceeding 800 m². Accordingly, a bypass petrol interceptor has been proposed. Due to the drainage network, a portion of the roof area will pass through the petrol interceptor. Therefore, the petrol interceptor has been sized for an area of 1670m².

The proposed pollution protection measures should be agreed upon with Bury Council.

The Proposed Drainage Strategy is enclosed in *Appendix G*.

The final design of the drainage networks shall be in accordance with the legislation set by the Bury Council and United Utilities.

8 MAINTENANCE

This section is intended to give an overview of the operation and maintenance for the drainage features included with the drainage strategy and in relation to typical details. Where proprietary products are specified, the manufacturer's instructions and recommendations should be followed in priority to this document unless specifically noted otherwise due to project constraints.

The recommended operations and frequencies are typical only and should be more frequent initially to ensure that there are no unforeseen issues with the operation and then adjusted to suit the site requirements.

As the flows are generally being attenuated on site and within SuDS features there will be a period of time after storm events where the network is still partially or fully surcharged and is draining down. Where this surcharging is still present after 48hrs appropriate action should be taken as noted in this section.

8.1 Components

The following components have been included within the drainage design for the proposed development:

- Inspection, Manhole and Catchpit Chamber
- Pipes
- Gullies, Sumps Access, and Outlet Units
- Linear Drainage
- Attenuation Tank
- Flow Control

For the locations of the drainage components, refer to drainage layout in *Appendix G*.

The maintenance strategy should be implemented to ensure the drainage network is cleaned regularly and the routine maintenance and cleansing regime should be documented.

The maintenance strategy should be adopted to ensure the drainage network is cleaned regularly and the routine maintenance and cleansing regime should be documented.

Maintenance of the drainage network will be the responsibility of an on-site facilities management team.

It is recommended that the drainage system is inspected as a minimum twice a year, with the system also being inspected after any major storm event.

Significant sediment deposition is likely in areas used for storage, so a post clean-up operation may be required including the removal of litter, vegetation, sewerage debris and larger objects.

Long-term management practices include monthly sweeping of external paved areas. The sweeping program will remove sand and contaminants directly from paved surfaces before they become mobilised during storm events and transported to the drainage system.

During the winter months, drainage features such as gullies and channels should be cleared of ice, snow, debris, or litter.

Sediment/material removal should be undertaken in consultation with the environmental regulator to confirm appropriate protocols; especially where run-off is taken from potentially contaminated areas such as the filter drains and the upstream/downstream chambers.

Inspection, Manhole and Catchpit Chambers

Access points have been located at the head of each run, at a change in direction and at a change of pipe size in accordance with Building Regulations Part H.

The appropriate barriers and signage should be installed during any opening of manholes to warn pedestrians.

Typically chambers with a minimum working space of 900mm can be accessed by personnel; however, a winch must be used. Where 1050mm of working space is provided, manholes should be accessed using steps and where 1200mm working space is provided; manholes should be accessed using ladders, this is in accordance with Building Regulations Part H.

Inspection Chambers, which are 450mm diameter, should have access restrictions (350m diameter or 300 x 300mm) fitted if the depth to invert is more than 1.2m.

When accessing chambers, the latest Health and Safety legislation should be adhered to.

The appropriate health and safety equipment must be used when accessing manholes. Confined space certificates must be held by any personnel entering a manhole and the appropriate permits should be obtained from the Facilities Maintenance Manager prior to any access.

Sediment\material removal should be undertaken in consultation with the environmental regulator to confirm appropriate protocols; especially where run-off is taken from potentially contaminated areas.

Maintenance Schedule	Required Action	Frequency
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required)	Initial inspection should be provided as post construction CCTV survey.	N/A
	Inspect for evidence of poor operation via water level in chambers. If required, take remedial action.	3-monthly, 48 hours after large storms.
Occasional maintenance	Check and remove large vegetation growth near pipe runs.	6 monthly
Remedial actions	Rod through poorly performing runs as initial remediation.	As required.
	If continued poor performance jet and CCTV survey poorly performing runs.	As required.
	Seek advice as to remediation techniques suitable for the type of performance issue and location.	As required If above does not improve performance.

Pipes

Pipes are proprietary products, and the materials can vary across the site and as such where used the manufacture's recommendations should be followed. Regardless of the product used the pipes will be fully compliant with the Curtins drainage specification.

Pipes are intended to be the main conveyance across the development and where oversized they form the attenuation volume required by the limitation of the discharge rate. They are intended to be dry except for during rainfall events. These have been designed to be self-cleaning where possible for smaller diameter pipes, and for larger diameters the risk is reduced due to the overall pipe size.

Access for maintenance is provided through access chambers and manholes.

Regular inspection and maintenance are important to identify areas which may have been obstructed/clogged and may not be drainage correctly thus exposing the development to a greater level of flood risk.

Maintenance Schedule	Required Action	Frequency
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required)	Initial inspection should be provided as post construction CCTV survey.	N/A
	Inspect for evidence of poor operation via water level in chambers. If required, take remedial action.	3-monthly, 48 hours after large storms.
Occasional maintenance	Check and remove large vegetation growth near pipe runs.	6 monthly
Remedial actions	Rod through poorly performing runs as initial remediation.	As required.
	If continued poor performance jet and CCTV survey poorly performing runs.	As required.
	Seek advice as to remediation techniques suitable for the type of performance issue and location.	As required If above does not improve performance.

Gullies / Sump, Outlet and Access Units

Channels and gullies should be inspected and cleaned in accordance with the manufacturer's details. Channel units can be cleaned through the use of a high-pressure hose; this can be fed into the channel system through access units strategically placed along the channel run. The throat section of channel units should be kept clear at all times to ensure uninterrupted flow of surface water into the drainage channel and any debris within the throat should be removed.

Locking bolts should be replaced and sufficiently tightened, taking care that the bolt heads do not stand above the top surface of the cover or grate. If covers are allowed to move within their frame, this may cause damage to the frame or seating.

Linear Slot Drainage

Linear channel drainage systems should be inspected and cleaned in accordance with the manufacturer's maintenance guide as below:

- Slot drain channels should be inspected regularly to ensure that the system continues to operate effectively and is free from damage and blockage by debris or solid objects.
- The system should be cleaned at least once a year and incorporated into a planned maintenance schedule. The frequency of inspection and maintenance depends on the local environment and conditions.
- Channel units can be cleaned through the use of a high-pressure hose. This can be fed into the channel system through access units strategically placed along the channel run.
- The throat section of channel units should be kept clear at all times to ensure uninterrupted flow of water into the drainage channel. Any debris within the throat should be removed.

- The seating areas for covers and grates should be cleaned before they are replaced. The covers and grates should be locked into position to prevent these being removed, stolen, or dislodged by traffic. Locking bolts should be replaced and sufficiently tightened, taking care that the bolt heads do not stand above the top surface of the cover or grate. If grates/covers are allowed to move within their frame, this may cause damage to the frame or seating.

Below Ground Attenuation Storage

Access for maintenance has been provided by an access shaft located on the tank and from the manhole chambers downstream of the tank.

Geocellular units are proprietary products and therefore manufacturer's recommendations should also be taken in to consideration. Additionally, different manufacturers may have different connection types and arrangements which will need to be taken in to consideration.

Regular inspection and maintenance is important for the effective operation of attenuation tanks as designed. As the feature is buried, a regular inspection regime is very important to ensure the correction functionality of the surface water drainage network.

Maintenance Schedule	Required Action	Frequency
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required).	Inspect inlets, outlets and overflows for blockages, and clear if required. If faults persist jetting and CCTV survey may be required.	Monthly and after large storms.
Regular maintenance\ inspection	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for 3 months, then six monthly.
	Debris removal from catchment surface (where may cause risks to performance).	Monthly
	Remove sediment from pre-treatment structures.	Annually (or as required after heavy rainfall events)
Remedial Actions	Repair/rehabilitation of inlets, outlets and overflows.	As required.

Flow Control

The flow control units are intended for flood control and flow restriction.

The flow controls are specified as Hydro-brake or similar approved and are proprietary products; therefore manufacturer's recommendations should also be taken in to consideration.

Access for maintenance has been provided by locating within manhole chambers.

Maintenance Schedule	Required Action	Frequency
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required).	Inspect inlets for blockages, and clear if required. If faults persist jetting and CCTV survey may be required.	Monthly and after large storms.
Regular maintenance\ inspection	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for 3 months, then six monthly.
	Debris removal from catchment surface (where may cause risks to performance).	Monthly
	Remove sediment from pre-treatment structures and flow control chambers.	Annually (or as required after heavy rainfall events)
Remedial Actions	Repair/rehabilitation of inlets.	As required.

APPENDICES

Appendix A – Proposed Site Layout

Appendix B – United Utilities Sewer Records

Appendix C – Surveys

Appendix D – Borehole

Appendix E – Environment Agency Flood Map for Planning

Appendix F – United Utilities Correspondence

Appendix G – Existing and Proposed Catchments

Appendix H - Greenfield & Existing Drainage Calculations

Appendix I - Drainage Strategy

Appendix J - Proposed Drainage Calculations

Appendix A – Proposed Site Layout

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NOTES

Drawing to be read in conjunction with Stage 3 drawing pack & details.

Levels based on Topographical Survey Ref 72960MCLS-02 Dated 25/04/25 by Survey Solutions.

All relevant Mechanical, Electrical and Structural Engineer's details to be referred to where relevant.

All details are to be referred to for Tender purposes only and should at no point be considered as construction information.

PROPOSED SITE PLAN LEGEND

- | | | | |
|--|-----------------------|--|-------------------------|
| | Existing Landscaping | | 125mm Kerb |
| | Proposed Landscaping | | 125mm Dropped Kerb |
| | Existing Planting | | Illuminated Bollard |
| | Proposed Planting | | 7.4kW EV Charging Point |
| | Existing Road/Parking | | EV Feeder Pillar |
| | Existing Paving | | Dropped Kerb |
| | Proposed Paving | | Proposed Seating |
| | Tactile Paving | | |
| | Disabled Parking Area | | |
| | Proposed building | | |
| | Existing Building | | |
| | Existing Tree | | |
| | Boundary Line | | |
| | Existing Fence | | |
| | Proposed Fence | | |



Appendix B – United Utilities Sewer Records

Curtins Consulting Ltd
51-55
Tithebarn Street,
Liverpool,
L2 2SB

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@uu plc.co.uk

Your Ref: PO 22404 Whitefield
Our Ref: UUPS-ORD-643008
Date: 07/04/2025

Dear Sirs

Location: 27 PINFOLD LANE, WHITEFIELD, MANCHESTER, M45 7NY

I acknowledge with thanks your request dated 03/04/2025 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:

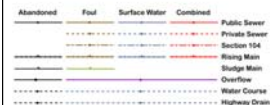
- This Map and any information supplied with it is issued subject to the provisions contained below, to the exclusion of all others and no party relies upon any representation, warranty, collateral contract or other assurance of any person (whether party to this agreement or not) that is not set out 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.



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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LEGEND



All point assets follow the standard colour convention:

red - combined
green - surface water
purple - overflow

- Manhole
- Head of System
- Extent of Survey
- Roadway Eye
- Inlet
- Discharge Point
- Valve
- Penstock
- Woodchuck Chamber
- Valve
- Air Valve
- Non Return Valve
- Sump
- Cascade
- Flow Meter
- Hatch Box
- Oil Interceptor
- Side Entry Manhole
- Screen Chamber
- Inspection Chamber
- Bifurcation Chamber
- Lamp Hole
- Catchpit
- Valve Chamber
- Vent Column
- Perforated Chamber
- Network Storage Tank
- Sewer Overflow
- We Treatment Works
- Sewer Pumping Station
- Basin Tank
- Control Kiosk
- DSD Network Monitoring Point
- Change of Characteristic

MANHOLE FUNCTION

- FO Surface
- FW Surface Water
- OV Combined
- OV Overflow

SEWER SHAPE

- CI Circular
- TR Trapezoidal
- EG Egg
- AR Arch
- OV Oval
- BA Barrel
- FT Flat Top
- HC 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 Bulted
- CSU Concrete Segment Unbulted
- CC Concrete Box Culvert
- PSC Plastic / Steel Composite
- GRC Glass Reinforced Plastic
- DI Ductile Iron
- PVC Polyvinyl Chloride
- CI Cast Iron
- SI Spun Iron
- ST Steel
- WC Wetted Clay
- PP Polypropylene
- PF Pitch Fibre
- MAC Masonry, Coursed
- MAR Masonry, Random
- U Unspecified

Address or Site Reference:

27 PINFOLD LANE,
WHITEFIELD,
MANCHESTER,
M45 7NY

OS sheet

SD8006SE

Number:

219

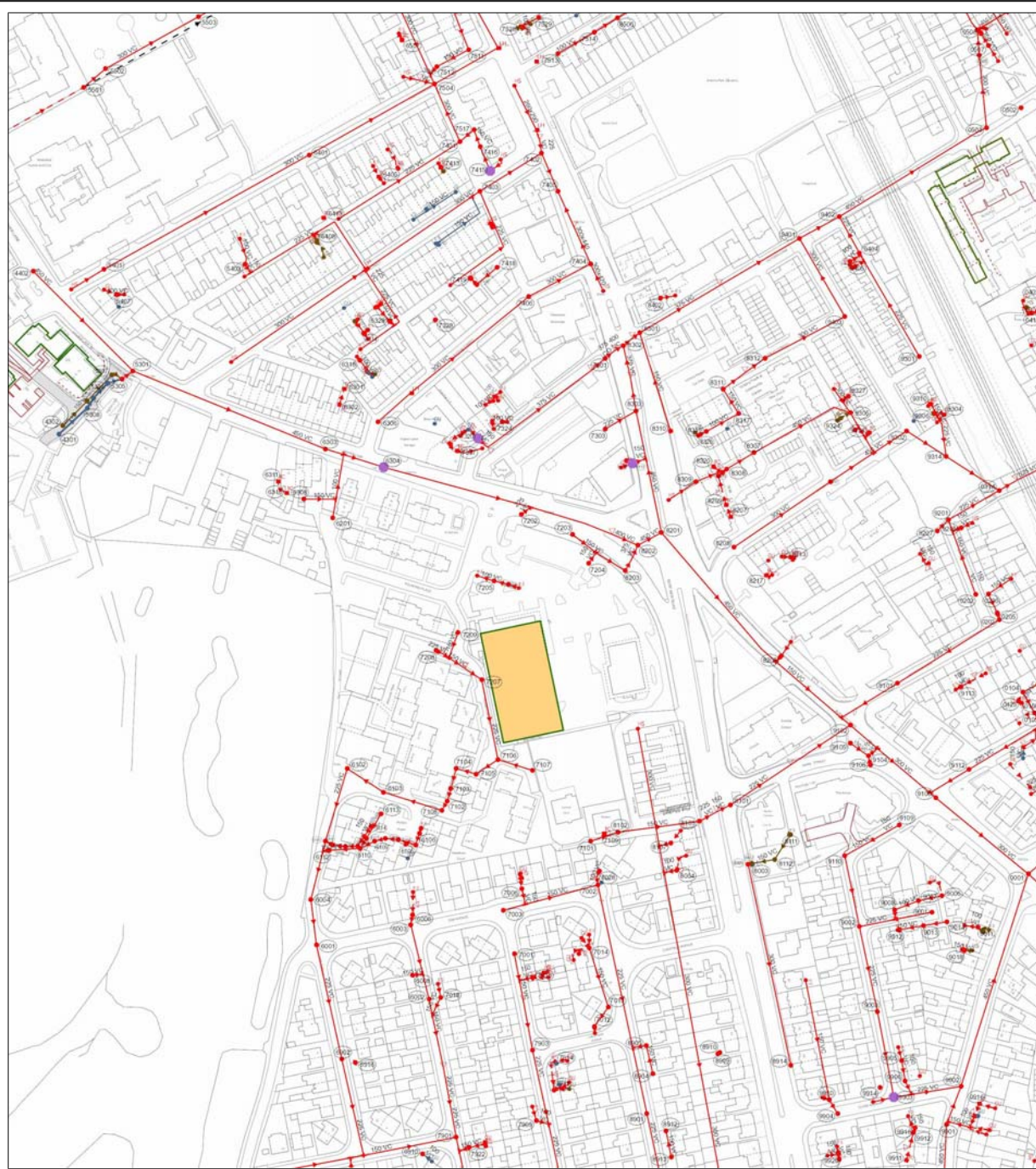
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3 of 6

Printed by:

Property Searches

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LEGEND

Abandoned

Full

Surface Water

Combined

Public Sewer

Private Sewer

Section 154

Rising Main

Outfall

Water Course

Highway Drain

All point assets follow the standard colour convention:

red - combined

green - foul

blue - surface water

purple - overflow

Manhole

Head of System

Extent of Survey

Roading Eye

Inlet

Discharge Point

Valves

Penstock

Woolshed Chamber

Valve

Air Valve

Non Return Valve

Sewerway

Gully

Cascade

Flow Meter

Hatch Box

Oil Interceptor

Summit

Drop Stack

Office Plate

Side Entry Manhole

Outfall

Screen Chamber

Inspection Chamber

Bifurcation Chamber

Lamp Hole

Function / Saddle

Catchpit

Valve Chamber

Vent Column

Valve Chamber

Penstock Chamber

Network Storage Tank

Sewer Overflow

We Treatment Works

We Pumping Station

Basin Tank

Control Kiosk

CHD Network Monitoring Point

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 Adhesive Cement

BR Brick

PE Polyethylene

RP Reinforced Plastic Matrix

CO Concrete

CSB Concrete Segment Balled

CCB Concrete Segment Corroded

CC Concrete Box Culverted

PSC Plastic / Steel Composite

GRG Glass Reinforced Plastic

DI Ductile Iron

PVC Polyvinyl Chloride

CI Cast Iron

SI Spun Iron

ST Steel

SP Vertical Clay

PP Polypropylene

PF Pitch Fibre

MAC Masonry, Coursed

MAR Masonry, Random

U Unspecified

Address or Site Reference:

27 PINFOLD LANE,
WHITEFIELD
MANCHESTER,
M45 7NY

OS sheet SD8005SE

Number: 238

Scale: 1:1250

Date: 07/04/2025

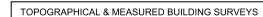
Sheet: 6 of 6

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SEWER RECORDS

United Utilities

Water for the North West



ABBREVIATIONS & SYMBOLS

[illegible]

DRAWING NOTES

Topographical Surveys

Trees are drawn to scale showing the average canopy spread. Descriptions and heights should be used as a guide only.

All building names, descriptions, number of storeys, construction type including roof line details are indicative only and taken externally from ground level.

All below ground details including drainage, voids and services have been identified from above ground and therefore all details relating to these features including: sizes, depth, description etc will be approximate only. All critical dimensions and connections should be checked and verified prior to starting work.

Detail, services and features may not have been surveyed if obstructed or not reasonably visible at the time of the survey.

Surveyed physical features may not necessarily represent the legal boundary line.

Measured Building Surveys

Measurements to internal walls are taken to the wall finishes at approx 1m above the floor level and the wall assumed to be vertical.

General

The contractor must check and verify all site and building dimensions, levels, utilities and drainage details and connections prior to commencing work. Any errors or discrepancies must be notified to Survey Solutions immediately.

The accuracy of the digital data is the same as the plotting scale implies. All dimensions are in metres unless otherwise stated.

The accuracy of the digital data is the same as the plotting scale implies. All dimensions are in metres unless otherwise stated.

The survey control listed is only to be used for topographical surveys at the stated scale. All control must be checked and verified prior to use.

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This drawing should only be scaled using digital methods.

SURVEY GRID AND LEVEL DATUM

The coordinate system established for this survey is related to Ordnance Survey (OS) National Grid at multiple points using GNSS with a scale factor of 1.000.

The level datum established for this survey is related to Ordnance Survey (OS) using GPS Smartnet.

To avoid discrepancies within the survey, adding to the survey or setting out point from the survey, any coordinated data must be directly derived from the original survey control. Survey Solutions are not responsible for any third-party adding survey data to the existing information.

REV	DESCRIPTION	DRAWN	APPR	DATE
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PSWICH / BEDFORD / BIRMINGHAM / COVENTRY / CRAWLEY / GLASGOW / LEEDS / LONDON-CENTRAL /
LONDON-EAST / MANCHESTER / NEWCASTLE / NORWICH / NOTTINGHAM / THAMES VALLEY

PROJECT TITLE
WHITEFIELD LIBRARY, PINFOLD LANE,
WHITEFIELD, MANCHESTER, M45 7NY

DRAWING DETAIL
GROUND FLOOR PLAN
Sheet 1 of 1

CLIENT	SCALE
GILLING DOD LTD	1:100

SURVEYOR ST	SURVEY DATE 17/12/2024	CHECKED BY SR	APPROVED BY SR	DWG STATUS FINAL
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DRAWING NUMBER	REVISION	ISSUE DATE
72968MCLS-02		19/12/2022



SUB SOIL SURVEYS LTD.
MANCHESTER

SD 80 NW 65d

BOREHOLE NO. 4

Ref: _____

EXPLORATORY BORING RECORD

SITE

Whitefield

Site Ref: 74/56

Boring Method _____ Shell _____ Ground Level 106.83 O.D. _____

Date	Depth of Casing Below G.L. (m)	Water Level Monitoring & Evening G.L.	Depth of Strata Below G.L.	STRATA APPROX. SCALE	No. of Samp	Type of Samp	Penetration of Sampler or Core Barrel (metres)		No. of Blows	Core Recovery
							From	To		
22.5.74	0.9			Loose ashes, stones, bricks, pottery, etc. - Fill Material	1	D	0.5			
					2	U	0.9	1.35	23	
					3	D	1.35			
	2.55			Dark grey/brown sand and clayey sand with stones, bricks, pottery, organic odour - Fill Material	4	U	2.1	2.55	21	
					5	D	2.55			
	4.5			Soft and very soft black sandy clay and clayey Sand with lenses of sand and lenses or zones of clayey peat (possibly disturbed in upper zone)	6	U	3.2	3.65	7	
					7	D	3.65			
					8	U	4.2	4.65	9	
	5.6			Very soft brown laminated silty CLAY with occ. stone inclusions	9	D	4.65			
					10	U	5.6	6.05	28	
				Stiff grey/brown silty and sandy CLAY with stone incls. and lenses of silt	11	D	6.05			
					12	U	7.0	7.45	37	

Cont....

Samples shown thus: Disturbed D. Undisturbed U. Standard Pen. Test X. Water W. Bulk B.			
Water Observed at the Following Depths overnight seepage (N.B. Not Sealed)	Depth of Casing when Sealed (N.B. Not Sealed)	Estimated Seepage	Water Added at Following Depths to Assist Boring
			Water Level in Cased/Uncased Borehole on Completion
1 None			Date Water Level Depth of Casing
2			24.5.74 Dry None
3			25.7.74 2.1 None
4			
5			
6			
DIA. OF CASING 200 mm to depth of 14.8 metres			
mm to depth of metres			
mm to depth of metres			

REMARKS:

No initial penetration for SPT sample No. 24

SUB SOIL SURVEYS LTD.
- MANCHESTER

SD 80421654
BOREHOLE No. 4

MANCHESTER

Ref:

Continuation

EXPLORATORY BORING RECORD

SITE
Whitefield

Site Ref: 74/56

Boiling Method

Shell

Ground Level 106.83 O.D.

Date	Depth of Casing Below G.L. (m)	Water Level Morning & Evening	Depth of Strata Below G.L.	STRATA APPROX. SCALE	No. of Samp	Type of Samp	Penetration of Sampler or Core Barrel (metres)		No. of Blows	Core Recovery
							From	To		
					13	D	7.45			
				As Above	14	U	8.6	9.05	59	
22.5.74	5.5	Dry	9.0		15	D	9.65			
23.5.74		Dry			16	X	9.2	9.5	73	
					17	B	9.5	10.2		
					18	X	10.65	10.95	95	
					19	B	10.95	11.8		
					20	X	11.95	12.16	72	
				Dense and very dense brown silty fine-medium SAND	21	B	12.25	13.5		
					22	X	12.65	12.71	50	
					23	B	14.0	15.0		
23.5.74	14.8	Dry	15.2		24	X	15.0	15.12	98	

Samples shown thus:	Disturbed D.	Undisturbed U.	Standard Pen. Test X.	Water W.	Bulk B.
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100					

Water Observed at the Following Depths • overnight seepage	Depth of Casing when Sealed (N.B. Not Sealed)	Estimated Seepage	Water Added at Following Depths to Assist Boring	Water Level in Cased/Uncased Borehole on Completion	
				Date	Water Level: Depth of Casing
1					
2					
3					
4					
5					
6					

DIA. OF CASING _____ m to depth of _____ metres
 _____ m to depth of _____ metres
 _____ m to depth of _____ metres

REMARKS:

Appendix E Environment Agency Flood Map for Planning



Flood map for planning

Your reference Location (easting/northing) Created
Unspecified **380459/405598** **7 May 2025 13:27**

Your selected location is in flood zone 1, an area with a low probability of flooding.

You will need to do a flood risk assessment if your site is **any of the following**:

- bigger than 1 hectare (ha)
- in an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

Notes

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

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

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

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2025 AC0000807064. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference

Unspecified

Location (easting/northing)
380459/405598

Scale
1:2,500

Created
7 May 2025 13:27

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


0 20 40 60m