

Pell Frischmann

Longhurst Road

Flood Risk Assessment / Engineering Appraisal

January 2023

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1 Introduction

1.1 Purpose of the Report

Great Places has commissioned Pell Frischmann Ltd to undertake a Flood Risk Assessment in respect to the proposed development of a 0.37-hectare (ha) site on Longhurst Road, Higher Blackley, Manchester.

This report has been prepared to accompany a full planning application for the proposed development as outlined in Section 1.2.

1.2 Proposed Development

The planning application is to comprise of proposals for a residential development of no.22 affordable housing units. A draft planning layout for the development is appended to this document in Appendix A.

1.3 Requirement for Flood Risk Assessment

As the site is in excess of 10 dwellings, in accordance with the National Planning Policy Framework (NPPF) and the Planning Practice Guide (Flood Risk & Coastal Erosion) (PPG), a Flood Risk Assessment is required to support the planning application.

1.4 Scope of the Flood Risk Assessment

The FRA will be undertaken in accordance with the guidelines of the NPPF and the Environment Agency's Flood Risk Assessment (FRA) Guidance Note 3.

The FRA will assess the existing fluvial and coastal flood risk to the site and establish a management regime for surface water runoff from the site such that flood risk to adjoining areas is not exacerbated. If not managed properly, surface water runoff from the site could potentially lead to increases in flood risk to other areas or the development itself.

In line with the PPG, the FRA will also consider other potential sources of flood risk, such as sewers, overland flow routes, groundwater flooding, reservoir flooding, and minor watercourses not shown on the EA flood map.

1.5 Foul Drainage Assessment

The Foul Drainage Assessment will review the existing foul water drainage systems within and adjacent to the application site and identify the peak flows from the proposed development. The assessment will also identify points of connection via a pre-development application to United Utilities (UU) in relation to the proposed peak foul flows from the development.

2 Site Description

2.1 Existing Site

The application site covers an area of approximately 0.37 ha and is located within Higher Blackley, Manchester, located on Longhurst Road and East of the A576, as shown in Figures 1 and 2.

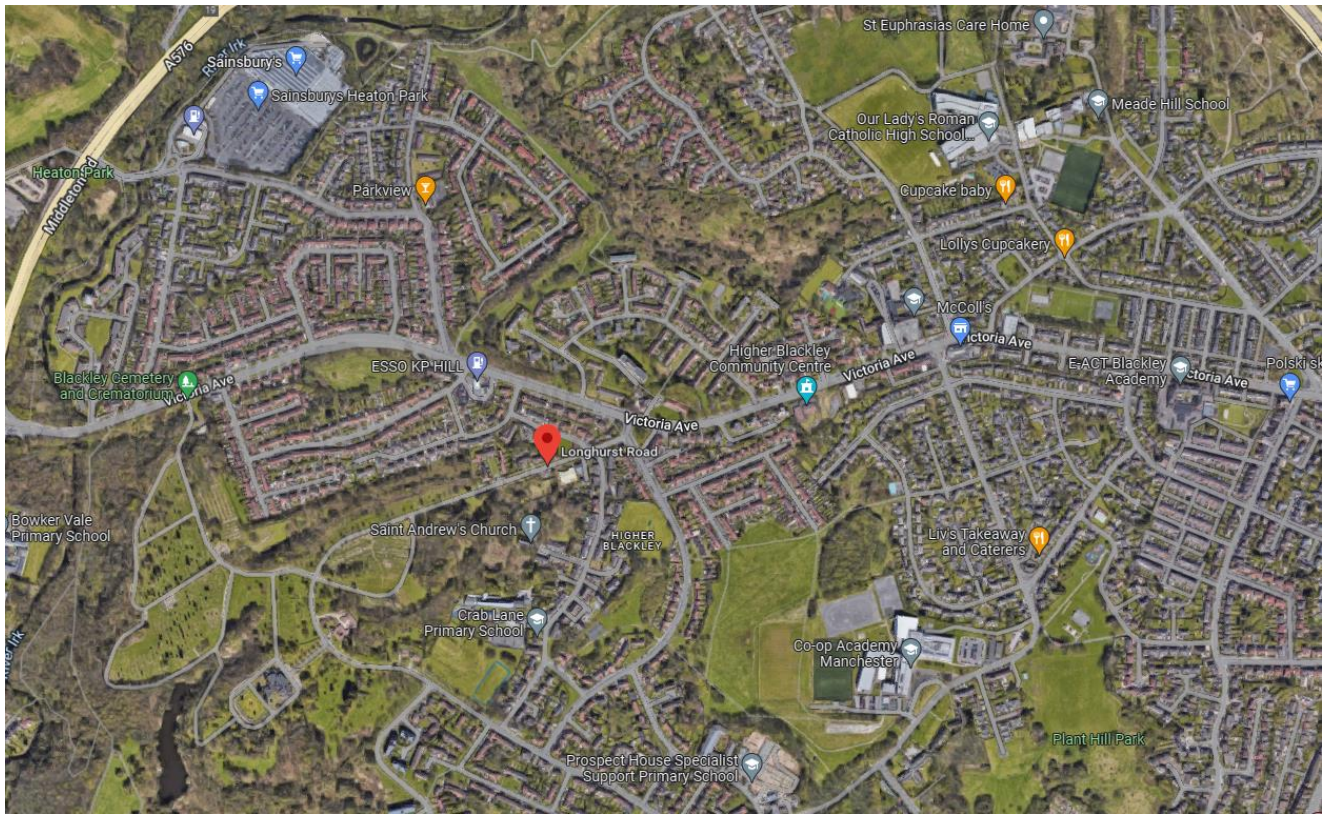


Figure 1 - Site Location



Figure 2 - Site red line boundary (see appendix A for planning layout)

The application site consists of an area of hardstanding to the south of approximately 0.025 ha (the existing hardstanding park area), with the remainder of the site to be considered as a greenfield site in flood risk terms.

St. Aidan & Oswald RC Primary is to the north of the site, with Shaw Road End Park to the south-east. A culverted watercourse bisects the site to the south-west, at its access from Broadway.

A review of the topographical survey (included in the draft planning layout Appendix A) shows the site rises approximately 0.5m from the northern boundary to a 164.24 m AOD high point at the approximate centre of the site, from which it falls away to the surface water easement, from where it then rises to meet Broadway at 163.93m AOD. Similarly, from the eastern most boundary the site rises approximately 3m to the high point before falling away to the western boundary, to the culvert headwall.

2.1.1 Ground Conditions

A review of the British Geological Society (BGS) website was undertaken to determine the underlying geology of the site. The bedrock geology of the site is of Chester Formation – Sandstone / Sedimentary bedrock, overlain by superficial deposits of a Diamicton Devensian till.

At the time of writing the site is undergoing a phase 2 site investigation which will determine a more prescriptive indication of the ground makeup and infiltrations results. The initial Borehole data indicates that the ground primarily is fine silty clay.

2.2 Existing Drainage

2.2.1 Main Rivers

The nearest main river to the development site is the River Irk, approx. 750m East of the development site.

2.2.2 Ordinary and Manmade Watercourses

A culverted watercourse, running east to west, bisects the site to the south-west at the site access from Broadway. It is likely that this that this ordinary watercourse will be suitable for discharge.

2.2.3 Sewers

2.2.3.1 United Utilities Sewers

According to UU sewer records there is a local network of adopted sewers that serve the adjacent residential developments and schools. UU sewer records are found within Appendix B.

2.2.3.2 Foul and Combined Sewers

To the north of the development site a 225mm diameter Combined sewer runs s underneath Longhurst Road to the housing estates to the north. There is also a 375mm combined sewer east of the site. At the time of writing a response is being awaited to confirm the viability of drawing to the 225mm Combined sewer.

2.2.3.3 Surface Water Sewers

There appears to be no surface water pipes in the area surrounding the site.

2.2.3.4 Ordinary Watercourses

To the north west of site just above the western end of Longhurst Road there is an ordinary water course believed to be used as a drain to the Blakely Cemetery which will be owned by Manchester City council. Due to the distance form the site and its location, it has been deemed unsuitable for draining into.

3 Flood Risk

3.1 Fluvial Flood Risk

3.1.1 Environment Agency Data Review – Fluvial Flooding

According to Flood Risk Mapping for Planning provided by the EA, the site is located entirely within Flood Zone 1, outside the extent of the 0.1% AEP (1 in 1000) risk of flooding from a major river in any one year. As the site is located in Flood Zone 1, it is considered to be at low risk of flooding from fluvial sources.

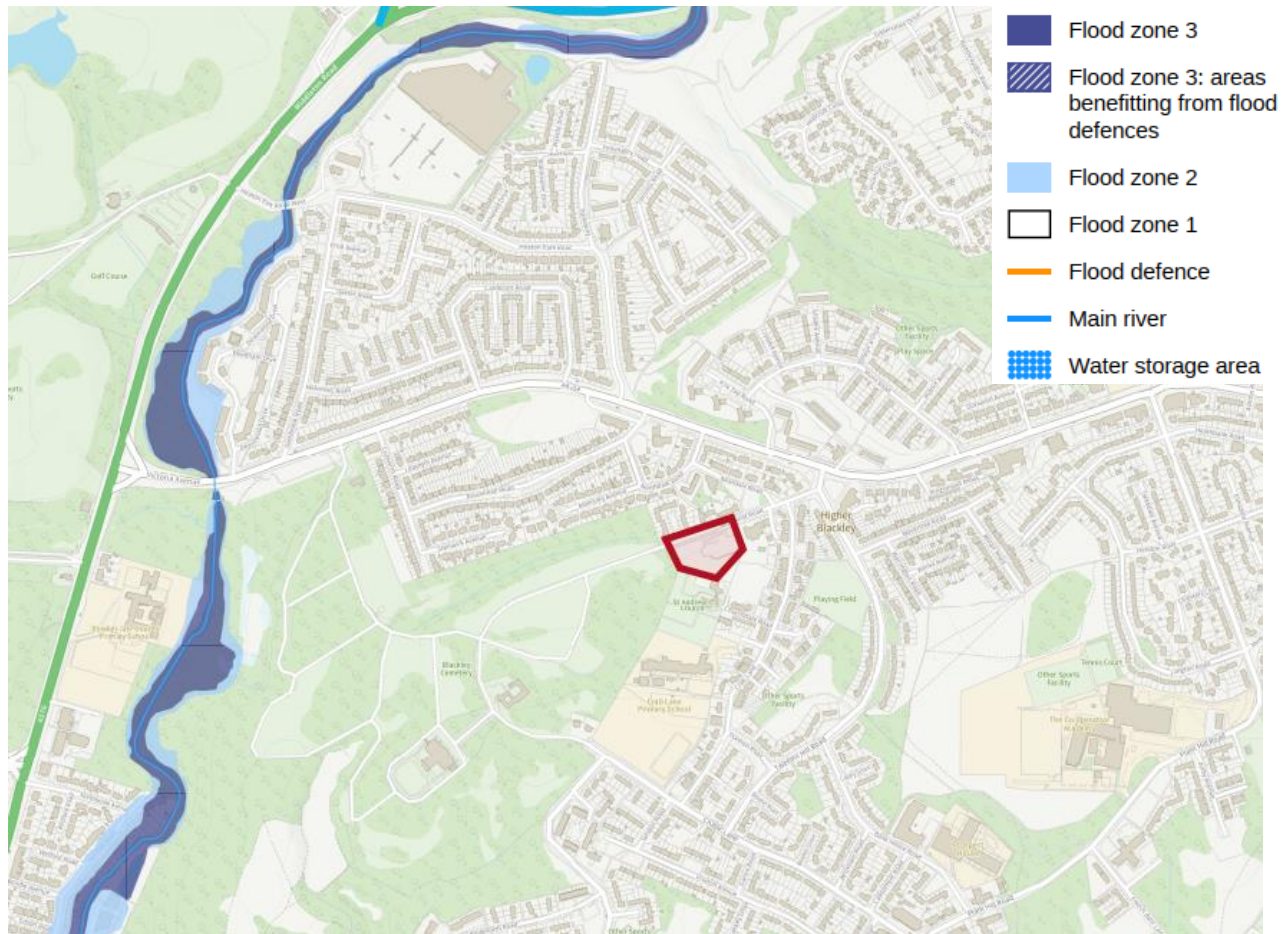


Figure 3 - EA Flood Map for planning (downloaded January 2023)

3.1.2 Comments on Local Flood Policy Documents

3.1.2.1 Local Flood Risk Management Strategy for Manchester 2014

A review of the Local Flood Risk Management Strategy for Manchester states that new developments should be managed to prevent an increase in flood risk and wherever possible to reduce it by sustainable means in accordance with Core Strategy EN14. Policy EN14 requires a site-specific Greenfield runoff on Greenfield sites up to a 1 in 100-year storm event, including consideration of climate change. Furthermore a 50% runoff rate reduction for Brownfield sites, with an aim of reducing runoff to Greenfield rates up to a 1 in 100-year storm event, including consideration of climate change.

3.2 Surface Water Flooding

Surface water flooding occurs where high rainfall events exceed the drainage capacity in an area (i.e. sewer system and/or watercourse), leading to flooding. An extract of the Environment Agency's Risk of Surface Water Flooding map is shown below in Figure 4.

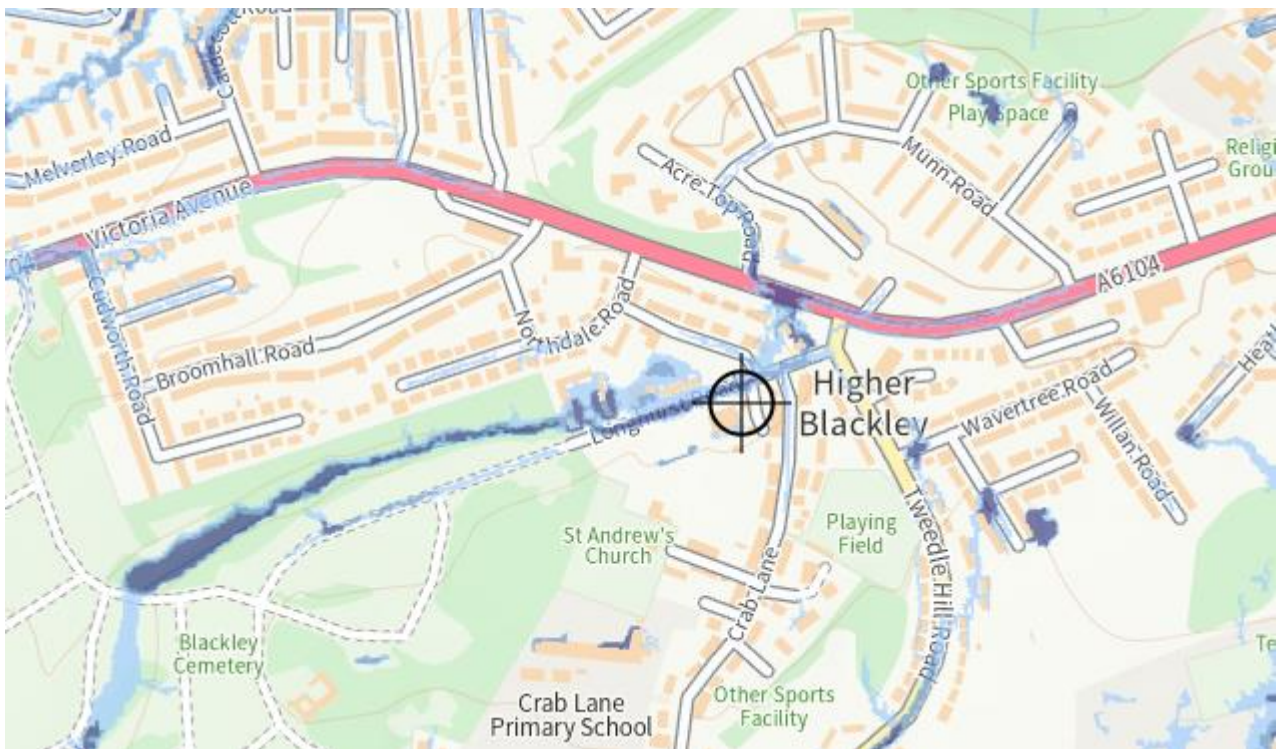


Figure 4 - EA Surface Flooding Map (download January 2023)

Figure 4 shows that the majority of the site is at very low risk of surface water flooding (a probability of flooding of less than 0.1% in a given year), with a small portion of the site at low risk of surface flooding (a probability of flooding between 0.1% and 1% each year) and a portion of the site adjacent to the Playing Field at a high risk of flooding (a probability of flooding greater than 3.3% each year). The risk of surface water flooding is considered small as the majority of the site is unaffected by surface water flooding, and that the small areas which are more prone will be improved through the provision of a new surface water drainage system, requiring no further mitigation measures. There is significant risk of flooding on Longhurst Road directly in front of the site. The site itself is at a higher level than the road and therefore to prevent any worsening of surface water flood risk the proposed drainage plan will drain all of the surface water within the site and prevent runoff to the road. Furthermore, it is advisable that some sort of barrier drain at the edge of the site (such as ACO drains) are used to accommodate this.

3.3 Reservoir Flooding

Although the probability of a catastrophic dam failure is extremely low, the consequence of such an event would be severe. A review of the EA online 'Risk of Flooding from Reservoirs' identified that the application site is not at risk of flooding as a result of reservoir failure.

In the unlikely event of a reservoir breach this would likely result in water finding its way to other water bodies such as rivers and canals, causing increased flood depths and extents within these bodies and therefore the impact and subsequent risk of flooding due to reservoir failure within the application site is considered to be low.

3.4 Ground Water

3.4.1 Ground Water Source Protection Zone

A review of the EA's Ground Water Source Protection Zone (GWSPZ) map for the development site location indicates that the application site is not located within a groundwater source protection zone. The use of infiltration Sustainable Drainage Systems (SuDS) techniques to dispose of surface water runoff from the site will therefore not be precluded on this basis.

3.4.2 Groundwater

A review of the British Geological Society (BGS) website was undertaken to determine the underlying geology of the site. The bedrock geology of the site is of the Pennine Lower Coal Measures Formation consisting of mudstone, siltstone and sandstone, overlain by superficial deposits of a Diamicton Devensian till.

As noted in paragraph 2.1.1, historical borehole records indicate that a clay formation may be present that would preclude the use infiltration, however, a ground investigation performed in September 2022 (see Appendix C) indicated the presence of fine to coarse sand within the overlying made ground, which may be suitable for infiltration. Therefore, subject to future infiltration testing and groundwater modelling, the use of SuDS infiltration techniques may be suitable across the application site.

3.5 Summary of Flood Risk

Based on the above, it can be seen that the application site is at low risk of fluvial flooding and at low risk of flooding from groundwater, sewers and reservoir sources. There is some risk of surface water flooding over small areas of the site, however, these areas of flooding will be improved through the provision of a new surface water drainage system.

4 Development Proposals

4.1 Proposed Development

The proposed 0.37 ha development is to be comprised of no.22 affordable residential properties including site access and infrastructure. A draft planning layout is included in Appendix A showing the development layout.

4.2 Sequential Test

One of the aims of the Planning Practice Guidance (PPG) is to steer development away from zones of high flood risk towards Flood Zone 1. According to Table 2 of the PPG (Flood Risk & Coastal Change), the development is classified as 'More Vulnerable' and the application site is located entirely in Flood Zone 1 according to the current EA Flood Map for Planning, therefore the proposed development elements are all appropriate in flood risk terms.

Based on the above, it can be shown that the development proposals comply with the requirements of Table 3 of the National Planning Policy Framework (NPPF) 2012 and the Planning Practice Guidance – Flood Risk and Coastal Change (PPG) by locating all development within the Flood Zone 1 areas and therefore the Sequential Test is considered to have been passed and there is no requirement to apply the Exception Test.

4.3 Flood Risk Arising from the Development

The new development will result in the redevelopment of greenfield land and therefore it is important that there is no increase in surface water runoff from the development. In line with Local Flood Risk Policy and National Policy, including the NPPF, PPG and the DEFRA Non-Statutory Technical Guidance on SUDs, it is proposed to discharge surface water runoff from the application site at green field runoff rates. Adequate surface water drainage and attenuation is therefore to be provided within the application site to ensure that the proposed surface water drainage system does not exacerbate flood risk outside of the extent of the proposed development.

4.4 Assessment of Pre and Post Development Areas

The application site has been assessed as currently being 86% permeable with the remaining 14% representing the impermeable hardstanding area at the site access to the south. The proposed development is to be considered as 54% impermeable, inclusive of an allowance of 6% for urban creep based on LASOO Technical Standards for Sustainable design and a residential development density of 36 dwellings per hectare, gardens and landscaped areas are not included as they are considered to drain to the ground. Table 1 below shows the change in impermeable areas between the pre-development and post-development scenarios.

Table 1 - Development Areas

	Impermeable Area (ha)	Permeable Area (ha)
Pre-Development	0.05	0.32
Post Development	0.25	0.12

The proposed post development impermeable areas, which have been assumed, are approximate and subject to finalisation of the scheme design. For preliminary calculation they have been adopted in assessing the Greenfield runoff rates and the on-site attenuation volumes.

4.5 Assessment of Discharge Rates

4.5.1 Existing Discharge Rates

Due to the Brownfield component of the site having no development within the last 5 years it is necessary to assume the whole site is classed as greenfield for the purposes of run-off calculations. The MicroDrainage ICP SUDs module was used to calculate the existing run off rate for the 0.37 ha of the application site. With respect

to the ICP SuDS module, Soil class 3 was utilised to represent a predominance of clay which was indicated in the most recent borehole data records.

Using Soil Class 3 to estimate the discharge rate identified the following for the site:

- a) 1 in 1 year = 2.26 l/s
- b) 1 in 30 year = 4.41 l/s
- c) 1 in 100 year = 5.40 l/s
- d) $Q_{\text{bar}} = 2.59 \text{ l/s}$

Giving the following discharge rates per hectare as

- a) 1 in 1 year = 6.11 l/s/ha
- b) 1 in 30 year = 11.91 l/s/ha
- c) 1 in 100 year = 14.59 l/s/ha
- d) $Q_{\text{bar}} = 7.00 \text{ l/s/ha}$

The runoff calculations are contained in appendix D.

4.5.2 Proposed Discharge Rates

A discharge rate of 2.59 l/s is considered unacceptable for providing onsite attenuation in such a constrained site. Correspondence with United Utilities have indicated an acceptable flow rate of 5.00 l/s (Further details found in appendix E.

4.6 Surface Water Drainage Strategy

It is proposed to drain the surface water from the site using a combination of SuDS features (see chapter 5 below) such as rain gardens and water butts; permeable paving, soakaways (dependent, as mentioned above on future permeability testing) with a piped network and underground attenuation as required. The drainage network is then proposed to discharge at a restricted flow rate of 5.00 l/s (subject to further testing and modelling), to the combined sewer at the North-East of the site subject to agreeing run-off rates and drainage consent with United utilities. It will be necessary to contain the exceedance flows due to the 1 in 100 year + 40% climate change storm events on site within the proposed attenuation structures. Site levels may need to be raised in order to facilitate a gravity-fed drainage network.

A preliminary drainage strategy has been developed and this is contained within Appendix F.

4.6.1 Flood Risk due to Surface Water Runoff from the Site

In order to ensure that surface water runoff from the site does not cause an increase in flood risk, the management of runoff has been considered via a sequential approach, in line with Building Regulations. The following options for the disposal of surface water runoff were considered, in order of preference:

- i) A soakaway or some other infiltration system
- ii) A watercourse
- iii) A sewer

4.6.1.1 Discharge via Infiltration to SuDS

The preferred method for disposal of surface water runoff from the application site would be via infiltration SuDS methods.

As mentioned above, in paragraph 2.1.1, ground investigations performed in September 2022 (see Appendix C) show the site is primarily composed of made ground with depths of up to 10m, with a preponderance of fine

to coarse sand alongside slightly sandy clay. Ground conditions, therefore, may be suitable for infiltration SuDS methods, contingent on future permeability testing and ground water modelling.

4.6.1.2 Discharge to Watercourse

From a review of the site, as stated in paragraph 2.2.2, a culverted watercourse is situated to the North-west. It is likely that due to the current high risk of surface water flooding (see figure 4) this will not be suitable for discharge

4.6.1.3 Discharge to Sewer

As stated in paragraph 2.2.3.3 a 225mm diameter surface sewer runs North and is along Longhurst Road. This would provide a suitable connection for surface water runoff given the level differences between the proposed outfall manhole and the proposed site and the capacity of the sewer.

4.6.1.4 Preliminary Design of Storage Systems

In order to provide an estimation of the future attenuation volumes required, a preliminary assessment using the Micro Drainage modelling programme has been undertaken.

Based on the assumed discharge rate for the site of 5.00 l/s an initial assessment has been undertaken as to the preliminary sizing of the required storage capacity.

Table 2 - Summary of Micro Drainage Quick Storage Calculations for a 5.00 l/s discharge rate

	Impermeable area (ha)	Assumed discharge rate (l/s)	1 in 30-year storage (m ³)	Additional storage required to satisfy 1 in 100 (plus 40% CC) exceedance flows (m ³)	Total storage to satisfy 1 in 100 (plus 40% CC) exceedance flows (m ³)
Application Site	0.25	5.00	55.5	72	127.5

Dependent on discharge rates, initial calculations suggest a storage capacity of 127.5m³ will be required to provide attenuation for the 1 in 30-year storm with anything above this being contained and managed on site through the use of additional storage. Exact storage volume will be determined at the detailed design stage.

4.6.2 Minimum Finished Floor Levels & Overland Flood Route

In setting the final external levels for the development it is important to ensure that if flows in exceedance of the 1 in 100 years plus 40% allowance for climate change storm event occur or a failure of the site surface water drainage system occurs, that suitable overland flood routes are provided within the development to ensure no localised flooding of the buildings occurs within the development.

It is therefore recommended that either the finished floor levels of the new buildings are set a minimum 150mm above average ground level and this will ensure that in the event of extensive overland flows, no flooding of the buildings will occur. Alternatively, during the detailed design of the drainage, it is recommended that overland exceedance routes and excess storage areas are designed as to ensure flows are away from critical buildings and instead captured within non-critical areas.

4.6.3 Residual Flood Risk

If the above mitigation measures are provided as part of the development, it is considered that the primary residual failure would be as a result of some type of failure of the site drainage system during the life of the development. Regular, ongoing maintenance will be required to ensure that the capacity of the system is maintained as it has been designed. In addition, as discussed above there remains a residual risk of a storm event that exceeds the capacity of the drainage system, as events beyond the 1 in 100 year plus 40% allowance for climate change storm event will not be catered for explicitly.

4.6.4 Future maintenance responsibilities

Upon completion of the development the drainage system will be offered for adoption under a section 104 agreement to the district network operator United Utilities.

5 Sustainable Drainage Systems

In order to comply with the national guidelines and local policies set by Manchester Council it is required to undertake an assessment of the possible use of SUDs techniques within the proposed surface water drainage design.

5.1 SuDS and Design Principles

As stated above, where it is possible, it is proposed to incorporate a fully compliant SuDS strategy where economically viable and reasonable in relation to the discharge of surface water drainage from the proposed development.

This section will also seek to identify some of the SUDS systems and techniques which are to be considered and reviewed as part of the proposed detailed surface water drainage design and subsequent planning application for the development site.

5.2 The SuDS Management Train

The overarching principles of a SUDS system are to minimise the impacts arising from the development on the quantity and quality of the development surface water run-off, whilst at the same time replicating the natural drainage from the site before development. SUDS key objectives are to minimise the impacts from the development on the quantity and quality of run-off and to maximise amenity and biodiversity opportunities.

The accepted SUDS management train consists of three elements:

Source Control

Water butts, green roofs, filter drains, pervious surfaces, swales, rainwater harvesting

Site Control

Swales, ponds, wetlands, infiltration devices

Regional Control

Basins, ponds and wetlands

Reservoirs

The following is an illustration of these principles and how they may be applied to a development via a SUDS Management Train.

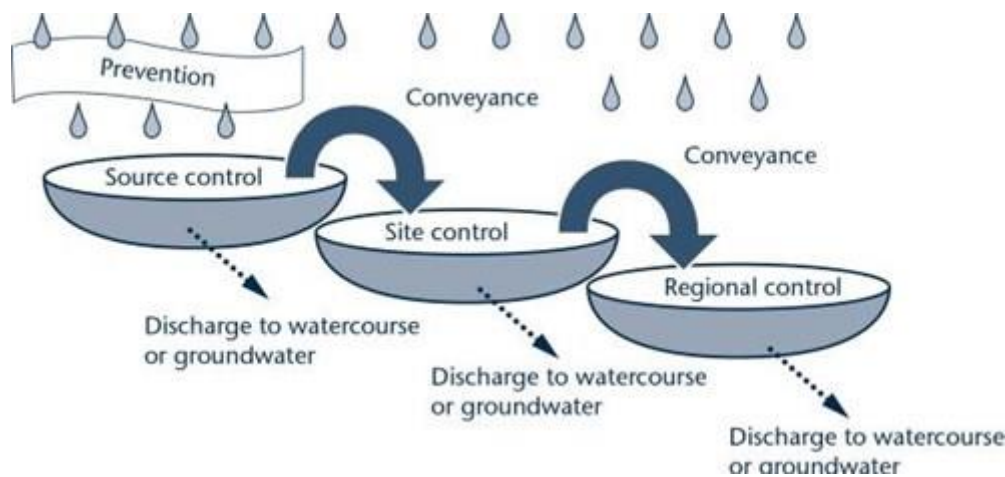


Figure 5 -SuDS Management Train

Various methods are currently available for source, site and regional control. A review has been undertaken of how best the various systems and sub techniques could be incorporated into the proposed surface water management design and these are set out below:

Table 3 - Sustainable Drainage Features

Type of SuDS	Description	Applicability to the Site
Water butts	Small storage tanks on each individual housing plot	This may be appropriate for this type of development. Stored rainwater reduces run-off and can be re-used for different applications.
Grey water recycling	Water collected from residential and commercial use and reused.	This is considered not to be appropriate for this site.
Rainwater recycling	Recycling of water from roofs and impermeable areas.	This may be appropriate for this type of development. Store rainwater reduces run-off and can be re-used for different applications.
Green Roofs	Vegetated roofs that reduce runoff and remove pollutants	This is considered not to be appropriate for this site.
Filter drains	Linear drains or trenches filled with granular material that allow infiltration to the surrounding ground	Subject to a more detailed assessment of the site permeability and possible contamination issues this may be appropriate for the site.
Filter Strips	Strips of grass or other vegetation to treat runoff from adjacent impermeable areas	Subject to a more detailed assessment of the site permeability and possible contamination issues this may be appropriate for the site.
Pervious surfaces	Surfaces that allow surface water inflow into underlying surfaces	Subject to a more detailed assessment of the site permeability and possible contamination issues this may be appropriate for the site.
Swales	Vegetated channels to convey store and treat runoff.	This is considered not to be appropriate for this site due to spatial constraints.
Local shallow basins/ponds	Shallow areas of open space that temporarily hold water and collect silt	This is considered not to be appropriate for this site due to spatial constraints.
Infiltration devices	Generally granular trenches or soakaways that store water and allow infiltration to the surrounding ground	Subject to a more detailed assessment of the site permeability and possible contamination issues this may be appropriate for the site.

As the proposed SUDS strategy will only be seeking to utilise source and site wide methods, regional methods have not been considered.

5.3 Proposed Surface Water Drainage Principles

The proposed surface water runoff is being restricted to the equivalent existing greenfield runoff rates as stated above, with above attenuation provided by the proposed attenuation features or alternative acceptable SuDS techniques as outlined in Table 4, thereby meeting some of the current SuDS management design guidelines.

Within this site a variety of SUDS techniques can be adopted as it is anticipated that they will be required to comply with the any new SUDS National Standards.

In terms of utilising SuDS infiltration systems, the recent site investigations (see paragraph 3.4.2) has identified overlying clay formations nearby, which may indicate that use of SuDS infiltration systems will may not be viable at the proposed site. Further permeability testing within the site along with groundwater monitoring is required to fully assess the feasibility of using such techniques within the whole site. The individual elements of the site wide surface water drainage system that could be incorporated into the final design and site layout are discussed in more detail below:

Residential Parking Areas

Parking areas could utilise permeable paving, which will act as infiltration devices and provide a level of water treatment to the potentially contaminated runoff from the vehicle parking areas. Should infiltration not be viable under the permeable paving then it could still be considered to provide a level of water treatment to the potentially contaminated runoff from the vehicle parking areas.

House Drainage

If ground conditions permit, conventional infiltration techniques (i.e., soakaways) should be adopted to drain the roof and external hard standing areas. Rain Garden can be incorporated into soft landscaping.

Water butts and rainwater harvesting could also be considered in order to not only reduce surface water runoff but also to reduce water demand in line with the requirements of the Code for Sustainable Homes.

Highways

Highways and footways could be designed by eliminating edge kerbing to allow surface water runoff to discharge direct to an edge swale, this will need to be agreed with the Manchester City Council Highway Authority. Alternatively, edge filter strips could be utilised to receive the runoff. In the event that such a design was not acceptable to the Highway Authority, then conventional gulley's could be utilised which would discharge into the edge swale, however this option would result in the swales becoming deeper and their appearance more like a ditch which would create possible maintenance and safety issues. Alternatively, a conventional below ground piped highway drainage system could be considered discharging to either swales or a downstream surface water sewer system.

Potential SuDS features could include:

Filter Drains

Filter drains are shallow trenches filled in with stone / gravel that create temporary subsurface storage for the attenuation, conveyance and filtration of surface water runoff. Filter drains can help reduce pollutant levels in runoff by filtering out fine sediments, metals, hydrocarbons and other pollutants. A perforated pipe should be provided at the base of the filter drain to collect and convey water.

Filter Strips

Filter strips are uniformly graded and gently sloped strips of grass or other dense vegetation that are designed to treat runoff from adjacent impermeable areas by promoting sedimentation, filtration and infiltration, where

acceptable. At low moderate velocities, filter strips effectively reduce particulate pollutants levels by removing sediments, organic materials and heavy metals. Where infiltration is possible, its extent tends to be limited during intense storms as only a small proportion of the runoff is lost.

Pervious pavements

Pervious pavements provide a pavement suitable for pedestrian and/or vehicular traffic, while allowing rainwater to infiltrate through the surface and into the underlying structural layers. The water is temporarily stored beneath the overlying surface before use, infiltration to the ground, or controlled discharge.

5.3.1 Water Quality

The SUDS design should seek to provide an appropriate management train of SUDS components to effectively mitigate the pollution risks associated with the different site users. Within this development, there are two key drivers in respect of pollutant risks to the offsite watercourses, these being pollution from vehicle parking areas and pollution from highways. In accordance with Table 3.3 of The SUDS Manual, the required number of treatment train components required for the development is two.

Reviewing the SUDS options, set out within Section 5.3, it can be demonstrated that up to four levels of treatment may be possible with these being provided by the following systems:

A. Permeable Paving

B. Filter Strips

C. Swales

D. Detention Ponds

It can therefore be demonstrated that if during the detailed surface water drainage design, two of the components are not utilised, then an adequate number of treatment components will be provided.

It is recommended that the future detailed surface water drainage design for the development site should provide at least two levels of treatment in respect of water quality where possible. Although possible options have been stated above, alternative SUDS options may also be considered during the detailed design stage which achieves the same water quality objective. Provided that the above two levels of treatment are provided then there should be no reduction in the overall water quality within the existing watercourses, however, consideration should also be made as to the overall water quality objectives of the existing watercourses in particular any downstream ecologically sensitive areas (e.g. SSSI) that may be affected by a change in the water quality regime of the existing downstream watercourses.

6 Foul Drainage Assessment

6.1 Existing Foul Drainage

As stated in section 2.2.3.2, UU records (see appendix B) indicate that to the north-east of the development a 225mm diameter Combined sewer runs along Longhurst Road. UU records indicate the cover level for the downstream Manhole No. 7900 at 85.79m and the invert level at 82.01m giving a cover depth of 3.78m.

6.2 Proposed Post Development Flows

Paragraph B3.1 1b) within the *Design and Construction Guidance for foul and surface water sewers* gives peak design flow rates for dwellings at 0.05 l/s per dwelling. With 22 dwellings proposed for the development, the proposed foul flow rates were calculated as:

$$\text{Proposed Foul Flow Rate} = 22 \times 0.05 = 1.1 \text{ l/s}$$

6.3 Proposed Foul Drainage Design

A new positive gravity foul water drainage system will be provided with a new connection onto the existing UU foul sewer network at Longhurst Road. Alternatively, if required, following surveys of the site drainage, the site foul drainage will discharge to the combined sewer that bisects the site to the south.

7 Consents Required

In order to undertake the associated connections to the watercourse and construct the various foul and surface water drainage works, the following consents will be required to be obtained:

7.1 Section 106 of the Water Industry Act 1991

Where it is proposed to have new drainage communicate with existing drainage under adoption by the sewerage undertaker, this will be required to be undertaken under Section 106 of the Water Industry Act 1991.

7.2 Section 104 of the Water Industry Act 1991

Where it is proposed to construct any new sewers which are to subsequently be adopted by United Utilities sewers, then this will be required to be undertaken under Section 104 of the Water Industry Act 1991.

7.3 Land Drainage Consent.

Requirement to seek legal consent from Manchester Council prior to making changes/connection to a watercourse. Required under Section 23 of the Land Drainage Act.

8 Conclusions and Recommendations

The report has identified the following:

- The development site is shown on the EA Statutory Flood Maps for Planning as being entirely within Flood Zone 1, thus it is considered to be at low risk of fluvial flooding.
- The proposed development consists of residential dwellings with new residential parking areas and access roads.
- The application site is predominantly considered a greenfield site from a drainage perspective, with the car park area at the southern access considered to be brownfield.
- The proposed development is classified as “More Vulnerable” in accordance with Table 2 of the PPG.
- The nearest main river to the site is the River Irk, approx. 220m north-west of the development site.
- From records provided by UU, there is a combined sewer that bisects the site, east to west, to the south, a foul water drain adjacent to the north-east corner of the site on Longhurst Road and a combined sewer to the south of the site.
- A review of all the potential flood risks to the application site has identified that the site is considered to be at low risk of flooding from fluvial sources, flooding from ordinary watercourses, surface water, sewer flooding, groundwater sources, overland flows, and reservoir failure.
- Since the entire site is located in Flood Zone 1 and the development is appropriate in flood risk terms, then the proposed development is considered to have passed the Sequential Test, and there is no need to pass the Exception Test.
- From a review of available information, it appears that the bedrock geology of the site is of the Pennine Lower Coal Measures Formation consisting of mudstone, siltstone and sandstone, overlain by superficial deposits of a Diamicton Devensian till. A site investigation performed in September 2022 indicates the presence of coarse to fine sand which may be suitable for infiltration techniques. This is to be confirmed through further ground investigation with infiltration testing and groundwater modelling.
- It is proposed to discharge surface water from the application site to the 225mm Combined Sewer following confirmation from United Utilities (see appendix E).
- Through a preliminary assessment a discharge rate of 5.00 l/s have been identified requiring respectively 55.5 m³ of storage for the 1 in 30-year event and 127.5 m³ of storage for the 1 in 100-year event with an additional 40% allowance for climate change.
- An assessment of foul water discharge has calculated a rate of 1.1 l/s, to be discharged to the foul water sewer adjacent to the north-east corner of the site on Longhurst Road.

Based on the above the following recommendations are made:

- As part of the detailed design the use of SuDS features should be considered to maximise the use of SUDS techniques and provide alternative means of achieving good water quality which will potentially remove the need for a separate oil/petrol interceptor.
- The FFL of the new buildings shall be set 150mm above the proposed ground level to ensure that if flows in exceedance of the 1 in 100 years plus 40% allowance for climate change storm event occur or a failure of the site surface water drainage system occurs, that suitable overland flood routes are provided within the development to ensure no localised flooding of the buildings occurs.
- Regular, ongoing maintenance will be required to ensure that the capacity of the system is maintained as it has been designed.

Appendix A Draft Planning Layout

Site Plan - Ground Floor - Spit Level.
1 : 200



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Bowker Sadler Partnership Limited asserts its rights to be identified as the author of this design.

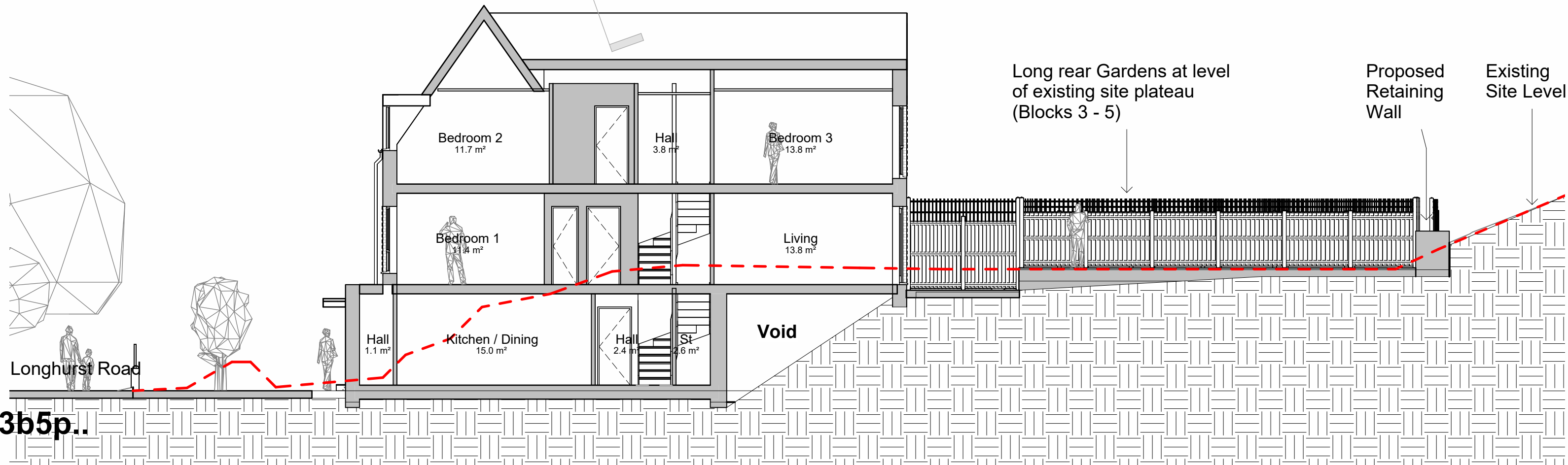
■ Drawing not to be scaled
■ Report Errors and Omissions to the Architect.
■ Check all dimensions on site
■ Drawing to be read in conjunction with the Health and Safety Plan and all relevant Risk Assessments

1:50
1:100

Site Plan - FF Floor Plan - Split level.
1 : 200



Section 3 - Block 4 3b5p..
1 : 100



B	27/09/22	KS	Design update	SW
A	14/09/22	SW	Levels added to rear gardens and retaining walls	CL
Rev.	Date	Dm.		Chkd.

BOWKER SADLER ARCHITECTURE

Hatherlow House | Hatherlow | Romiley | Stockport | SK6 3DY
0161 406 7333 | office@bowker-sadler.co.uk | www.bowker-sadler.co.uk

Project
Longhurst Road, Blackley

Client
Great Places Housing Group

Drawing
Site Plan - All Levels

Scale	Sheet Size	Drawn	Checked	Date
As indicated	@ A1	SW	CL	14.09.22
Project No.	Originator	Zone	Level	Form Discipline
20-043 - BSA -				Number Revision
Status				

Sketch

Appendix B UU Sewer Records

Pell Frischmann

5
Manchester Square,
Marylebone, London
W1U 3PD

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: 106240 - Longhurst Road
Our Ref: UUPS-ORD-456183
Date: 10/01/2023**

Dear Sirs

Location: 7 LONGHURST ROAD, MANCHESTER, M9 8NS

I acknowledge with thanks your request dated 09/01/2023 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,



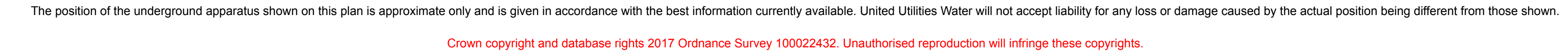
Karen McCormack
Property Searches Manager

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)".

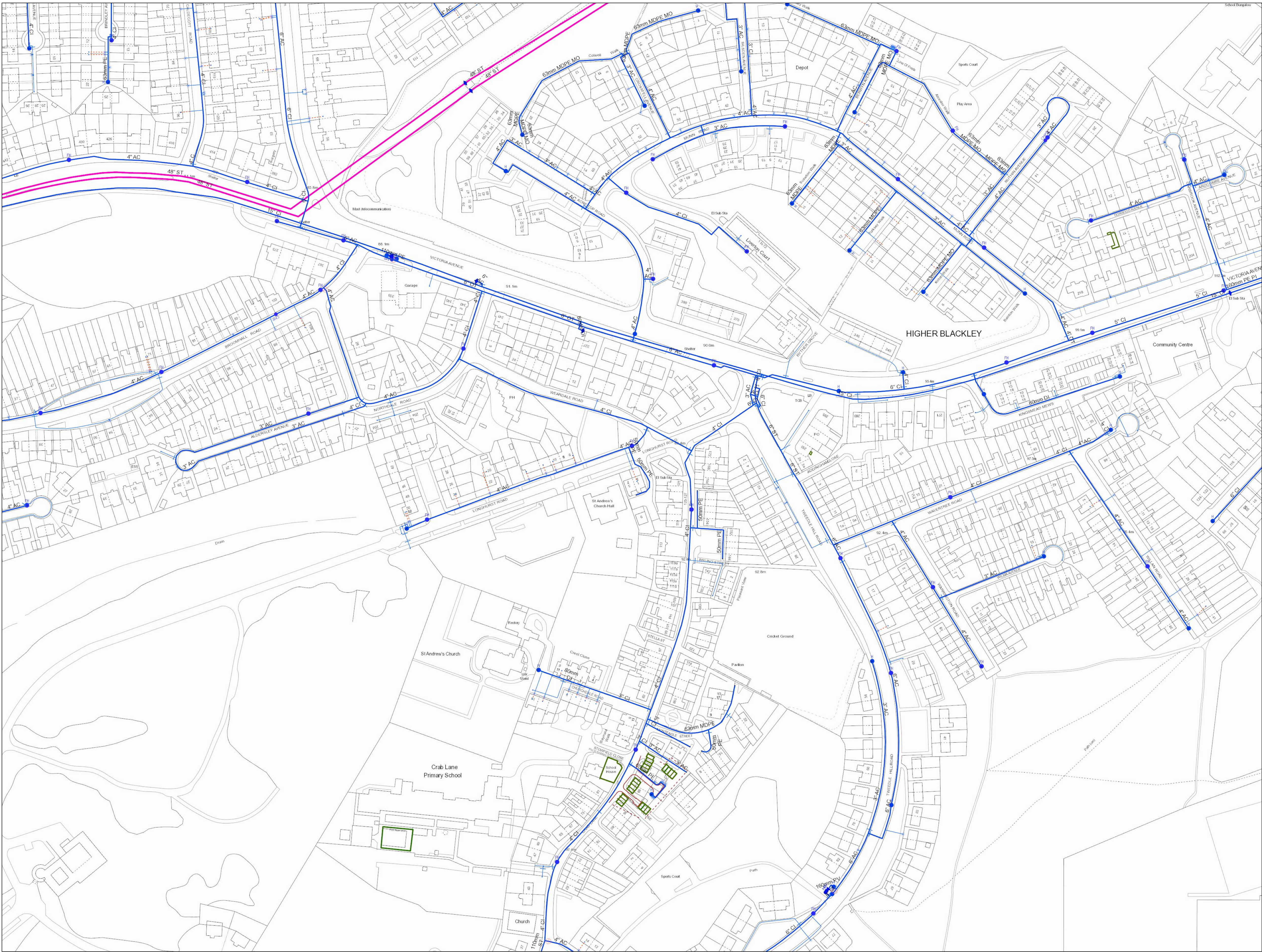
TERMS AND CONDITIONS:

- 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.



0808		CO	0	150	VC	11.88773	16.1341223
7203		CO		150	VC	6.247731	
8200	96.62	CO	93.83	300	VC	12.80625	1 in 53
8713		CO		150	VC	8.967316	
7002	88.23	CO	84.09	375	VC	32.32768	
7200	98.06	CO	94.06	325	VC	75.16648	1 in 121
7010		CO		275	VC	56.73971	
1006	102.31	CO	100.06	225	VC	27.51363	1 in 55
0817		CO		150	VC	33.13966	

Address or Site Reference: 7 LONGHURST ROAD, MANCHESTER, M9 8NS	
Scale: 1:1250	Date: 10/01/2023
Sheet:	1 of 1
Printed by:	Property Searches
SEWER RECORDS  United Utilities Water for the North West	



LEGEND

Proposed	Abandoned	Live	
			Distribution Main
			Trunk Main
			Comms Pipe
			Private Pipe
			Concessionary Service
			Raw Water
			LDWM Raw Water
			LDWM Treated Water

	Air Valve
	AC Valve, open
	AC Valve, closed
	CC Valve, open
	CC Valve, closed
	Non Return Valve
	Pressure Management Valve
	OMS Valve
	Stop Tap
	Flow Meter
	Domestic Meter
	Commercial Meter
	Pump
	Hydrant
	Fire Hydrant
	Anode
	Chlorination Point
	De-chlorination Point
	Strainer Point
	Access Point
	Hatch Box
	IP Point
	Sampling Station
	Logger Box
	Bore Hole
	Inlet Point
	Bulk Supply Point
	End Cap
	Site Termination
	Change of Characteristic
	Condition Report

Property Types	
	Water Tower
	Valve House
	Booster Pumping Station
	Intake Pumping Station
	Water Treatment Works
	Supply Reservoir
	Service Reservoir
	Impounding Reservoir
	Pipe Bridge

Symbology for proposed assets is the same as above, but shown in **green**.
Symbology for abandoned assets is the same as above, but shown in **black**.

Address or Site Reference:

7 LONGHURST ROAD,
MANCHESTER,
M9 8NS

Scale: 1:1250
Date: 10/01/2023

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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Appendix C Site Investigation



Key:
Exploratory Holes
Machine Excavated Trial Pit
Windowless Sampling Borehole
Monitoring Installation
Soakaway / Permeability Testing
Site Features
Site Boundary

Notes
1) Base image provided by Google.
2) All drawn features are approximate.

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A	anuar' 2023	First issue
REV	DATE	COMMENT ON VARIATION

soiltechnics
environmental • geotechnical • building fabric

PROJECT
Longhurst Road, Blackley

TITLE
Exploratory Hole Location Plan

PROJECT No. STU5839	DRAWING 03	REVISION A
------------------------	---------------	---------------

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
Rough vegetation over dark brown to grey slightly gravelly clayey SAND with frequent rootlets. Gravel of fine to medium ash. (TOPSOIL)							0.20		D
Grey very clayey SAND with gravel bed in part of the pit from 0.6m. Gravel is medium to coarse angular limestone. (MADE GROUND)	0.40						0.50		D
TRIAL PIT TERMINATED AT 0.90m	0.90						0.90		B
Notes				Title		Dimensions (w x l)		Date(s)	
				Trial pit record		m x m		13/12/2022	
Groundwater observations				Method		Logged by		Sheet number	
				Hand tools		TO		Sheet 1 of 1	
				Level (m OD)		Compiled by		Revision	
				-		AM		A	
				Co-ordinates		Checked by		TP01	
				-					

[illegible]

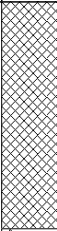
Notes Infiltration testing performed.	Title Trial pit record	Dimensions (w x l) m x m	Date(s) 13/12/2022
	Method Hand tools	Logged by TO	Sheet number Sheet 1 of 1
Groundwater observations	Level (m OD) -	Compiled by AM	Revision A
	Co-ordinates -	Checked by	TP01A

Longhurst Road, Blackley
STU5839

soiltechnics
environmental • geotechnical • building fabric

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING							
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE					
Rough vegetation over dark brown to grey slightly gravelly clayey SAND with frequent rootlets. Gravel is fine to medium ash. (TOPSOIL)	0.40						0.20		D					
Grey very clayey fine to medium SAND. (GLACIAL TILL)							0.50		D					
Light brown medium to coarse angular GRAVEL of limestone (GLACIAL TILL)							1.00		B					
Firm dark grey very silty CLAY. (GLACIAL TILL)		1.10												
		1.50											B	
													2.00	B
														2.50
		3.00												
													3.50	
														4.00
		TRIAL PIT TERMINATED AT 4.00m		4.00	B									

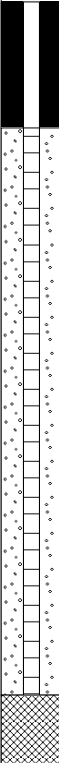
Notes	Title	Dimensions (w x l)	Date(s)
	Trial pit record	m x m	13/12/2022
Groundwater observations	Method	Logged by	Sheet number
	Hand tools	TO	Sheet 1 of 1
	Level (m OD)	Compiled by	Revision
	-	AM	A
	Co-ordinates	Checked by	TP02
	-		

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
Grass over slightly sandy GRAVEL of fine to coarse brick, concrete, ash and slate. (MADE GROUND)							0.20		D
							0.50		D
							0.70		D
							1.00		B
Dark grey very gravelly CLAY. (GLACIAL TILL)	1.20						1.50		B
Grey very sandy silty CLAY. (GLACIAL TILL)	1.90						2.00		B
TRIAL PIT TERMINATED AT 2.50m	2.50						2.50		B

Notes	Title	Dimensions (w x l)	Date(s)
	Trial pit record	m x m	13/12/2022
Groundwater observations	Method	Logged by	Sheet number
	Hand tools	TO	Sheet 1 of 1
	Level (m OD)	Compiled by	Revision
	-	AM	A
	Co-ordinates	Checked by	TP03
	-		

STRATA				WATER STRIKES	IN SITU TESTING		SAMPLING		
DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
Grass over slightly sandy GRAVEL of fine to coarse brick, concrete, ash and slate. (MADE GROUND)							0.20		D
							0.50		D
							1.00		B
							1.50		B
							2.00		B
							2.20		B
Dark grey very gravelly CLAY. (GLACIAL TILL)	2.40						2.70		B
...at 2.7m depth, hydrocarbon staining.							2.70		ES
Grey very sandy silty CLAY. (GLACIAL TILL)	3.00						3.20		B
							3.70		B
TRIAL PIT TERMINATED AT 4.00m	4.00								

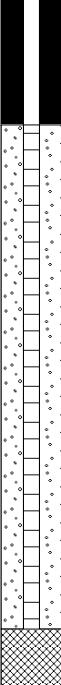
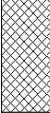
Notes Hydrocarbon staining at 0.7m depth.	Title Trial pit record	Dimensions (w x l) m x m	Date(s) 13/12/2022
	Method Hand tools	Logged by TO	Sheet number Sheet 1 of 1
Groundwater observations Groundwater inflow at 3.7m depth.	Level (m OD) -	Compiled by AM	Revision A
	Co-ordinates -	Checked by	TP04

INSTALL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Bare ground over dark brown slightly clayey SAND with frequent rootlets. (TOPSOIL)	0.30				S 1.00 - 1.45	(4) 8					0.20		D
	Brown mottled grey clayey SAND. (GLACIAL TILL)											0.50		D
												0.80		D
												1.20		D
	Firm brown very sandy CLAY. (GLACIAL TILL)	1.50				S 2.00 - 2.45	(3) 5					1.70		D
												2.20		D
												2.70		D
	No recovery	3.00				S 3.00 - 3.45	(4) 12							
	Brown very clayey SAND. (GLACIAL TILL)	4.00				S 4.00 - 4.45	(5) 16					4.00	5.00	D
	No recovery	5.00				S 5.00 - 5.45	(7) 16							
						S 5.60 - 6.05	(17) 45							
	BOREHOLE TERMINATED AT 6.05m		6.05											

Notes	Title			Date(s)	
	Dynamic windowless sampling record			14/12/2022	
	Recovery details		Method	Logged by	Sheet number
Groundwater observations Groundwater encountered at 3.0m depth.	Range (m)	Recovery (%)	Windowless sampler	TO	Sheet 1 of 1
	0.00 - 3.00	100	Level (m OD)	Compiled by	Revision
	3.00 - 4.00	0	-	AM	A
	4.00 - 5.00	100	Co-ordinates	Checked by	WS01
	5.00 - 5.50	0	-		

INSTALL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Bare ground over dark brown slightly clayey SAND with frequent rootlets. (TOPSOIL)	0.30										0.20		D
	Brown mottled grey gravelly clayey SAND. Gravel of fine to medium angular limestone and brick. (MADE GROUND)											0.50		D
												0.80		D
	Firm brown very sandy CLAY. (GLACIAL TILL)	1.00				S 1.00 - 1.45	(3) 11					1.20		D
												1.70		D
						S 2.00 - 2.45	(7) 13					2.20		D
												2.70		D
	Brown very clayey SAND. (GLACIAL TILL)	3.00				S 3.00 - 3.45	(4) 8					3.00	4.00	B
						S 4.00 - 4.45	(5) 15					4.00	5.00	B
						S 5.00 - 5.45	(5) 25					5.00	6.00	B
						S 5.60 - 6.05	(13) 36							
	BOREHOLE TERMINATED AT 6.05m	6.05												

Notes Borehole terminated due to refusal.	Title			Date(s)	
	Dynamic windowless sampling record			14/12/2022	
	Recovery details		Method	Logged by	Sheet number
Groundwater observations Groundwater encountered at 3.0m depth.	Range (m)	Recovery (%)	Windowless sampler	TO	Sheet 1 of 1
	0.00 - 1.00	80	Level (m OD)	Compiled by	Revision
	1.00 - 2.00	80			
	2.00 - 3.00	90	Co-ordinates	Checked by	WS02
	3.00 - 4.00	90			
	4.00 - 5.00	90			
	5.00 - 6.00	90	-		

INSTALL	STRATA				WATER STRIKES	SPT TESTING				OTHER IN SITU TESTING		SAMPLING		
	DESCRIPTION	DEPTH (m)	REDUCED LVL (m OD)	LEGEND		TYPE / DEPTH (m)	RESULT	CASING DEPTH (m)	WATER LEVEL (m)	TYPE / DEPTH (m)	RESULT	FROM (m)	TO (m)	TYPE
	Grass over dark brown clayey gravelly SAND. Gravel of fine to medium angular brick concrete and limestone. (MADE GROUND)	0.90				S 1.00 - 1.45	(3) 12					0.20		D
				0.50								D		
				0.80								D		
	Firm brown very sandy CLAY. (GLACIAL TILL)	1.80				S 2.00 - 2.45	(4) 14					1.20	D	
				1.70								D		
	Brown very silty SAND. (GLACIAL TILL)			2.00								3.00	B	
						S 3.00 - 3.45	(5) 14					3.00	4.00	B
												4.00	5.00	B
						S 5.00 - 5.45	(11) 54							
	BOREHOLE TERMINATED AT 5.45m	5.45												

Notes Borehole terminated due to refusal.	Title			Date(s)	
	Dynamic windowless sampling record			14/12/2022	
	Recovery details		Method	Logged by	Sheet number
	Range (m)	Recovery (%)	Windowless sampler	TO	Sheet 1 of 1
Groundwater observations Groundwater encountered at 3.0m depth.	0.00 - 1.00	100	Level (m OD)	Compiled by	Revision
	1.00 - 2.00	90			
	2.00 - 4.00	100	Co-ordinates	Checked by	WS03
	4.00 - 5.00	90			

Appendix D Runoff Calculations

Calculated by: Philip Clark

Site name: Longhurst Road

Site location: Blackley

Site Details

Latitude: 53.53207° N

Longitude: 2.23089° W

Reference: 1274794377

Date: Feb 20 2023 13:55

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Runoff estimation approach IH124

Site characteristics

Total site area (ha): 0.37

Methodology

 Q_{BAR} estimation method: Calculate from SPR and SAAR

SPR estimation method: Calculate from SOIL type

Soil characteristics

Default

Edited

SOIL type: 4 4

HOST class: N/A N/A

SPR/SPRHOST: 0.47 0.47

Hydrological
characteristics

Default

Edited

SAAR (mm): 963 963

Hydrological region: 10 10

Growth curve factor 1 year: 0.87 0.87

Growth curve factor 30 years: 1.7 1.7

Growth curve factor 100
years: 2.08 2.08Growth curve factor 200
years: 2.37 2.37

Notes

(1) Is $Q_{BAR} < 2.0$ l/s/ha?

When Q_{BAR} is < 2.0 l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

(2) Are flow rates < 5.0 l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

(3) Is $SPR/SPRHOST \leq 0.3$?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates

Default

Edited

 Q_{BAR} (l/s): 2.59 2.59

1 in 1 year (l/s): 2.26 2.26

1 in 30 years (l/s): 4.41 4.41

1 in 100 year (l/s): 5.4 5.4

1 in 200 years (l/s): 6.15 6.15

This report was produced using the greenfield runoff tool developed by HR Wallingford and available at www.uksuds.com. The use of this tool is subject to the UK SuDS terms and conditions and licence agreement , which can both be found at www.uksuds.com/terms-and-conditions.htm. The outputs from this tool are estimates of greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, CEH, Hydrosolutions or any other organisation for the use of this data in the design or operational characteristics of any drainage scheme.

Appendix E United Utilities Correspondence

Philip Clark

From: wastewaterdeveloperservices@uuplc.co.uk
Sent: 27 February 2023 16:19
To: Philip Clark
Subject: RE: Pre Development Enquiry for: Longhurst Road Blackley M9 8NS UU
Reference Number : 03501686



Hi Phil,

please see below.

thanks

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

From: wastewaterdeveloperservices@uuplc.co.uk [wastewaterdeveloperservices@uuplc.co.uk]
Sent: 02/02/2023 10:20
To: pclark@pellfrischmann.com
Subject: Pre Development Enquiry for: Longhurst Road Blackley M9 8NS UU Reference Number : 03501686

Good Morning, Philip

[Pre Development Enquiry for: Longhurst Road Blackley M9 8NS UU Reference Number : 03501686](#)

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 225mm diameter public combined sewer within Longhurst Road located to the North of your proposed development at an unrestricted rate.

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

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

Thank you for sending in the Windowless Samples and Trial Pit Records. It does appear infiltration would be unfeasible onsite.

We would request an onsite plan detailing where on site these took place, and photographic evidence to be submitted at planning stage.

Waterbody

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

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

Highway Drainage

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

Public Sewer

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 225mm diameter public combined sewer within Longhurst Lane located North of the proposed site at a pass forward flow to be agreed by the Lead Local Flood Authority. United Utilities request that any agreed rate does not exceed 5l/s.

According to historic site mapping records, it appears this plot has been green scrub land since at least 2015 and therefore should be treated as a greenfield site. Furthermore, the modified rational method should only be used for drafting plans and very simple sites, in accordance with the Ciria SuDS manual.

Utilising the HR Wallingford greenfield tool with the most impermeable ground utilised, the Qbar rate is equal to 2.46l/s. However, to mitigate blockages we would accept 5l/s as mentioned above.

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



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

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

Sent: 20/01/2023 15:43

To: pclark@pellfrischmann.com

Subject: 03501686Longhurst Road Blackley M9 8NS

Dear Philip

PRE DEVELOPMENT APPLICATION AT: – UU Ref 03501686

Please accept this email as receipt of your application received on 19/1/2023 for the above development. This has

now been logged on our system and the job reference is 03501686, 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 Ashleigh Bellerby for technical assessment. You will receive their response within 8 working days.

Kind regards Jill



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Appendix F Drainage Strategy



PRIVATE DRAINAGE

- PROPOSED SW INSPECTION CHAMBER
- PROPOSED FW INSPECTION CHAMBER
- PROPOSED SW DRAINAGE (TOTAL LENGTH 82m)
- PROPOSED FW DRAINAGE (TOTAL LENGTH 75m)
- PROPOSED SW DRAINAGE (TOTAL LENGTH 8m)
- PROPOSED ACO CHANNEL DRAIN (TOTAL LENGTH 65m)

SECTION 104 ADOPTABLE DRAINAGE

- PROPOSED SW SEWER AND MANHOLE (TOTAL LENGTH 18m)
- PROPOSED FW SEWER AND MANHOLE (TOTAL LENGTH 6.5m)

- MANHOLES, SEWERS ETC. AND ANY OTHER PART OF THE WORKS INTENDED FOR ADOPTION UNDER A SECTION 104 AGREEMENT OR GULLIES ETC. INTENDED FOR ADOPTION AS HIGHWAY DRAINAGE ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE W.A.A SPECIFICATION "SEWERS FOR ADOPTION" 6TH EDITION, AND TO ANY REQUIREMENTS OF THE ADOPTING AUTHORITY AND THE LOCAL COUNCIL.
- UNADOPTED FW AND SW DRAINAGE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE BUILDING REGULATIONS, BS. 8301 AND RELEVANT AGREEMENT CERTIFICATES.
- ALL PRIVATE DRAINAGE TO BE 100MMØ UNLESS INDICATED OTHERWISE. ALL CONNECTIONS FROM PRIVATE TO ADOPTABLE MANHOLES/SEWERS TO BE 150MMØ(MIN).
- ALL PRIVATE DRAINAGE TO HAVE A MINIMUM GRADIENT OF 1 IN 80.
- PRIVATE DRAINAGE WITH LESS THAN 0.9M OF COVER IN DRIVES AND CAR PARKING AREAS TO HAVE MINIMUM 150MM CONCRETE BED AND SURROUND.
- PRIVATE DRAINS ARE TO BE CONSTRUCTED USING FLEXIBLY-JOINTED VITRIFIED CLAY PIPES TO BS. 65 "SUPER STRENGTH" SPECIFICATION AND BS EN 295 (E.G. HEPWORTH SUPERSLEEVE OR SIMILAR) OR UPVC BUILDING DRAINAGE SYSTEM PIPE WORK TO EN 1401-1, BEDDED AND BACK FILLED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS AND THE SPECIFICATIONS LISTED IN NOTE 2.
- BACKFILLING OF DRAIN TRENCHES ADJACENT TO DWELLINGS OR OTHER STRUCTURES TO BE IN ACCORDANCE WITH BS. 8301-FIG.9.
- ACCESS FITTINGS AND INSPECTION CHAMBERS LESS THAN 1M DEEP ARE TO BE CLAYWARE OR PRE-FORMED POLYPROPYLENE AS APPROPRIATE TO THE DEPTH AND NUMBER OF CONNECTIONS. CHAMBERS GREATER THAN 1.2M DEEP ARE TO BE OF PRE-CAST CONCRETE CONSTRUCTION WITH 150MM IN-SITU CONCRETE SURROUND, OR POLYPROPYLENE REDUCED ACCESS SYSTEM. INSPECTION CHAMBER SIZES ARE TO BE IN ACCORDANCE WITH TABLE 8 OF BS.8301.
- COVER LEVELS INDICATED ON THE DRAWING ARE NOMINAL AND MAY BE ADJUSTED TO SUIT FINISHED GROUND LEVELS AS NECESSARY.
- RAINWATER DOWN PIPES TO BE CONNECTED DIRECT TO DRAIN USING AN APPROPRIATE ADAPTER AND REMOVABLE SECTION OF DOWN PIPE TO PERMIT RODDING ACCESS.
- WHERE DRAINS PASS THROUGH FOUNDATIONS OR OTHER RIGID STRUCTURES, A LINTEL OR SLEEVE IS TO BE USED AND PROVISION FOR FLEXIBILITY IS TO BE MADE WITH "ROCKER PIPES".
- THE POSITIONS OF SVPS, STUB-STACKS, W.C. OUTLETS ETC. AND RAINWATER DOWN PIPES ARE TO BE ACCURATELY LOCATED FROM THE HOUSE-TYPE WORKING DRAWINGS.
- DRAINS WITHIN AREAS OF "MADE GROUND" TO BE CONSTRUCTED BY FIRST MAKING UP THE AREA TO APPROX FINISHED LEVEL AND THEN EXCAVATING THROUGH THE FILL MATERIAL INTO UNDISTURBED GROUND. THE DRAIN TRENCH IS THEN TO BE BACK FILLED TO FORMATION LEVEL USING SUITABLE GRANULAR FILL MATERIAL WELL-COMPACTED IN LAYERS NOT EXCEEDING 225MM.
- FOR ALL DETAILS OF FENCES WALLS AND ENCLOSURES REFER TO ARCHITECT FOR DETAILS.

P02	NEW DISCHARGE RATE	PC	AH	MD	28.02.23
P01	FIRST ISSUE	PC	AH	MD	28.02.23
REV	DESCRIPTION	DRN	CHK	APP	DATE

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Architect/Client/Contractor

greatplaces
HOUSING GROUP

Project

LONGHURST ROAD

Drawing Title

**OUTLINE DRAINAGE
PLAN - GREENFIELD**

Drawing Status

PRELIMINARY

Name	Date	Status Code
Drawn	P. CLARK	20.02.2023
Designed	P. CLARK	20.02.2023
Eng Chk	A. HALL	20.02.2023
Approved	M. DAVIES	20.02.2023

Drawing No.

106240 - PEL-HDG-01 - DR - D - 0001