Oakley Gardens, 188 Wilmslow Road

Flood Risk Assessment and Outline Drainage Strategy

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EXECUTIVE SUMMARY

Scope and Background

This Flood Risk Assessment (FRA) and Outline Drainage Strategy has been undertaken by LKC to support a planning application for the redevelopment of Oakley Gardens, 188 Wilmslow Road involving the partial demolition and refurbishment of existing buildings and new build development to provide 53 residential dwellings (Use Class C3), along with associated hard and soft landscaping, access and associated works.

LKC has prepared this FRA in line with the NPPF and Technical Guidance where appropriate.

In considering the proposals the following key principles have therefore been applied:

- Identification of flood risks.
- Protection of users of the new development.
- No increased flood risk to third parties.

Flood Risk

The site is considered to be at a negligible to low risk of flooding from all sources and no site specific flood risk mitigation is considered to be required.

Drainage Strategy

To ensure there is no increase in downstream flood risk as a result of the proposed development it is proposed to restrict surface water runoff to the existing QBAR runoff rate during all events up to and including the 1 in 100 year plus 45% climate change event. It is proposed to provide attenuation for Catchments 1 and 2 in the form of underground geocellular storage crates. Surface water runoff will discharge to the public combined sewer network subject to agreement with UU and the LLFA.

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1. Introduction

1.1 Background

LK Consult Ltd (LKC) were commissioned by Greyslow Limited to carry out a Flood Risk Assessment (FRA) and Outline Drainage Strategy for Oakley Gardens, 188 Wilmslow Road, Manchester, M14 6LJ The report has been undertaken in support of a planning application for the partial demolition and refurbishment of existing buildings and new build development to provide 53 residential dwellings (Use Class C3), along with associated hard and soft landscaping, access and associated works.

The report will address the vulnerability to flooding from all possible sources and will also consider the impact of the development on surface water runoff accounting for climate change and the potential to increase flood risk elsewhere. The Outline Drainage Strategy in Section 5 will provide an overview of the SuDS techniques which could be considered on the site. The issues of actual flood risk are discussed in Section 4.

Government policy with respect to development in flood risk areas is contained within the Ministry of Housing Communities and Local Government National Planning Policy Framework[i] (NPPF) and accompanying Planning Practice Guidance[ii] (PPG). The guidance on Climate Change allowances issued by the Environment Agency (EA) has also been considered.

LKC has prepared this FRA in line with the NPPF and the PPG where appropriate. The level of detail entered into any flood risk assessment is dependent upon the scale and potential impact of the proposed development, and the vulnerability classification of the proposed land-use.

1.2 Site Details

A summary of the general site details is presented in Table 1-1. Figure 1 indicates the site location.

Location	188 Wilmslow Road, Fallowfield, Manchester, M14 6LJ Centred at approximate National Grid Reference 385520, 394309
Area	Approximately 0.83 hectares (ha).
Current Site Use	Site The site comprises an existing office building with associated car parking in the western and southeastern areas of the site. An existing historic villa, which has been incorporated into the office building, is located in the central area of the site. A grassed courtyard is located to the rear of the office building with vegetation also surrounding the eastern car parking area. Access to the site is provided to the south via Langley Road with an additional access point located in the northeastern corner via Wilmslow Road. Surrounding Area/ Boundary Treatment The land use surrounding the site is described below: • The site is bound to the north and west by Platt Fields Park; • The site is bound to the east by Wilmslow Road beyond which lies the University of Manchester Fallowfield Campus; • The site is bounded to the south by Langley Road beyond which lies a residential neighbourhood
Proposed Development	The proposed development comprises the partial demolition and refurbishment of existing buildings and new building development to provide 53 residential dwellings (Use Class C3), along with associated hard and soft landscaping, access and associated works. The existing historic villa, which is designated as a local heritage asset, will be retained and converted to provide residential apartments as part of the proposed development. Vehicular access to the site will continue to be provided via Langley Road. Additional pedestrian access to the site will be provided via the existing access from Wilmslow Road in the northeastern corner of the site. Proposed development plans are included as Appendix A.

Table 1-1: Summary of site details.

2. Site Setting

2.1 Vulnerability

As an initial phase in identifying whether a site is potentially at risk of flooding, LKC has consulted the EA's Flood Map for Planning. This mapping is based on a combination of local flood model outputs, recorded flood outlines and national flood model information to identify areas that are at risk of fluvial and/or tidal flooding for strategic planning purposes.

The Flood Zones divide the floodplain into three categories of flood risk, and do not take flood defences into account. The PPG (Table 1: Flood Zones, Paragraph 78) defines the Flood Zones as:

- Flood Zone 1 – Very Low Risk, with annual probability of flooding from rivers and the sea of less than 0.1% (1 in 1000).
- Flood Zone 2 – Low Risk, with annual probability of flooding of 0.1 to 1.0% from rivers and 0.1 to 0.5% from the sea.
- Flood Zone 3 – Medium to High risk of flooding with an annual probability of flooding of 1.0% or greater from rivers, and 0.5% or greater from the sea.

The Flood Zone Mapping indicates the site as being within Flood Zone 1.

The proposed development is for a residential end use which is classified as 'More Vulnerable' development within Annex 3 of the NPPF.

2.2 The Sequential and Exception Tests

The Sequential Test aims to steer new development to areas at the lowest risk of flooding from all sources taking into account the impacts of climate change. The NPPF identifies that the Sequential Test should be applied to 'Major' and 'Non Major' development proposed in areas at risk of flooding with paragraphs 175, 176 and 189 setting out exemptions from the Test.

Paragraph 175 of the NPPF states that the Sequential Test should be used in areas known to be at risk now or in the future from any form of flooding, except in situations where a site specific flood risk assessment demonstrates that no built development within the site boundary, including access or escape routes, land raising or other potentially vulnerable elements, would be located on an area that would be located in an area that would be at risk of flooding from any source; both now and in the future.

Paragraph 27 of the updated Flood Risk and Coastal Change Planning Practice Guidance (published on 17th September 2025 states "*in applying paragraph 175 a proportionate approach should be taken. Where a site specific flood risk assessment demonstrates clearly that the proposed layout, design and mitigation measures would ensure that occupiers and users would remain safe from current and future surface water flood risk for the lifetime of the development (therefore addressing the risks identified e.g. by Environment Agency flood risk mapping), without increasing flood risk elsewhere, then the Sequential Test need not be applied.*"

This FRA demonstrates that the site has a negligible to low risk of flooding from all sources therefore it is considered that the site and occupants will be safe from flooding. Moreover, the provision of a surface water drainage system that restricts surface water runoff to the existing greenfield runoff rate, as per local policy requirements, will ensure there is no increase in off site flood risk as a result of the proposed development. Based on the above, application of the Sequential Test is not considered to be required.

Table 2 of the PPG identifies that More Vulnerable development is considered acceptable within Flood Zone 1 without the requirement to apply the Exception Test.

2.3 Environmental Setting

LKC has undertaken a review of public domain information including British Geological Survey data, Environment Agency data, historical mapping and aerial photography to provide a summary of the environmental setting of the site. This is summarised in Table 2-1 below.

Summary of the Environmental Setting			
Geology	Superficial		Glacial Till
	Bedrock		Chester Formation which is described as comprising sandstone.
	BGS Boreholes		A review of BGS borehole records indicates there are no boreholes within or in the immediate vicinity of the site. The nearest borehole (BGS ref. SJ89SE9) is located approximately 115 north east of the site at the junction between Wilmslow Road and Old Hall Lane. The borehole is located within the same superficial and bedrock strata and encountered: • Made Ground to 0.91m; • Plastic clay to 3.96m; • Hard clay to 4.88m; • Hard red sand to 6.40m; • Hard light sand to 9.14m; and • Loamy red sand to 13.11m.
	Defra Soilscape Mapping		Soilscape 17: Slowly permeable seasonally wet acid loamy and clayey soils
Hydrogeology	Aquifer Designation	Superficial	Secondary Undifferentiated Aquifer.
		Bedrock	Principal Aquifer.
	Source Protection Zone (SPZ)		Total Catchment (Zone 3).
Hydrology	All adjacent and internal surface water		A review of Ordnance Survey mapping indicates the nearest watercourse is Nico Ditch approximately 70m north of the site. Nico Ditch is classified as an Ordinary Watercourse and flows in a westerly direction within the vicinity of the site. In addition to the above, Gore Brook is located approximately 370m northeast of the site at its nearest point. Gore Brook is an EA defined 'Main River' and flows in a generally south westerly direction from its source at Gorton Lower Reservoir to its confluence with Chorlton Brook. Gore Brook passes through a series of culverted sections before discharging into Chorlton Brook. A boating lake is present in Platt Fields Park to the wet of the site. There are no canals or other artificial waterbodies within the vicinity of the site.

Table 2-1: Summary of the Environmental Setting.

2.4 Site and Access Levels

A Topographic Survey of the site was undertaken by JPL Surveying Limited (drawing number S25-0797-1-1) in September 2025 and is included at Appendix B. Topographic levels within the site are summarised below:

- The site slopes in a generally westerly direction with the highest point of the site recorded as approximately 44m AOD in the southeastern corner and the lowest point of the site recorded as 41.048m AOD in the northwestern corner.
- Ground levels in the eastern area of the site range between approximately 44m AOD in the southeastern to approximately 43m AOD in the northeastern corner;
- Ground levels in the western area of the site are shown to range between 41.717m AOD close to the site entrance via Langley Road to 41.048m AOD in the northwestern corner.
- Floor levels within the existing villa are shown to be significantly raised above external ground levels.
- Levels along Langley Road are shown to slope in an easterly direction from a level of 43.933m AOD adjacent to the southeastern corner of the site to a level of 41.514m AOD adjacent to the southwestern corner. Existing entrances into the site via Langley Road are shown to slope up from the road.
- Levels along Wilmslow Road to the east of the site are shown to slope in a northerly direction from a level of 43.945m AOD adjacent to the southeastern corner of the site to a level of 43.008m AOD adjacent to the northeastern corner.

2.5 Ground Conditions

An intrusive ground investigation has previously been undertaken by Tier Consult (report ref. TE1279GIR1.2). The ground investigation was undertaken to establish ground conditions within the site as part of a previous planning application for proposed student accommodation (planning ref. 129020/FO/2020) that was ultimately refused at appeal.

The intrusive ground investigation comprised the excavation of 1no. cable percussive borehole, 9no. window sample boreholes and 11no. hand dug pits to establish ground conditions within the site. The investigation encountered Made Ground from ground level to between 0.30m below ground level (m bgl) and 2.00m bgl. Made Ground was identified to be underlain by Glacial Till to depths of between 2.80m bgl and 4.70m bgl. This was further underlain by bedrock deposits from the Chester Formation which were proven to a maximum depth of 7.17m bgl.

No groundwater was encountered during the intrusive investigation. Groundwater monitoring was undertaken on six occasions between 13th February 2020 and 13th May 2020. Groundwater levels were reported at depths between 0.97m bgl and 3.73m bgl indicating a locally variable discontinuous perched groundwater body.

3. Consultation

Information from all relevant consultees is summarised in Table 3-1 below.

Source	Details	
Environment Agency (EA)	Records of Flooding	A review of EA historic flood records indicate the site has not been impacted by any historic, recorded flood events.
	Records of Flood Warning Service	The site is not located within a Flood Warning or Flood Alert area.
	Surface Water Flooding	A review of the EA Risk of Flooding from Surface Water dataset indicates the site has a predominantly very low (less than 0.1% chance of a flood each year) chance of surface water flooding during the present day and future climate change (2050s scenario) events. An area of low chance (between a 0.1% and 1% chance of a flood each year) surface water flooding is shown to occur to the east of the existing villa building during both the present day and future climate change scenarios.
	Flooding from reservoirs	The site is located within an area that is shown to remain free from flooding in the event of reservoir failure.
Manchester City Council (MCC)	Consultation has been undertaken with Manchester City Council (MCC) in its role as Lead Local Flood Authority to obtain local flood risk information and to agree in principle the proposed surface water drainage strategy. A response has not been received from MCC at the time of writing.	

United Utilities (UU)	Sewer plans	Consultation has been undertaken with UU to obtain public sewer records. Public sewer records provided by UU (included as Appendix C) indicate the following sewers within the vicinity of the site:
		• A 225mm diameter public combined sewer is shown to be located beneath Langley Road. The sewer flows towards a further 225mm diameter combined sewer flowing in a southerly direction beneath Riga Street. Invert level information provided by UU indicates the following invert levels along the sewer beneath Langley Road:
		  ○ 39.12m AOD at manhole ref. 4300 located adjacent to the southwestern corner of the site;
		  ○ 41.71m AOD at manhole ref 5202 located adjacent to the southeastern corner of the site;
		  ○ 39.42m AOD at manhole 5200 located in the junction between Langley Road and Riga Street.
		• A 1900mm diameter public combined sewer is shown to be located beneath Wilmslow Road. The sewer is shown to flow in a northerly direction within the vicinity of the site;
		• A 500mm diameter public combined sewer is also shown to be located beneath Wilmslow Road, flowing in a northerly direction.

	Pre-development enquiry	Consultation has been undertaken with UU in the form of a Pre-Development Enquiry to confirm acceptable foul and surface water pass forward flow rates to the public sewer network. Within their response (included as Appendix D) UU have identified the following: • There is no modelled sewer flood risk within the vicinity of the site based on a 1 in 100 year storm event; • Foul effluent generated by the proposed development will be allowed to drain into the public combined sewer network at an unrestricted rate. UU's preferred point of connection is the 225mm public combined sewer beneath Langley Road; • Surface water runoff generated by the proposed development will be allowed to discharge to the 225mm diameter public combined sewer beneath Langley Road. UU have requested that any agreed discharge rate does not exceed 5l/s.

Source	Details
Strategic Flood Risk Assessment (SFRA)	A review of the Greater Manchester Combined Authority (GMCA) SFRA[iii] (published in March 2019) has been undertaken and key points are summarised below. • The groundwater flooding maps show the site is not located in an area impacted by groundwater flooding. • Risk of sewer flooding was identified in the wider area during rainfall events within the Greater Manchester 2010 SFRA[iv]. There are historic records of surface and sewer during 1958, 1947, and 1911, however no site-specific information is available. Based on the date of the publication, the surface water and fluvial mapping and data contained within the FRA has been superseded by the latest EA flood mapping (published in 2025).

Table 3-1: Summary consultee information.

4. Assessment of Flood Risk

4.1 Sources of Flooding

The risk of flooding from the following flood sources has been considered:

Fluvial Flooding

A review of the EA's Flood Map for Planning indicates the site is located within Flood Zone 1 during both the present day and future climate change (2070 to 2125) scenarios.

Based on the above, the overall risk of fluvial flooding is considered to be low.

Therefore, the overall risk of fluvial flooding is considered to be low.

Tidal Flooding

The study area is remote from the sea and tidally influenced water bodies. The overall risk of tidal flooding is therefore considered to be negligible.

Surface Water Flooding

A review of the EA Risk of Flooding from Surface Water dataset indicates that the majority of the site has a low very low chance of surface water flooding during both the present day (Figure 2) and future climate change (2050s) scenario (Figure 3). An area of low chance surface water flooding is shown to occur to the east of the existing villa. The surface water flooding mechanism appears to comprise the ponding of surface water within an existing topographic low point. There are no surface water overland flow paths originating within, or flowing through, the site.

A review of corresponding depth mapping indicates there is a low chance of surface water flooding occurring up to a maximum depth of 0.2m during the present day (Figure 4) and future climate change scenarios (Figure 5)

Based on the above, the overall risk of surface water flooding is considered to be low.

Groundwater Flooding

A previous intrusive investigation undertaken by Tier Consult identified that the site is underlain by Made Ground which is further underlain by superficial deposits of Glacial Till and bedrock deposits from the Chester Formation. No groundwater was encountered during the site investigation. Subsequent groundwater monitoring recorded groundwater levels at depths between 0.97m bgl and 3.73m bgl indicating a locally variable discontinuous perched groundwater body.

Groundwater mapping contained within the SFRA indicates the site is located in an area that is not impacted by groundwater flooding.

Proposed development plans indicate a basement level within the existing office building. It is recommended that the basement is suitably tanked and waterproofed to reduce the potential for the ingress of groundwater.

Based on the above, the overall risk of groundwater flooding is considered to be low.

Sewer Flooding

The locations of public sewers within and in the vicinity of the site are described in Table 3-1.

Consultation undertaken with UU indicates there is no modelled sewer flood risk within the vicinity of the site based on a 1 in 100 year storm event. In the event of sewer surcharging, it is anticipated that water would be contained within the road network and would flow away from the site based on existing ground levels.

Based on the above, the overall risk of sewer flooding is considered to be low.

Flooding from Artificial Sources

A review of the EA Long Term Reservoir Flood Map indicates the site is located within an area that will remain free from flooding in the event of reservoir failure.

There are no canals or other artificial waterbodies within the vicinity of the site.

Based on the above, the overall risk of flooding from artificial sources is considered to be low.

4.2 Summary of Flood Risk

A summary of the risk of flooding from all sources is provided in Table 4-1.

Source of Flooding	Risk Assessment Level
Fluvial	Low
Tidal	Negligible
Surface Water	Low
Groundwater	Low
Sewers	Low
Artificial Sources	Low

Table 4-1: Summary of Existing Risk Level.

5. Mitigation Measures

5.1 Site Levels and Development Level

The site is considered to be at a negligible to low risk of flooding from all sources; therefore, no site specific flood risk mitigation is considered to be necessary.

A review of proposed development plans (included as Appendix A) indicates that finished floor levels of proposed dwellings will be raised above external ground levels, thereby further reducing the potential for the ingress of water.

5.2 Safe Access and Egress

Vehicular access to the site will be provided via Langley Road to the south with additional pedestrian access via Wilmslow Road to the east. Langley Road and Wilmslow Road within the vicinity of the site are shown to be located within Flood Zone 1 with a very low chance of surface water flooding.

5.3 Residual Risk

It is impossible to completely guard against flooding since extreme events greater than the design standard event are always possible. However, given that the site is located within Flood Zone 1 and at a low risk of surface water flooding during both the present day and future climate change scenarios the residual risk of flooding is considered to be low. Moreover, finished floor levels of proposed dwellings will be raised above external ground levels thereby further reducing the potential for the ingress of water. Overland flow routes should be considered in case of drainage failure and the extreme events.

6. Surface Water Management

6.1 Overview

The NPPF recognises that flood risk and other environmental damage can be managed by minimising changes in the volume and rate of surface run-off from development sites through the use of Sustainable Drainage Systems (SuDS), this being complementary to the control of development within the floodplain.

The site is located within the administrative boundary of MCC. In March 2024, the Council adopted the Places for Everyone Joint Development Plan which sets out the framework for sustainable growth across Greater Manchester. Policy JP-S4 'Flood Risk and Water Environment' sets out the Plan's approach to flood risk and water management. Policy JP-S4 states that proposed development should achieve greenfield runoff rates unless it is demonstrated to be impracticable.

The anticipated design life of residential buildings is in excess of 100 years. The EA climate change guidance for peak rainfall intensity (published in May 2022) identifies that development with a lifespan beyond 2100 should consider the upper end climate change allowance. According to the EA Peak Rainfall Allowances map, the site is located within the Upper Mersey Management Catchment in which the upper end allowance equates to a 45% increase in peak rainfall intensity.

SuDS will not alleviate flooding in an area prone to flooding; however, properly designed SuDS have the potential to prevent the surface water runoff from new development worsening the flood risk. The effective disposal of surface water from any new development is a material planning consideration in determining if the proposals for the development and use of land are acceptable.

The accepted principles are that surface water arising from a developed area should, as far as practicable, be managed in a sustainable manner to mimic the surface water flows arising from the site prior to the proposed development, while reducing the flood risk to the site itself and elsewhere, taking climate change into account.

The Planning Practice guidance identifies that surface water runoff should be disposed of in the following order of preference:

1. Into the ground (infiltration);
2. To a surface water body;
3. To a surface water sewer, highway drain, or another drainage system; or
4. To a combined sewer.

Suitability of different SuDS will be governed by prevailing site conditions, such as the type and scale of development, topography, ground conditions (soil permeability, ground stability, depth to water table), local hydrogeology and risk of groundwater contamination (presence of sensitive aquifers and source protection zones) etc.

6.2 Sustainable Drainage Hierarchy

6.2.1 Infiltration

The previous intrusive investigation undertaken by Tier Consult identified that the site is underlain by Made Ground which is further underlain by superficial deposits of Glacial Till and bedrock deposits from the Chester Formation. No groundwater was encountered during the site investigation, however, Subsequent groundwater monitoring recorded groundwater levels at depths between 0.97m bgl and 3.73m bgl indicating a locally variable discontinuous perched groundwater body.

Based on the nature of the underlying ground conditions, the use of infiltration is not considered to be feasible. Infiltration testing in accordance with BRE365 Digest guidance may be required at the detailed design stage to confirm the potential for the use of infiltration. For the purposes of this

assessment, a connection to an alternative receptor has been considered to demonstrate that a feasible drainage solution can be achieved in lieu of infiltration.

6.2.2 Watercourses

The nearest watercourse is Nico Ditch located approximately 65m north of the site. A connection to this watercourse would require significant engineering works across third party land which is not considered to be feasible. Therefore, a connection to this watercourse has not been considered further.

6.2.3 To a surface water sewer, highway drain or another drainage system

Public sewer records provided by UU indicate there are no surface water sewers within the vicinity of the site; therefore, discharge to the surface water sewer network has not been considered further.

6.2.4 To a combined sewer

Public sewer records provided by UU indicate the presence of public combined sewers located beneath Langley Road and Wilmslow Road.

Consultation undertaken with UU in the form of a pre-development enquiry has identified that surface water runoff generated by the proposed development will be allowed to discharge to the 225mm diameter combined sewer located beneath Langley Road. It is therefore proposed to provide a connection to the combined sewer, subject to agreement with the LLFA.

Based on cover and invert level information provided by UU it is anticipated that a gravity connection to the public sewer network can be achieved, however, it is recommended that levels of the existing drainage network are confirmed via an appropriate survey.

6.3 Surface Water Runoff Rates

6.3.1 Greenfield runoff rates

Greenfield runoff rates have been calculated using the FEH Statistical Method (2025) based on a contributing catchment area of 0.534ha. Greenfield runoff rate calculations are included as Appendix E and are summarised in Table 6-1 below:

Return period	**Greenfield Runoff Rate (l/s)**
QBAR	4.1
1 in 1 year	3.6
1 in 30 year	7.0
1 in 100 year	8.6

Table 6-1: Summary of the greenfield runoff rates.

Based on the above, it is proposed to restrict surface water runoff rates during all events up to and including the 1 in 100 year plus 45% climate change scenario to a rate of 4.1l/s which represents the greenfield QBAR rate.

6.4 Surface Water Attenuation Requirements

For the purposes of this assessment, the site has been separated into two catchment areas (Catchment 1 and Catchment 2). The surface water runoff rate will be prorated based on the overall catchment areas with attenuation provided accordingly. At this stage, Quick Storage Estimates have been undertaken to determine the attenuation required within each catchment area including consideration of a 10% allowance for urban creep based on the residential nature of the proposed development. A summary of the catchment areas and proposed discharge rates and attenuation volumes is provided in Table 6-2 below.

Catchment	Area (ha)	Proposed Discharge Rate (l/s)	Contributing catchment including 10% urban creep (ha)	Attenuation Volume QSE (m^3)
1	0.109	1	0.12	86 - 130
2	0.425	3.1	0.47	371 - 530

Table 6-2: Summary of the greenfield runoff rates.

6.5 Consideration of SuDS

The NPPF requires applications that could affect drainage on or around a site to incorporate Sustainable Drainage Systems to control surface water runoff. An options appraisal of potential SuDS features commensurate to the scale and nature of the proposed development has been undertaken to determine potential SuDS features that could be utilised to provide the required surface water attenuation volume. Table 6-3 provides a summary of the SuDS options appraisal with consideration of CIRIA C753 (The SUDS Manual)[v] for the proposed development.

SuDS Option	Description	Benefits	Comments	Appropriate for Development
Infiltration				
Soakaways	Soakaways provide stormwater attenuation, stormwater treatment and groundwater recharge. Runoff is treated by physical filtration to remove solids, by absorption into the soil and removal and by biochemical reactions involving micro-organisms growing on the soil.	Water quantity Water quality	Based on the nature of the underlying geology and given the presence of shallow, perched groundwater, the use of soakaways is not considered feasible.	x
Infiltration basin	Infiltration basins reduce the volume of runoff from a drainage area, can be very effective at pollutant removal via filtering through the soils, contributes to groundwater recharge and baseflow augmentation. Runoff is treated by physical filtration to remove solids, by absorption into the soil and removal and by biochemical reactions involving micro-organisms growing on the soil.	Water quantity Water quality Biodiversity Amenity	Based on the nature of the underlying geology and given the presence of shallow, perched groundwater, the use of infiltration basins is not considered feasible. Moreover, there is limited space available within the site to provide open storage features.	x
Infiltration trench	An Infiltration trench can create temporary subsurface storage of stormwater runoff, thereby enhancing the natural capacity of the ground to store and drain water. Infiltration trenches allow water to dissipate into the surrounding soils from the bottom and sides of the trench where runoff is treated by	Water quantity Water quality Amenity	Based on the nature of the underlying geology and given the presence of shallow, perched groundwater, the use of infiltration trenches is not considered feasible.	x

SuDS Option	Description	Benefits	Comments	Appropriate for Development
	physical filtration, adsorption and biochemical reactions involving micro-organisms growing in the soil. Infiltration trenches are easy to integrate into a site. They are ideal for use around playing fields, recreational areas, or public open space.			
Rain gardens	Attractive features that can help to improve open space. Can be planned as landscaping features. Flexible layout to fit into landscape. Runoff can be treated by physical filtration to remove solids, by absorption and removal by biochemical reactions involving micro-organisms growing on the soil. They can reduce rate of run off and provide some volume reduction.	Amenity Biodiversity Water quality Water quantity	Rain gardens are relatively small depressions in the ground that provide limited attenuation benefits. Rain gardens could be provided within communal landscaped areas to contribute additional attenuation and localised amenity and biodiversity benefits. Further consideration of the potential inclusion of rain gardens will be required at the detailed design stage.	✓
Filtration				
Filter drain / trench	Filter trenches create temporary subsurface storage of stormwater runoff and provide stormwater treatment. These trenches can be used to filter and convey stormwater to downstream SuDS components.	Water quantity Water quality	There is limited space available in which to provide filter drains.	X
Filter strip	A filter strip offers no storage and is used solely to remove pollutants from surface water. The vegetation traps organic and mineral particles that are	Water quality Amenity Biodiversity	There is limited space available in which to provide filter strips.	

SuDS Option	Description	Benefits	Comments	Appropriate for Development
	then incorporated into the soil, while the vegetation takes up any nutrients. A filter strip features medium amenity potential. Local wild grass and flower species can be introduced for visual interest and to provide a wildlife habitat.			x
Retention & Detention				
Detention basin	Detention basins provide flow control through attenuation of stormwater runoff for a wide range of rainfall events. Basins treat runoff in a variety of ways: settlement of solids in still or slow moving water, adsorption by the soil, biological activity. Basins offer many opportunities for the landscape designer. Basins should not be built on but can be used for sports and recreation. Basins can be part of public open space.	Water quantity Water quality Biodiversity Amenity	There is limited space available in which to provide an open detention basin.	x
Attenuation Ponds	Ponds will attenuate the surface water flow prior to discharging to the public surface water sewers. The storage volume afforded by these features should not include any permanent water in the pond. Ponds treat runoff in a variety of ways: settlement of solids in still water (having plants in the water enhances calm conditions and promotes settlement),	Water quantity Water quality Biodiversity Amenity	There is limited space available in which to provide an open attenuation pond.	x

SuDS Option	Description	Benefits	Comments	Appropriate for Development
	adsorption by aquatic vegetation, biological activity. Permanently wet ponds can be used to store water for reuse and offer excellent opportunities for the provision of wildlife habitats. Ponds can be part of public open space.			
Geo-cellular storage systems	Geo-cellular systems can be used to control and manage rainwater surface water runoff either as a soakaway or as a storage tank. Geo-cellular storage systems provide high storage volume capacity High void ratios (up to 96%). Capable of managing high flow events.	Water quantity	It is proposed to restrict surface water runoff to the existing QBAR greenfield runoff rate. In order to achieve this rate, it is proposed to provide attenuation in the form of under ground geocellular storage crates.	✓
Oversized Pipes	Oversized pipes can reduce rate of run off and provide some volume reduction.	Water quantity	Attenuation will be provided within below ground geocelluar storage crates therefore the use of oversized pipes is not required.	x
Tanks	Storage tanks can be used to control and manage rainwater surface water runoff providing high storage volume capacity. Tanks are capable of managing high flow events.	Water quantity	Attenuation will be provided within below ground geocelluar storage crates therefore the use of an attenuation tank is not required.	x
Swales & Conveyance Channels				
Swales	Swales are effective at removing polluting suspended solids through filtration and sedimentation. The vegetation traps organic and mineral particles that are then	Water quality Biodiversity Amenity Water quantity	There is limited space available in which to provide swales for conveyance purposes.	

SuDS Option	Description	Benefits	Comments	Appropriate for Development
	incorporated into the soil, while the vegetation takes up any nutrients. Swales are often integrated into the surrounding land use. Local wild grass and flower species can be introduced for visual interest and to provide a wildlife habitat. Swales are usually designed as conveyance systems but can also be designed with check dams to increase attenuation and, where applicable, infiltration.			x
Control Structures				
Flow control devices	Flow control devices (e.g. Hydrobrake style flow control systems or similar) and restricted orifices enable the discharge to be restricted to a constant rate from proposed development to control the peak flow. Complex controls can reduce upstream storage requirements.	Water quantity	Surface water runoff generated by the proposed development will discharge to the existing public combined sewer network via a Hydrobrake or similar flow control device, subject to agreement with UU.	✓
Inlets, outlets and controls	Inlets, outlets and other control structures are key elements of well-designed SuDS. Inlet and outlet features allow water to flow into and out of features and also limit the rate at which water flows along and out of the system. There are many different approaches and products available and they can	Water quality Amenity	Surface water runoff will discharge into the proposed geocellular crates via an appropriate collection network. Water will discharge into the existing public combined sewer network via a Hydrobrake or similar flow control device. Detailed design of proposed inlets and outlets will be	✓

SuDS Option	Description	Benefits	Comments	Appropriate for Development
	be easily designed to add interest to the urban landscape. Can provide accurate flow control from one SuDS feature to another.		undertaken at the detailed design stage.	
Source Control				
Green roofs	Green roofs are areas of vegetation installed on the top of buildings and are separated into extensive and intensive roofs depending on substrate depths, planting and maintenance requirements. Green roofs can provide benefits in terms of reducing peak flow rates, particularly for small and medium sized storm events as well as ecological, aesthetic and amenity benefits.	Water quality Water quantity Amenity Biodiversity	Based on the nature of the proposed development, the use of green roofs is not considered to be feasible.	X
Blue roofs	Blue roofs are designed to attenuate and manage stormwater on a flat roof in urban areas where options for ground-based attenuation systems are limited, and in particular, where construction is being carried out within flood sensitive areas.	Water quantity Amenity Biodiversity	Based on the nature of the proposed development, the use of blue roofs is not considered to be feasible.	X
Rainwater harvesting	Rainwater harvesting comprises the collection and storage of rainfall for non-potable uses such as toilet flushing or irrigation. When required, the water is pumped to the point of use, thus displacing what would	Water quantity	Rainwater harvesting could be utilised within the proposed development to provide water for non-potable uses such as toile flushing or irrigation. However, the attenuation	✓

SuDS Option	Description	Benefits	Comments	Appropriate for Development
	otherwise be a demand for mains-water. Rainwater harvesting contributes towards reducing overall demand on the main water supply as well as improving climate resilience.		benefits provided by rainwater harvesting	
Permeable Pavements – with granular and geo-cellular storage systems	Permeable pavements allow inflow of rainwater into underlying sub-base material. Any geo-cellular storage systems would have to be lined with an impermeable membrane to provide storage rather than infiltration for runoff from highways.	Water quality Water quantity	Based on the nature of the underlying geology, permeable paving would only be used a storage only option and it is generally considered more cost effective and maintainable to provide storage within underground geocellular storage crates/attenuation tanks.	X
Other SuDS				
Wetlands	These comprise of shallow ponds and marshy areas, covered almost entirely in aquatic vegetation. Wetlands provide both stormwater attenuation and treatment. Wetlands detain flows for an extended period to allow sediments to settle, and to remove contaminates by facilitating adhesion to vegetation and aerobic decomposition. They also provide significant ecological benefits.	Water quality Water quantity Amenity Biodiversity	There is limited space to provide wetlands within the site.	X

Table 6-3: Consideration of SuDS

6.6 Surface Water Drainage Strategy

It is proposed to restrict surface water runoff generated by the proposed development to a rate of 4.0 l/s, during all events up to and including the 1 in 100 year plus 45% climate change scenario. For the purposes of this assessment, the site has been separated into two catchment areas with attenuation provided within each catchment area to restrict surface water runoff, as shown on the Conceptual Surface Water Drainage Strategy included as Appendix F. Detailed drainage design will be required at the detailed design stage.

6.6.1 Catchment 1

It is proposed to discharge surface water runoff generated within Catchment 1 to a rate of 1l/s during all events up to and including the 1 in 100 year plus 45% climate change event. In order to achieve this restriction, it is proposed to provide attenuation in the form of underground geocellular storage crates. The geocellular crates will measure 90m^2 x 1.2m deep with a 95% porosity and will provide up to 102.6m^3 of attenuation. Causeway Flow hydraulic calculations (included as Appendix G) indicate that the geocellular crates will provide the full balance of attenuation required to ensure there is no flooding during the 1 in 100 year plus 45% climate change event.

Surface water runoff stored within the geocellular crates will discharge at a rate of 1l/s via a Hydrobrake or similar flow control device to public combined sewer network beneath Langley Road subject to agreement with UU and the LLFA.

6.6.2 Catchment 2

It is proposed to discharge surface water runoff generated within Catchment 2 to a rate of 3.1l/s during all events up to and including the 1 in 100 year plus 45% climate change event. In order to achieve this restriction, it is proposed to provide attenuation in the form of underground geocellular storage crates The geocellular crates will measure 360m^2 x 1.2m deep with a 95% porosity and will provide up to 410.4m^3 of attenuation. Causeway Flow hydraulic calculations (included as Appendix G) indicate that the geocellular crates will provide the full balance of attenuation required to ensure there is no flooding during the 1 in 100 year plus 45% climate change event.

Surface water runoff stored within the geocellular crates will discharge at a rate of 3.1l/s via a Hydrobrake or similar flow control device to public combined sewer network beneath Langley Road subject to agreement with UU and the LLFA.

6.7 SuDS Maintenance

Maintenance of proposed SuDS features will be required to ensure these remain operational over the lifetime of the proposed development. An indicative maintenance plan for the proposed SuDS and associated features is provided in Table 6-4 below. The SuDS maintenance and inspections responsibility rests with the owners or could be arranged through appointment of a site management company.

Maintenance Schedule	Required Action	Typical Frequency
Geocellular Storage Crates		
Regular Maintenance	Remove debris from the catchment surface (where it may cause risks to performance).	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter; remove and replace surface infiltration medium, as necessary.	Annually
	Remove sediment from pre-treatment structures and/or internal forebays	Annually or as required.
Remedial Actions	Repair/rehabilitate inlets, outlet and overflows and vents.	As required.

Maintenance Schedule	Required Action	Typical Frequency
Monitoring	Survey inside of tank for sediment build-up and remove if necessary.	Every 5 years or as required.
	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed.	Annually

Table 6-4: Summary of maintenance requirements

6.8 Surface Water Treatment

Surface water runoff generated by the proposed development is proposed to discharge to the public combined sewer network and would therefore be contaminated with foul effluent on entering the combined sewer network. A review of Table 26.2 of the CIRIA SuDS Manual identifies that residential roofs are considered to have a very low pollution hazard level. Individual property driveways and residential car parks are considered to have a low pollution hazard level.

Notwithstanding the above, it is recommended that surface water runoff passes through a SPEL interceptor or similar prior to discharging into the geocellular storage crates. This will ensure that sediments and oil/fuel are removed from surface water prior to discharge to the storage crates thereby reducing potential maintenance requirements.

7. Conclusions

This report has been prepared to support the planning application for the proposed partial demolition and refurbishment of existing buildings and new build development to provide 53 residential dwellings (Use Class C3), along with associated hard and soft landscaping, access and associated work.

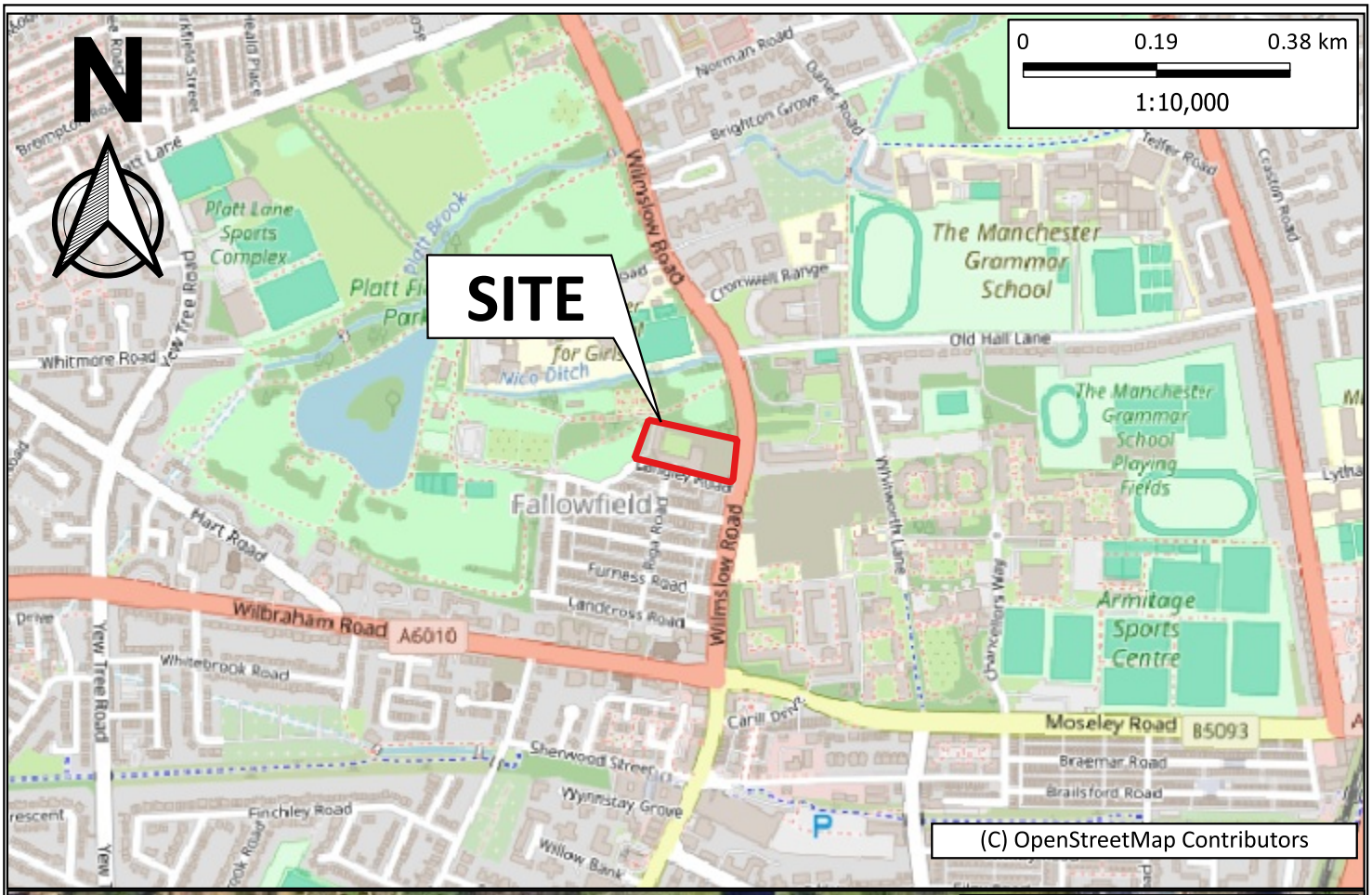
The site is considered to be at a negligible to low risk of flooding from all sources and no site specific flood risk mitigation is considered to be required.

To ensure there is no increase in downstream flood risk as a result of the proposed development it is proposed to restrict surface water runoff to the existing QBAR runoff rate during all events up to and including the 1 in 100 year plus 45% climate change event. It is proposed to provide attenuation for Catchments 1 and 2 in the form of underground geocellular storage crates. Surface water runoff will discharge to the public combined sewer network subject to agreement with UU and the LLFA.

Based on the above, the site is considered to be safe from flooding and will not result in an increase in off site flood risk.

Figures

Figure 1 – Site Location Plan





Client: Greyslow Limited				Title: Site Location & Boundary Plan	LK CONSULT
Site: Oakley Gardens, 188 Wilmslow Road				Scale (see scale bar): 1:10,000 & 1:1250 @ A4	Figure: 1 / Revision: 1
Job No.: FRA251189	Drawn By: AY	Checked By: DP	Drawn: March 2026		

Figure 2 – Present Day EA Surface Water Flood Extents



Client: Greyslow Limited				Title: EA Modelled Surface Water Extent	LK CONSULT
Site: Oakley Gardens, 188 Wilmslow Road				Scale (see scale bar): See scale bar	Figure: 2
Job No.: FRA251189	Drawn By: AY	Checked By: DP	Drawn: March 2026		Revision: 1

Figure 3 – Climate Change EA Surface Water Flood Extents



Client: Greyslow Limited				Title: EA Climate Change SW Flood Extents	LK CONSULT
Site: Oakley Gardens, 188 Wilmslow Road				Scale (see scale bar): See scale bar	Figure: 3
Job No.: FRA251189	Drawn By: AY	Checked By: DP	Drawn: March 2026		Revision: 1

Figure 4 – Baseline Surface Water Flood Depths



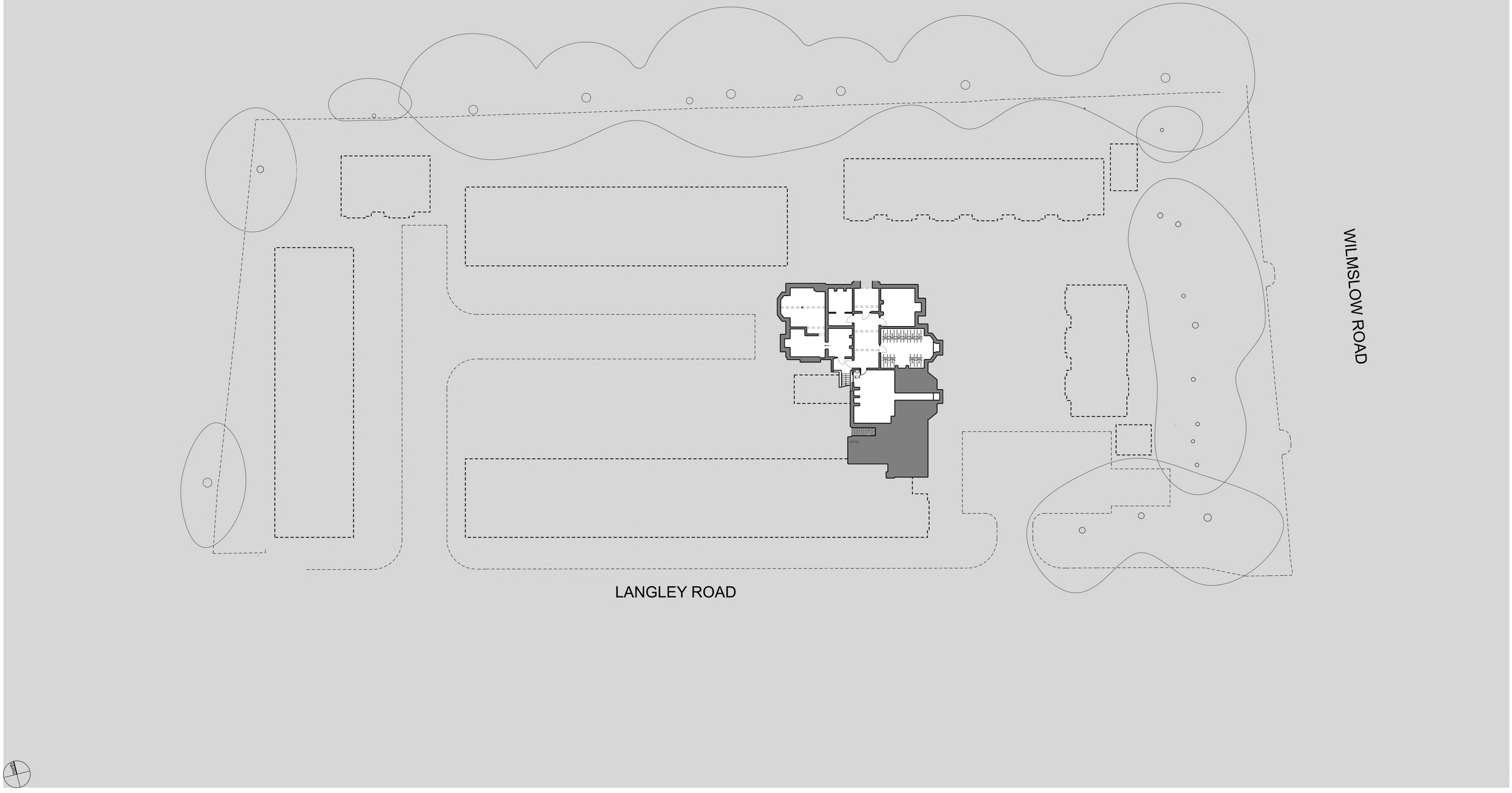
Client: Greyslow Limited				Title: EA Surface Water Flood Extents 0.2m Depth Band		LK CONSULT
Site: Oakley Gardens, 188 Wilmslow Road				Scale (see scale bar): See scale bar	Figure: 4	Revision: 1
Job No.: FRA251189	Drawn By: AY	Checked By: DP	Drawn: March 2026			

Figure 5 – Climate Change Surface Water Flood Depths



Client: Greyslow Limited				Title: EA Modelled Climate Change SW Extent 0.2m Depth Band	LK CONSULT
Site: Oakley Gardens, 188 Wilmslow Road					
Job No.: FRA251189	Drawn By: AY	Checked By: DP	Drawn: March 2026	Scale (see scale bar): See scale bar	Figure: 5 / Revision: 1

Appendix A – Proposed Development Plans



nick moss architects

29 Bow Lane
Manchester
M2 4FW

www.nickmossarchitects.com

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revisions + notes:

	TYPE A	19 No.
	TYPE B	9 No.
	TYPE C	12 No.
	TYPE D	2 No.
	TYPE Z	7 No.
	TYPE Y	4 No.
	TOTAL	**53 No.**

0m 25m 50m

project:
188 WILMSLOW ROAD
job number:
0406
title:
PROPOSED SITE PLAN - BASEMENT FLOOR
scale:
1:500 @ A3 or 1:250 @ A1
issued for:
PLANNING
drawing number: issue:
AL(05)009 P1



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Manchester
M2 4FW

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revisions + notes:

	TYPE A	19 No.
	TYPE B	9 No.
	TYPE C	12 No.
	TYPE D	2 No.
	TYPE Z	7 No.
	TYPE Y	4 No.
	TOTAL	**53 No.**

0m 25m 50m

project:
188 WILMSLOW ROAD
job number:
0406
title:
PROPOSED SITE PLAN - GROUND FLOOR
scale:
1:500 @ A3 or 1:250 @ A1
issued for:
PLANNING
drawing number: issue:
AL(05)010 P1



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revisions + notes:

	TYPE A	19 No.
	TYPE B	9 No.
	TYPE C	12 No.
	TYPE D	2 No.
	TYPE Z	7 No.
	TYPE Y	4 No.
	TOTAL	**53 No.**

0m 25m 50m

project:
188 WILMSLOW ROAD
job number:
0406
title:
PROPOSED SITE PLAN - FIRST FLOOR
scale:
1:500 @ A3
issued for:
PLANNING
drawing number: issue:
AL(05)011 P1

WILMSLOW ROAD

LANGLEY ROAD

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29 Bow Lane
Manchester
M2 4FW

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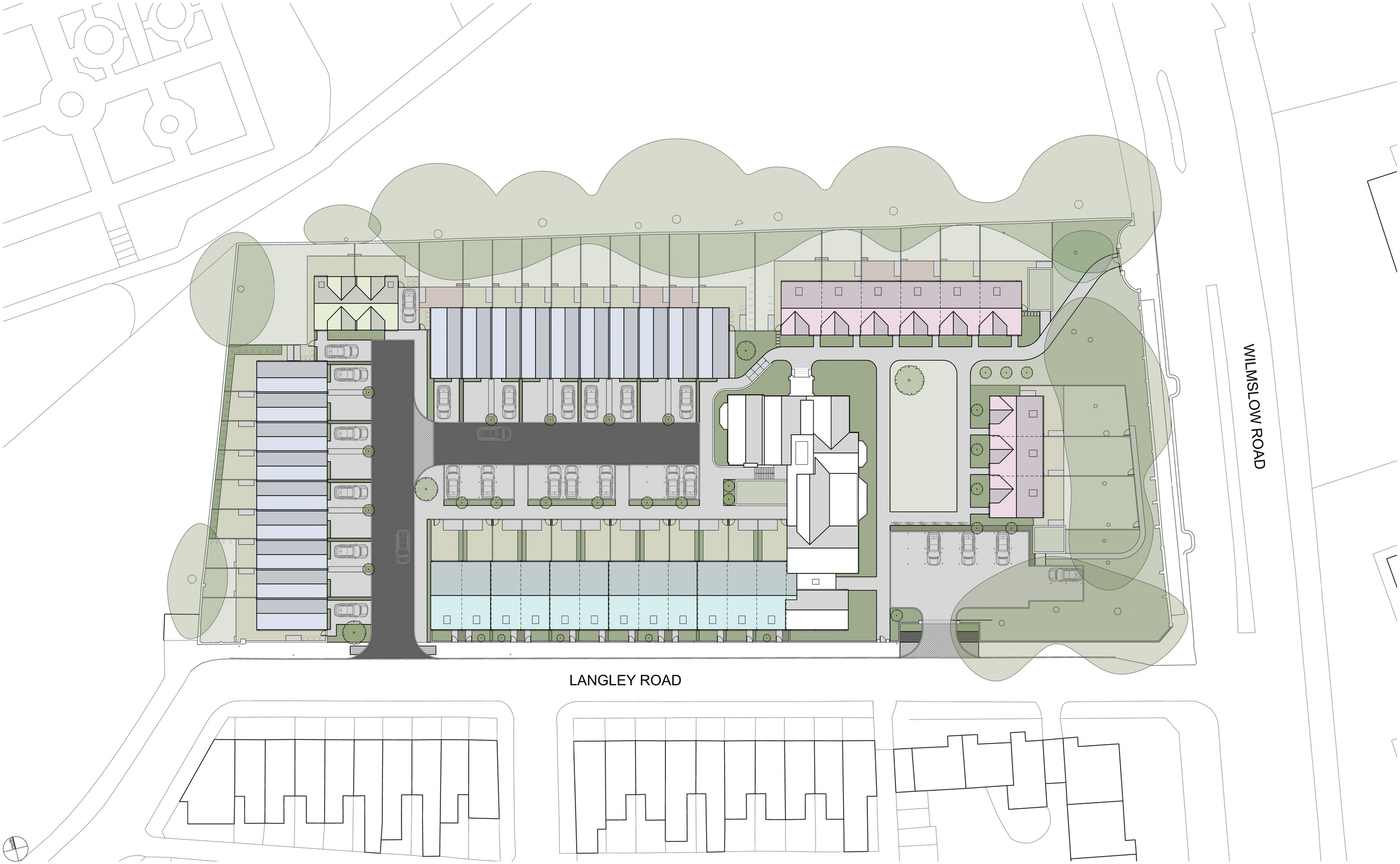
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revisions + notes:

	TYPE A	19 No.
	TYPE B	9 No.
	TYPE C	12 No.
	TYPE D	2 No.
	TYPE Z	7 No.
	TYPE Y	4 No.
	TOTAL	**53 No.**

0m 25m 50m

project:
188 WILMSLOW ROAD
job number:
0406
title:
PROPOSED SITE PLAN - SECOND FLOOR
scale:
1:500 @ A3
issued for:
PLANNING
drawing number: issue:
AL(05)012 P1



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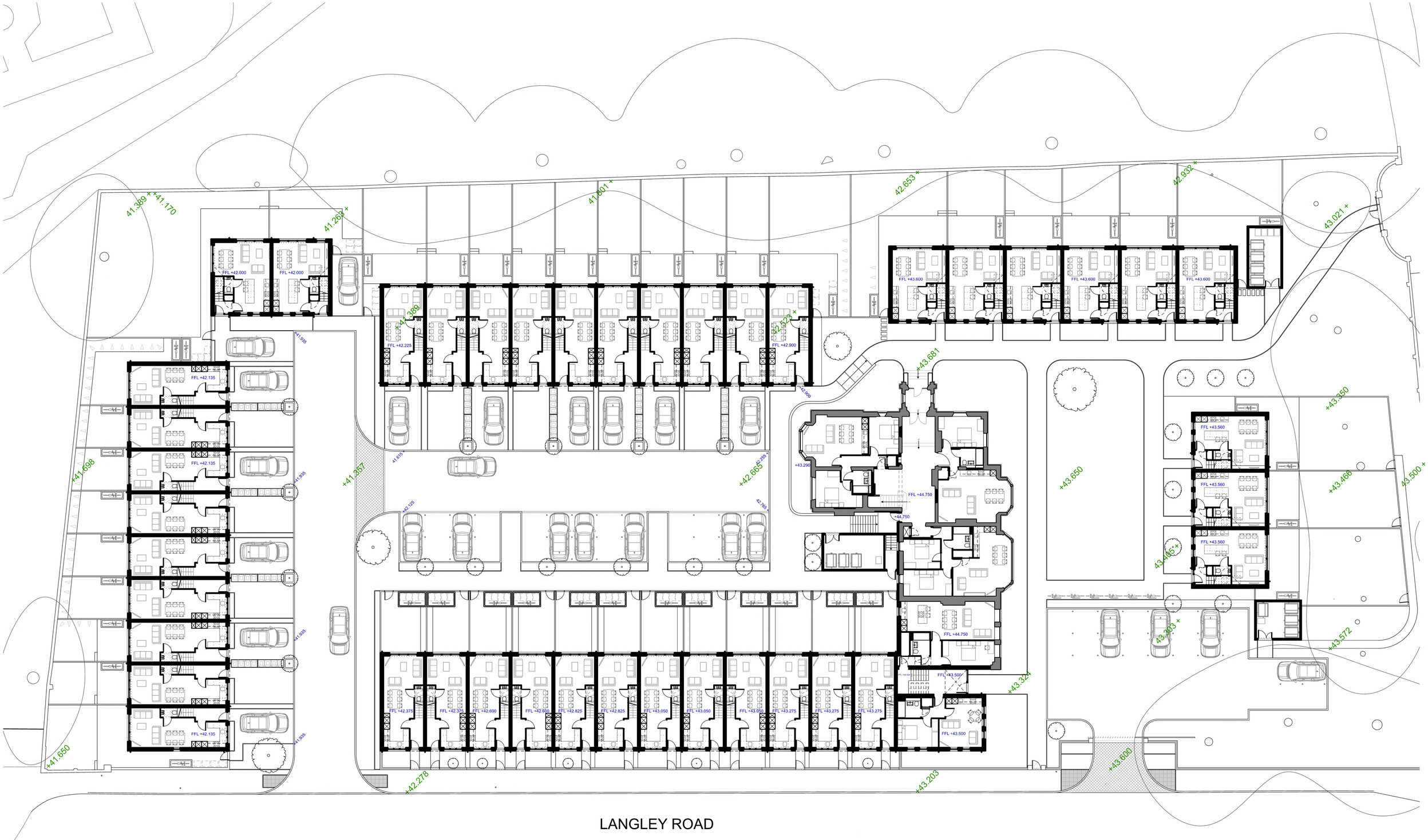
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revisions + notes:

	TYPE A	19 No.
	TYPE B	9 No.
	TYPE C	12 No.
	TYPE D	2 No.
	TYPE Z	7 No.
	TYPE Y	4 No.
	TOTAL	**53 No.**

0m 25m 50m

project:
188 WILMSLOW ROAD
job number:
0406
title:
PROPOSED SITE PLAN - ROOF PLAN
scale:
1:500 @ A3 or 1:250 @ A1
purpose for:
PLANNING
drawing number: issue:
AL(05)013 P1



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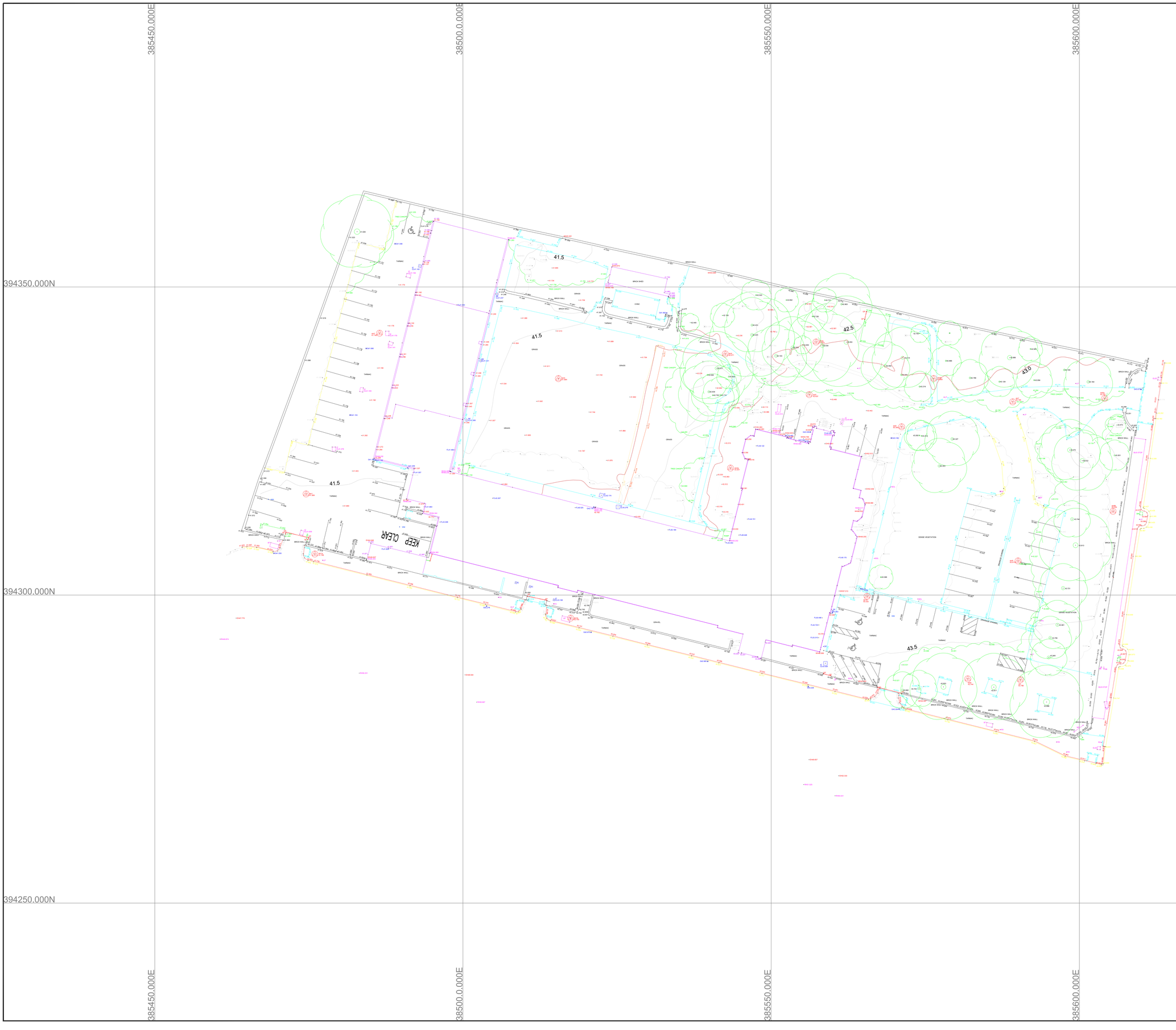
revisions + notes:

+42.278 EXISTING LEVEL

+41.935 PROPOSED LEVEL

project:
188 WILMSLOW ROAD
job number:
0406
title:
EXISTING AND PROPOSED LEVELS
scale:
1:350 @ A3
issued for:
PLANNING
drawing number: issue:
AL(05)015 P1

Appendix B – Topographic Survey



Topographical Survey Legend

BN	Litter bin	TL	Tie line
BH	Bore hole	TP	Telegraph pole
BL	Bollard	TPS	Tactile paving stubs
BS	Bus stop	TS	Traffic signal light
BT	British telecom ic	TV	Television cover
CPS	Concrete paving slabs	VP	Vent pipe
CT	Conifer	WM	Water meter
Elec	Electrical ic	WO	Wash Out
EP	Elec. pole	WTL	Unable to lift
ER	Earth rod	Fence annotation	
FH	Fire Hydrant	B/W	Barbed wire
FP	Flag pole	C/B	Close boarded
FT	Floodlight	C/I	Corrugated iron
GU	Gully	D/L	Deciduous
GP	Gate post	C/P	Concrete panel
GV	Gas valve	H/R	Hand rail
IC	Inspection cover	I/R	Iron railings
JB	Junction box	O/B	Open boarded
LB	Letter box	P/C	Post & chain
LP	Lamp post	P/R	Post & rail
MP	Utility marker	P/W	Post & wire
MH	Mile post	W/M	Wire mesh
MP	Measuring Wall	Level prefix descriptions	
NP	Name plate	CL	Bed level
P	Post	CL	Cover level
PK	Parking meter	EH	Eaves level
RS	Rodding eye	FL	Floor level
RG	Road gully	GL	Ground level
RW	Rain water pipe	PL	Parapet level
SP	Sign post	RH	Roofridge level
ST	Stop tap	SL	Soffit level
SB	Service Box	SpH	Arch springing level
TC	Traffic cone	SpL	Arch springing level
TCB	Telephone cat box	WH	Wall height
TH	Trial Hole	WL	Water level

BENCH MARK INFORMATION

All levels relate to O.S (Newlyn) Datum, Established using network RTK. Survey plotted on a plane local grid, orientated to National Grid.

NOTES

ONLY MANHOLES AND SERVICES VISIBLE AT TIME OF SURVEY SHOWN

DRAINAGE INFORMATION MUST BE CHECKED AND VERIFIED WITH LOCAL AUTHORITY RECORDS PRIOR TO WORK COMMENCING

Levels defining edge of carriageway are observed at channel (bottom of kerb). Unless otherwise stated.

TREE SPREADS ARE SYMBOLIC ONLY AND ARE REPRESENTATIVE OF THE THE AVERAGE SPREAD. THE DRIP LINE LAYER DENOTES THE TREES EXTREMITY

SURVEY STATIONS

stn1	385474.554	394316.411	41.569
stn2	385486.468	394342.501	41.140
stn3	385515.492	394335.135	41.664
stn4	385542.557	394339.143	42.071
stn5	385556.180	394332.527	43.437
stn6	385571.168	394327.312	43.349
stn7	385589.193	394331.359	43.195
stn9	385581.905	394286.394	43.744
stn10	385565.571	394299.801	43.232

REVISIONS

REV.	DESCRIPTION	SURVEYED	DRAWN	DATE
A	EXTRA TREES SURVEYED.	CH	JC	29.09.2025

JLP Surveying

JLP Surveying Consultants Ltd,
Suite 45 Rodney House,
King Street,
Wigan
WN1 1BT
Tel:- 01942 243313
Fax - 01942 492250
Mobile - 07710 424498
EMAIL:- peterhouston@jlpsurveys.com

PROJECT
188 Wilmslow Road
Fallowfield
Manchester

DRAWING TITLE
Topographical Land Survey

SCALE	SHEET SIZE	No. of SHEETS	DATE	REVISION
1 : 200	A0	1	17.09.2025	A

DRAWING NUMBER
S25-0797-1-1

Appendix C – United Utilities Public Sewer Records

United Utilities
Water for the North West

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

LKGroup

Unit 29
Eton Hill Road,
Radcliffe,
m26 2zs

FAO:

Your Ref: FRA251189 188 Wilmslow Road
Our Ref: UUPS-ORD-701111
Date: 13/01/2026

Dear Sirs

Location: FRA251189 188 Wilmslow Road

I acknowledge with thanks your request dated 12/01/2026 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

United Utilities Water Limited
Registered In England & Wales No. 2366678
Registered Office Haweswater House, Lingley Mere Business Park,
Lingley Green Avenue, Great Sankey, Warrington, WA5 3LP

Water for the North West

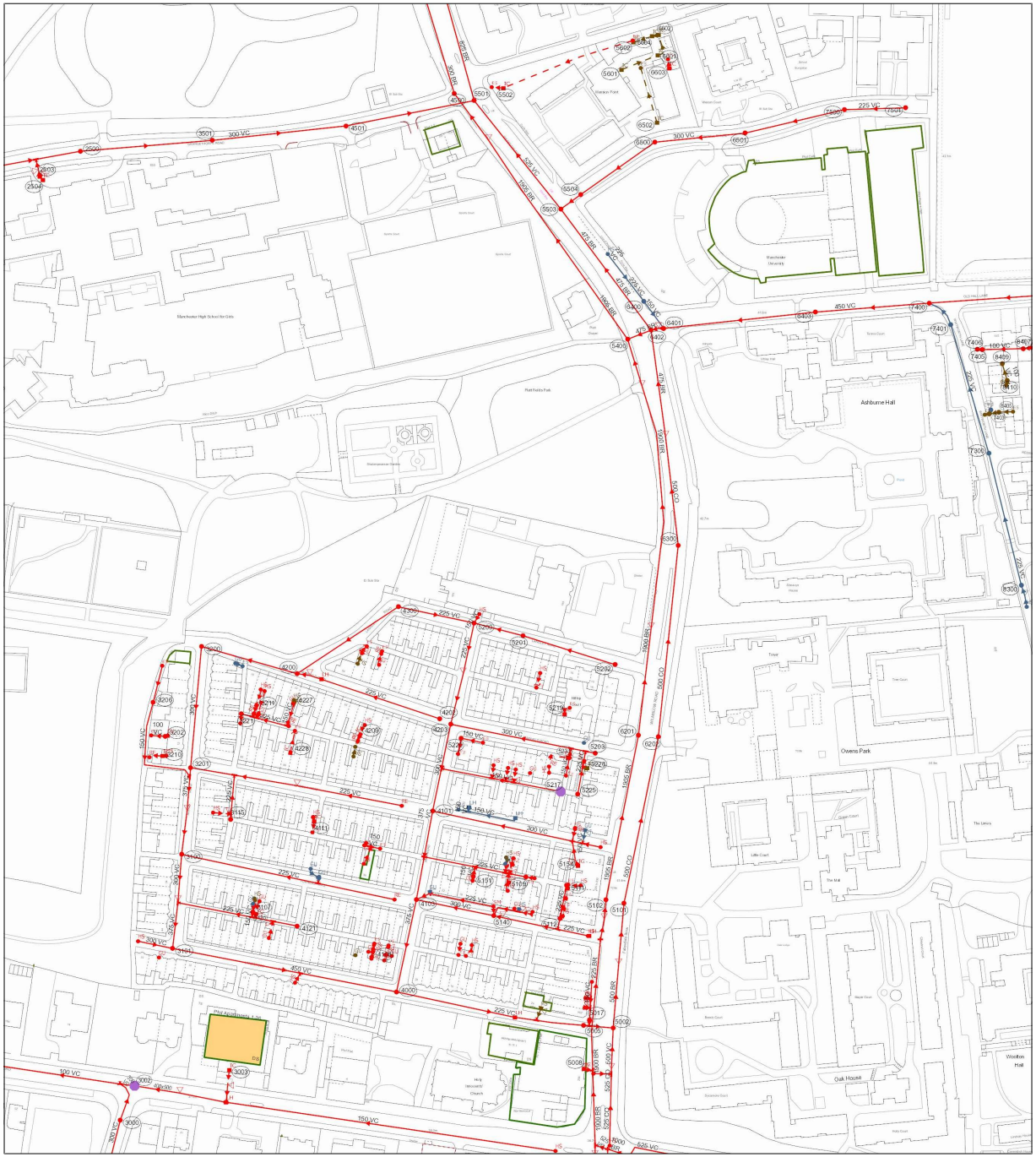
TERMS AND CONDITIONS - WASTEWATER AND WATER DISTRIBUTION PLANS

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.

United Utilities Water Limited
Registered In England & Wales No. 2366678
Registered Office Haweswater House, Lingley Mere Business Park,
Lingley Green Avenue, Great Sankey, Warrington, WA5 3LP



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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Refno	Cover	Func	Invert	Length	Size x	Size y	Shape	Mat	Grad
6300	42,93	CO	0	500				CO	50,40595
6501	41,61	CO	36,4	300				VC	50,249138 1 in 239
3000	36,73	CO	33,44	300				VC	22,64466
5200		CO		150				VC	5,6803956
5140	40,33	CO	37,33	300				VC	43,77243 1 in 84
7501	41,63	CO	39,57	225				VC	3,421417 1 in 94
5213		CO		150				VC	67,32286
7300	43,79	SW	41,45	225				VC	74,40703 1 in 103
6201	43,68	CO	0	1900				BR	99,4136
3305		SW	33,48	225				VC	74,4703 1 in 15
5300	44,39	SW	42,28	225				VC	75,18963 1 in 85
4300	41,49	CO	39,12	225				VC	67,31929 1 in 43
5400	41,32	CO	0	1900				BR	104,2632
5205		CO		225				VC	24,21125
5017		CO		150				VC	3,343338
5504	41,24	CO	35	300				VC	13,65747 1 in 151
7500	39,67	CO	34,16	300				VC	73,24916 1 in 195
6400	41,74	CO	36,25	450				VC	84,48077 1 in 217
7400	41,74	CO	39,21	450				VC	63,4981
4100	39,94	CO	36,79	375				VC	52,17279 1 in 23
6402	41,45	CO	0	475				BR	83,65534
3301	39,66	CO	33,78	300				VC	74,43116 1 in 248
4000	39,43	CO	33,48	225				VC	105,418 1 in 94
7401	42,6	SW	40,48	225				VC	17,75022 1 in 21
4202	41,68	CO	38,73	225				VC	75,83466
4203	42	CO	38,65	300				VC	49,2306 1 in 52
5102	41,65	CO	0	1965				BR	92,76914
7500	41,63	CO	38,65	300				VC	56,41548 1 in 235
5300	42,37	CO	39,47	225				VC	25,63564 1 in 75
3115		CO		225				VC	24,85267
6400	41,28	SW	39,38	150				VC	18,61038
6500	41,41	CO	38,17	300				VC	50,21952 1 in 173
5201	42,68	CO	39,85	225				VC	27,89053 1 in 75
5203	43,29	CO	39,52	300				VC	51,58431 1 in 35
3206		CO		150				VC	50,53944
3002	39,79	CO	32,69	100				VC	51,88938
8407		CO		100				VC	22,63418
8405		FO		150				VC	5,528167
3201	39,74	CO	35,79	375				VC	24,08518 1 in 65
4300	41,49	CO	39,12	225				VC	42,85348
2221		CO		225				VC	5,317622
7405		CO		100				VC	2,789668
5111	41,01	CO	28,68	225				BR	12,42501 1 in 759
5010		CO		225				VC	24,83581
3101	37,43	CO	34,34	450				VC	126,2022 1 in 152
5202	43,91	CO	41,73	225				VC	53,45091 1 in 51
3100	38,07	CO	35,04	300				VC	76,07991 1 in 261
5101	41,65	CO	31,83	500				CO	93,94147 1 in 626
3202		CO		100				VC	7,864065
5500	41,41	CO	30,9	525				VC	76,67549 1 in 452
5501	41,27	CO	35,71	525				BR	103,2741
6402	41,45	CO	39,82	475				BR	13,02939
5231		CO		150				VC	5,333312
5202	43,7	CO	31,47	500				CO	106,2692
5002	39,74	CO	32,32	500				BR	38,12934
3206	39,6	CO	36,76	300				VC	67,29912 1 in 72
4200	40,48	CO	37,05	300				VC	50,08176 1 in 71
6401	41,49	CO	39,25	450				VC	3 1 in 1
4001	40,44	CO	33,48	300				VC	73,28712 1 in 154
5151		CO		150				VC	5,438622
5106		CO		225				VC	57,39908
7403		FO		150				VC	2,304051
4101	40,84	CO	37,66	375				VC	49,61968 1 in 59
4121		CO		225				VC	67,35047
3120		CO		150				VC	2,986336
8410		FO		100				VC	9,8284

Refno	Cover	Func	Invert	Size x	Size y	Shape	Mat	Length	Grad

LEGEND

Abandoned | Foul | Surface Water | Combined

Public Sewer
Private Sewer
Section 104
Rising Main
Sludge Main
Overflow
Water Course
Highway Drain

All point assets follow the standard colour convention:
red - combined | blue - surface water
brown - foul | purple - overflow

- Manhole
- Head of System
- Extent of Survey
- Rodding Eye
- Inlet
- Discharge Point
- Vortex
- Penstock
- Washout Chamber
- Valve
- Air Valve
- Non Return Valve
- Soakaway
- Gully
- Cascade
- Flow Meter
- Hatch Box
- Oil Interceptor
- Summit
- Drop Shaft
- Orifice Plate
- Side Entry Manhole
- Outfall
- Screen Chamber
- Inspection Chamber
- Bifurcation Chamber
- Lamp Hole
- T Junction / Saddle
- Catchpit
- Valve Chamber
- Vent Column
- Vortex Chamber
- Penstock Chamber
- Network Storage Tank
- Sewer Overflow
- Ww Treatment Works
- Ww Pumping Station
- Septic Tank
- Control Kiosk
- DNM 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	Asbestos Cement
BR	Brick
PE	Polyethylene
RP	Reinforced Plastic Matrix
CO	Concrete
CSB	Concrete Segment Bolted
CSU	Concrete Segment Unbolted
CC	Concrete Box Culverted
PSC	Plastic / Steel Composite
GRC	Glass Reinforced Plastic
DI	Ductile Iron
PVC	Polyvinyl Chloride
CI	Cast Iron
SI	Spun Iron
ST	Steel
VC	Vitrified Clay
PP	Polypropylene
PF	Pitch Fibre
MAC	Masonry, Coursed
MAR	Masonry, Random
U	Unspecified

Address or Site Reference:

FRA251189 188 Wilmslow Road,

Scale: 1:1250 **Date:** 13/01/2026

Sheet: 1 of 1

Printed by: Property Searches

SEWER RECORDS

United Utilities
Water for the North West

Appendix D – United Utilities Pre-Development Enquiry

WASTEWATER PRE-DEVELOPMENT ENQUIRY

United Utilities Grasmere House, 2nd Floor
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP

05/02/2026

Dear **Dan Percival – LK Consult Ltd,**

Pre-Development Enquiry for 188 Wilmslow Road, Fallowfield, Manchester, M14 6LJ.

UU Reference Number: 08541903.

We have assessed your application based on the information provided. This pre-development advice on your drainage strategy will be valid for 12 months. Your strategy will need review by other authorities as part of the planning process. We advise conducting necessary site investigations to confirm viability of your proposals.

Modelled Flood Risk

I can confirm that we do not have modelled flood risk within the vicinity of the proposed development.

Please note that our modelling data is indicative, and only representative of the 1:100year storm event.

Please see **comment 2** of the attached guidance sheet

Asset Protection

We have reviewed our records and can confirm that there does not appear to be any charted public sewers located within the boundary of the proposed development.

Please see **comment 3** of the attached guidance sheet and **Working Near Our Pipelines Guidance document**

Foul Water

Foul flow from this site will be allowed to drain into the public combined sewer system.

Our preferred point of discharge would be to the 225mm diameter public combined sewer within Langley Road, located South of your proposed development at unrestricted rate.

Manhole reference SJ85945200, **Grid reference** 385509, 394294.

Please see the images at the end of this letter for clarification

WASTEWATER PRE-DEVELOPMENT ENQUIRY

Surface Water

Follow the National Planning Policy Guidance drainage hierarchy and Provide evidence for discounting higher options before considering public sewer discharge. Consult the Lead Local Flood Authority regarding surface water concerns.

Please see comment **4** within the guidance sheet

Infiltration

Please see comment **4** within the guidance sheet

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 watercourse located 75m NW of the proposed site.

We would encourage you to 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.

Public Sewer

Our preferred point of discharge would be to the 225mm diameter public combined sewer within Langley Road, located South of your proposed development- United Utilities requests that any agreed rate does not exceed 5l/s.

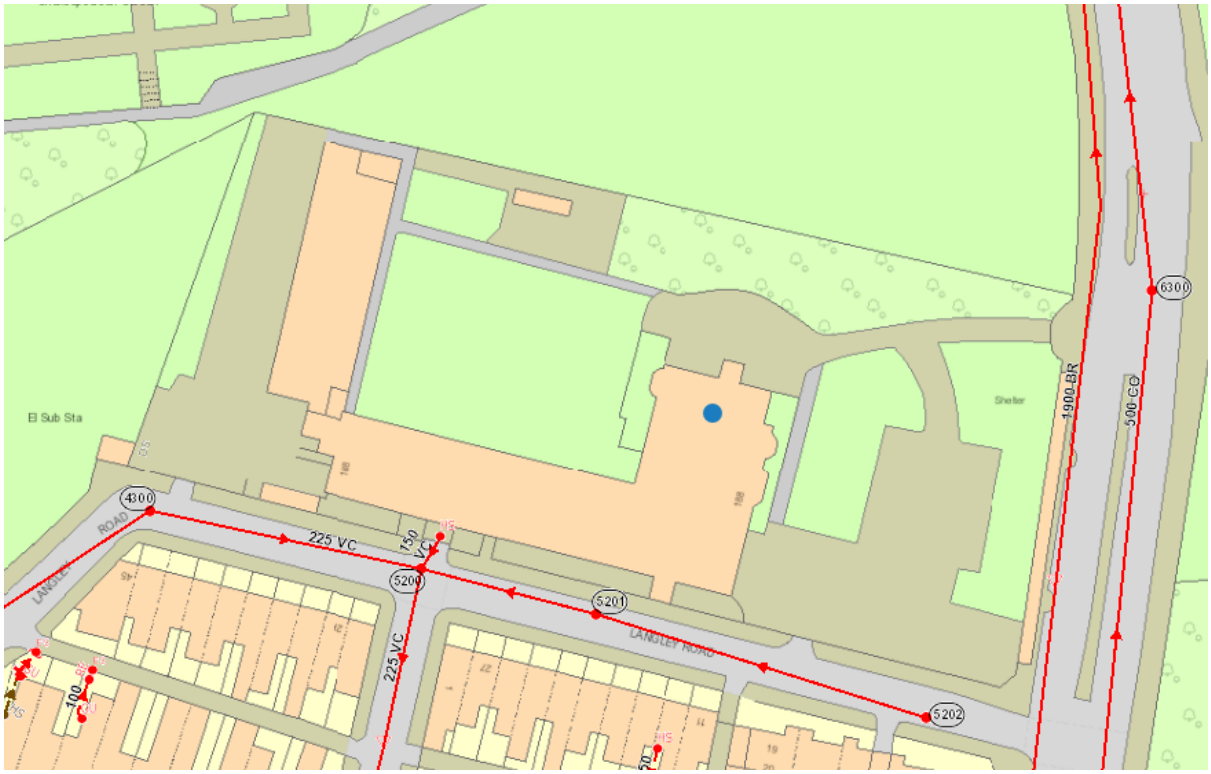
Manhole reference SJ85945200, **Grid reference** 385509, 394294.

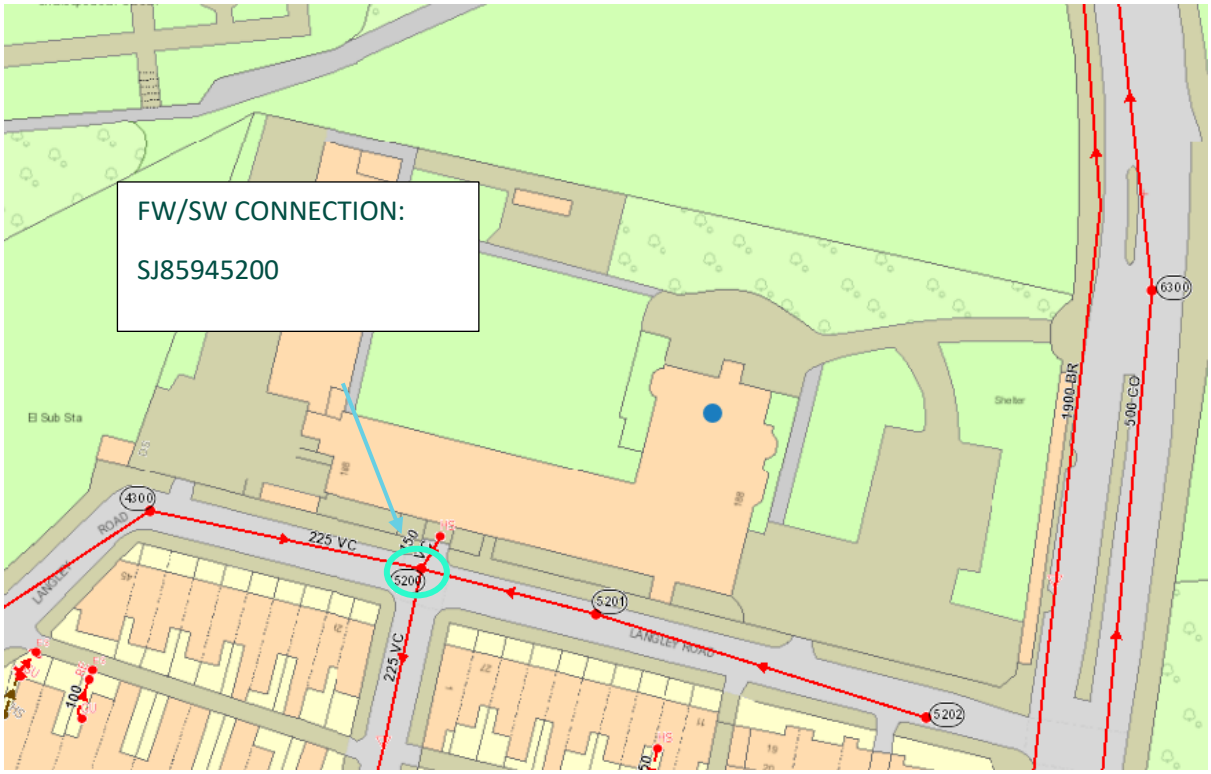
Please see images at the end of this letter for clarification

WASTEWATER PRE-DEVELOPMENT ENQUIRY

United Utilities
Water for the North West

Site Images





WASTEWATER PRE-DEVELOPMENT ENQUIRY

United Utilities
Water for the North West

Appendix E – Greenfield Runoff Rate Calculations

Greenfield runoff rate estimation tool

www.uksuds.com | Greenfield runoff rate estimation tool (https://www.uksuds.com/)

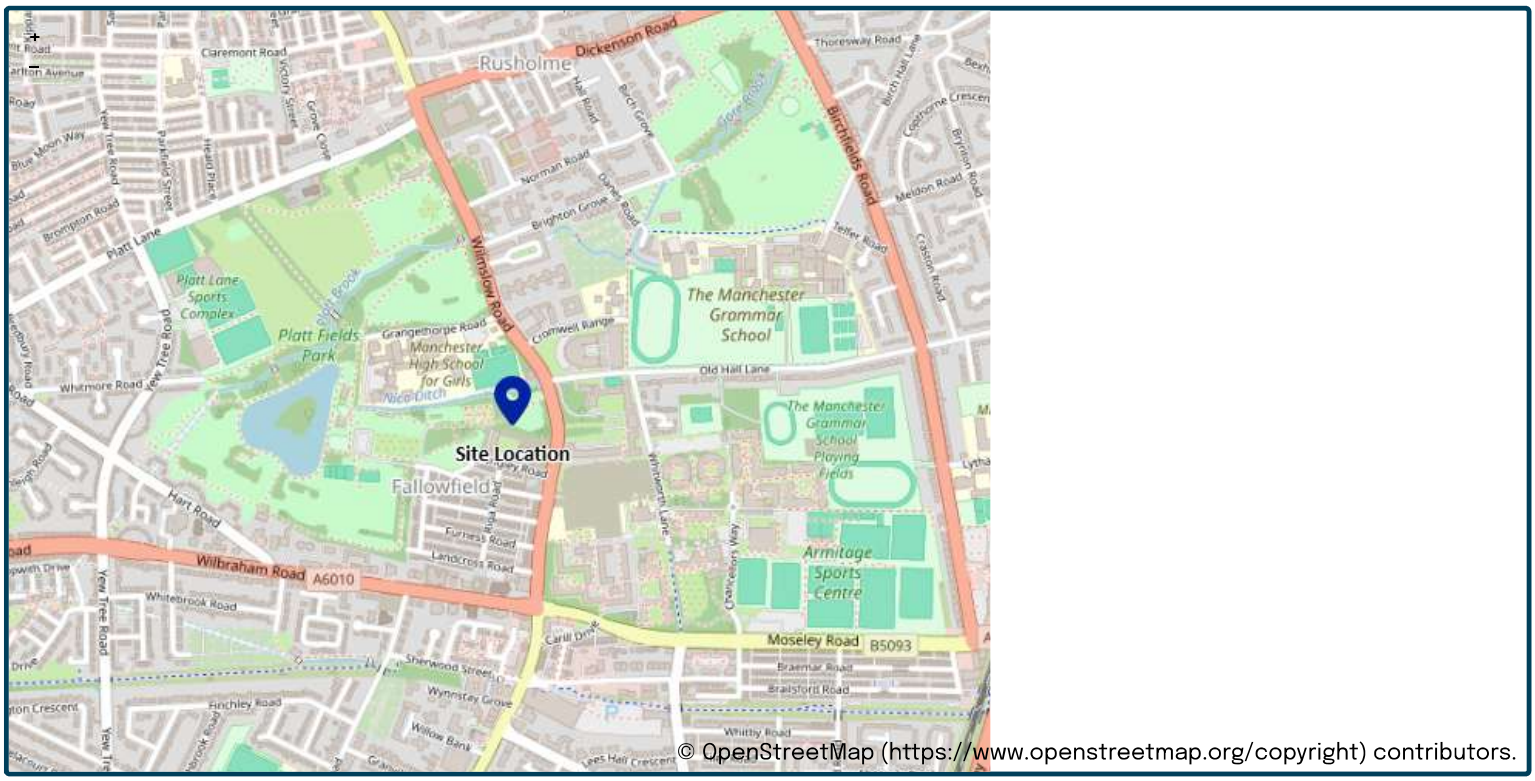
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015).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

Project details

Date	03/09/2026
Calculated by	D Percival
Reference	FRA251189
Model version	2.2.3

Location

Site name	188 Wilmslow Road
Site location	



Site easting (British National Grid)	385532
Site northing (British National Grid)	394325

Site details

Total site area (ha)	0.534 ha

Greenfield runoff

Method

Method	FEH statistical (2025)

FEH statistical (2025)

	My value		Map value
SAAR9120 (mm)	873 mm		
BFIHOST19scaled	0.333		
QMed-QBar conversion	1.075		1.075
QMed (l/s)	3.8 l/s		
QBar (FEH statistical 2025) (l/s)	4.1 l/s		

Growth curve factors

	My value		Map value
Hydrological region	10		10
1 year growth factor	0.87		
2 year growth factor	0.93		
10 year growth factor	1.38		
30 year growth factor	1.7		
100 year growth factor	2.08		
200 year growth factor	2.37		

Results

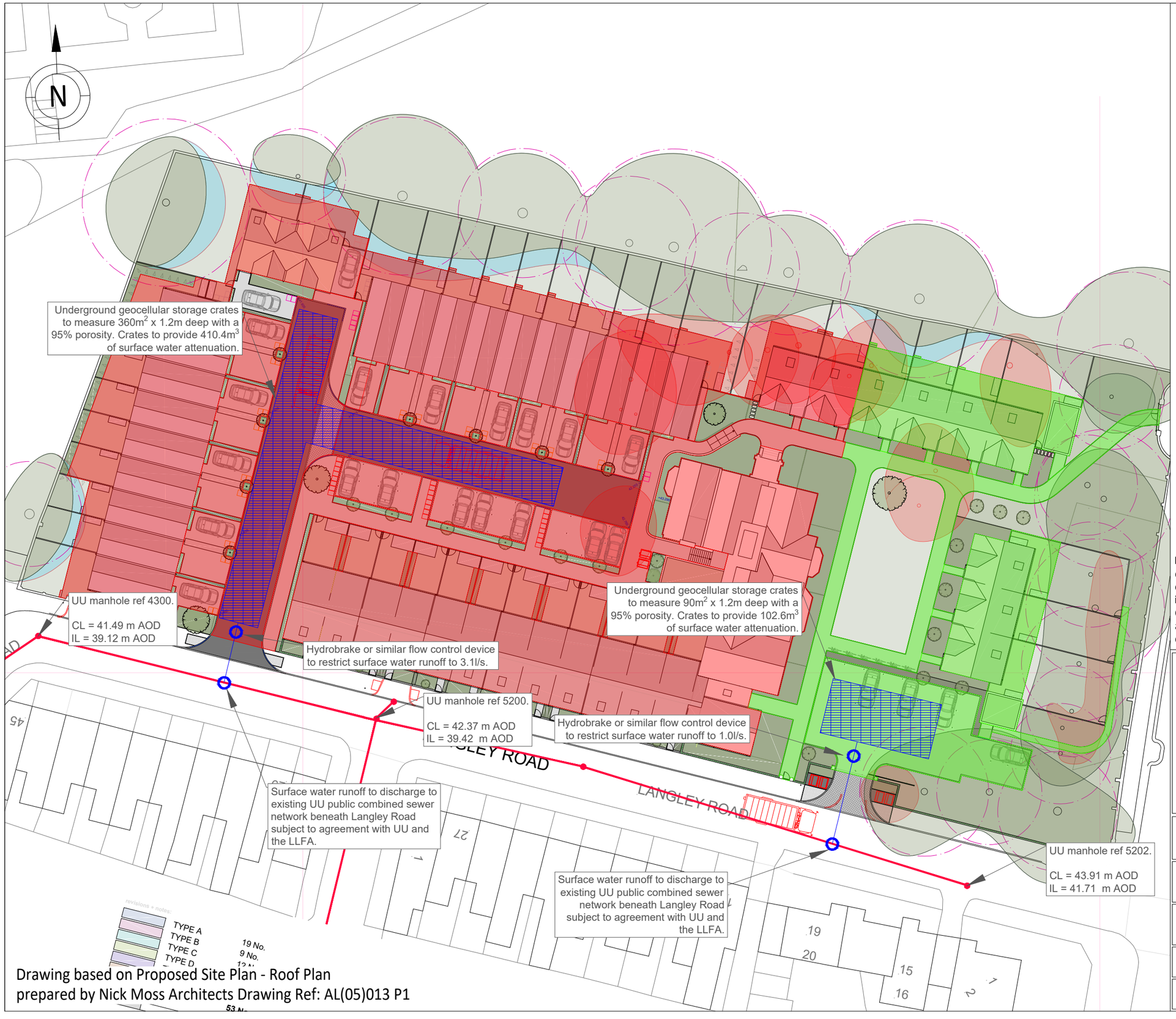
Method	FEH statistical (2025)
Flow rate 1 year (l/s)	3.6 l/s
Flow rate 2 year (l/s)	3.8 l/s
Flow rate 10 years (l/s)	5.7 l/s
Flow rate 30 years (l/s)	7.0 l/s
Flow rate 100 years (l/s)	8.6 l/s
Flow rate 200 years (l/s)	9.7 l/s

Please note runoff estimation is subject to significant uncertainty. Results are therefore normally reported to only 1 decimal place. Where 2 decimal places are provided, this does not indicate accuracy to this level, it has been adopted to prevent 'zero' figures from being reported. Outputs less than 0.01 l/s are reported as 0.01 l/s.

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.2.3) developed by HR Wallingford and available at uksuds.com (https://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 uksuds.com/terms-conditions (https://www.uksuds.com/terms-conditions). The outputs from this tool have been used to estimate 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, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

Appendix F – Conceptual Surface Water Drainage Strategy



Drawing based on Proposed Site Plan - Roof Plan prepared by Nick Moss Architects Drawing Ref: AL(05)013 P1

KEY:

- Geocellular Storage Crates
- Indicative Location of UU Sewers
- Indicative manhole location
- Catchment 1 area = 0.109ha
- Catchment 2 area = 0.425ha

NOTES:

1. This drawing represents a conceptual SuDS layout and aims to demonstrate a suitable surface water drainage strategy for the proposed development. Detailed drainage design will be required at the detailed design stage.
2. Location, dimensions and storage volumes provided by proposed SuDS features to be confirmed at the detailed design stage taking into account proposed site levels.
3. Final site discharge rate to be limited to 4.1 l/s during all events up to and including the 1 in 100 year plus 45% climate change event.
4. Surface water runoff to discharge to public combined sewer located beneath Langley Road subject to agreement with UU and the LLFA. Invert levels of the receiving combined sewer to be confirmed via an appropriate survey at the detailed design stage.

Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information. Subject to detailed design.

LK CONSULT

Client: 188 Wilmslow Road

Site: Mudskipper Limited

Title: Conceptual SuDS Layout

Job No.:	Scale (See Scale Bar):	App:	Revision:
FRA251189	NTS	F	1

Drawn By:	Checked By:	Drawn:
DP	CC	Sept 2026

Appendix G – Causeway Flow Calculations

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Easting (m)	Northing (m)	Depth (m)
Depth/Area 1	0.120	5.00	100.000	12.062	61.790	2.000

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	1.000	Drain Down Time (mins)	1440	Check Discharge Volume	x
Winter CV	1.000	Additional Storage (m³/ha)	0.0		

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
100	45	0	0

Node Depth/Area 1 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	98.000	Product Number	CTL-SHE-0047-1000-1000-1000
Design Depth (m)	1.000	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.0	Min Node Diameter (mm)	1200

Node Depth/Area 1 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	98.000
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	840

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	90.0	90.0	1.200	90.0	130.4	1.201	0.0	130.4

Flow+ v14.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute winter	Depth/Area 1	885	99.100	1.100	6.0	94.0338	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	Outflow (l/s)	Discharge Vol (m³)
960 minute winter	Depth/Area 1	Hydro-Brake®	1.0	118.8

Flow+ v14.0 Copyright © 1988-2026 Causeway Technologies Ltd

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Easting (m)	Northing (m)	Depth (m)
Depth/Area 1	0.470	5.00	100.000	12.123	61.797	2.000

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	1.000	Drain Down Time (mins)	1440	Check Discharge Volume	x
Winter CV	1.000	Additional Storage (m³/ha)	0.0		

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
100	45	0	0

Node Depth/Area 1 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	98.000	Product Number	CTL-SHE-0081-3100-1200-3100
Design Depth (m)	1.200	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	3.1	Min Node Diameter (mm)	1200

Node Depth/Area 1 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	98.000
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	1290

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	360.0	360.0	1.200	360.0	440.7	1.201	0.0	440.7

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Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	Depth/Area 1	1320	99.176	1.176	17.7	402.1702	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	Outflow (l/s)	Discharge Vol (m³)
1440 minute winter	Depth/Area 1	Hydro-Brake®	3.1	452.7

Flow+ v14.0 Copyright © 1988-2026 Causeway Technologies Ltd

Appendix H - References

[i] Ministry of Housing, Communities and Local Government, December 2024, “National Planning Policy Framework”.
[ii] Ministry of Housing Communities and Local Government. “Planning Practice Guidance” Ministry of Housing, Communities and Local Government, February 2024, “Planning practice guidance”.
[iii] JBA, March 2019, “Level 1 Strategic Flood Risk Assessment for Greater Manchester – Update”
[iv] JBA, March 2010, “Manchester City, Salford City and Trafford Councils Level 1 Hybrid SFRA”`
[v] CIRIA, December 2015, “The SUDS Manual”, C753.

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