

Land Adjacent to 35 Hilton St, Bury

FLOOD RISK ASSESSMENT AND DRAINAGE STRATEGY REPORT

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EXECUTIVE SUMMARY

This Flood Risk Assessment Report has been prepared by Urban Design Solutions in support of a planning application, for a proposed residential development on the land adjacent to 35 Hilton Street, Bury, BL9 6LT, involving the erection of two new terraced dwellings.

The report has been prepared with due regard to the National Planning Policy Framework (NPPF), the Defra National Standards for Sustainable Drainage Systems: Non-Statutory Technical Standards, Environment Agency Climate Change Guidance, and the combined Strategic Flood Risk Assessment for Greater Manchester, as well as other relevant local and national planning policies and guidance documents.

The Environment Agency flood mapping indicates the site is located entirely within Flood Zone 1, which is defined by the National Planning Policy Framework (NPPF) as land having a less than 1 in 1,000 annual probability of fluvial flooding. On this basis, the site is considered to be at Low risk of flooding from rivers or the sea.

Furthermore, the site has been determined to lie outside the mapped areas of surface water flooding and is therefore considered to be at low risk. The risk of flooding from all other sources has also been assessed, and following the completion of the development, it is considered to remain low.

A review of Bury Local flood risk documents found no evidence of previous sewer flooding on or near the proposed site. Additionally, reviews of the Greater Manchester SFRA and an Envirosearch Report indicate that the site has not been affected by historic flooding. Both the LLFA historic flood incidents map and the Environment Agency's Historic Flood Map confirm the site lies outside areas of recorded river, sea, or groundwater flooding, though some property-level incidents may not be represented.

The NPPF tests directs development to areas of lowest flood risk and considers vulnerability classifications. As the proposed development is located in Flood Zone 1 with a low risk of flooding from all sources, the Sequential and Exception Test requirements are satisfied.

There are no watercourses immediately adjacent to the site. The nearest are an unnamed watercourse about 350 m southeast, which has no direct impact on the site, and the River Irwell, located approximately 720 m to the west.

The use of soakaway infiltration methods for the disposal of surface water drainage from the site has been considered and based on the anticipated ground conditions, it is not likely to be feasible for the disposal of surface water runoff for this site

All surface water discharge methods have been assessed in line with the drainage hierarchy, and it has been determined that the most feasible option is to connect to the United Utilities combined sewer, subject to the necessary approvals.

In line with NPPF and Non-Statutory Technical Standards, Sustainable Drainage Systems (SuDS) have been considered and will be incorporated into the surface water drainage proposals where appropriate.

Local Planning Policy encourages greywater recycling and rainwater harvesting; therefore, a 210 L water butt is proposed to collect roof runoff, supporting source control within the SuDS Management Train.

The site has not been previously developed and is therefore considered to be a greenfield site for the drainage design purposes. Based on a total developable area of 204 m², the surface water runoff rate from the site has been calculated to be 0.17 litres per second (l/s), using the HR Wallingford SuDs tool and IH124 estimation approach.

However, according to the HR Wallingford estimation tool, where calculated flow rates are less than 5.0 l/s, discharge consent is typically set at 5.0 l/s to minimise the risk of blockages from vegetation and debris. In line with the above guidance, a greenfield runoff rate of 5.0 l/s has been adopted.

Attenuation storage has been assessed to contain runoff from up to the 100-year storm plus 45% climate change in line with the EA guidance, with an additional 10% impermeable area allowance included for urban creep.

Based on an assessment using Info-Drainage software, and with the consideration of a greenfield runoff rate adopted at 5.0 l/s, it is anticipated that up between 1.0m³ and 5.0m³ of storage will be required.

Water quality treatment is intended to meet the requirements of the Simple Index Approach, as outlined in Chapter 26 of the CIRIA C753 SuDS Manual. Furthermore, all SuDS and drainage assets will be maintained in accordance with the guidance provided in Chapter 32 of the same manual.

It is anticipated that the domestic foul drainage from the proposed residential dwellings is expected to be directed to an on-site combined water manhole, which will then discharge to UU MH 9706, subject to the necessary approvals from United Utilities.

The peak foul flow rates from the residential dwellings have been calculated in accordance with Sewer Sector Guidance and BS EN 12056-2 System II, with a total anticipated discharge of 0.09 l/s to the public sewer.

Based on all of the above, this Flood Risk Assessment and Drainage Strategy has concluded that a development of this type is appropriate in its proposed location, can be occupied safely for its lifetime, does not increase flood risk elsewhere in the local catchment and where possible seeks to reduce the risk of flooding overall.

1. PROJECT BACKGROUND

1.1 APPOINTMENT

- 1.1.1 Urban Design Solutions has been appointed by Rizwan Suleman (hereafter referred to as "the Client") to carry out a Flood Risk Assessment (FRA) and develop a drainage strategy for a proposed residential development on the land adjacent to 35 Hilton Street, Bury, BL9 6LT, involving the erection of two new terraced dwellings.

1.2 AIM OF STUDY

- 1.2.1 The objective of this assessment is to provide a Flood Risk Assessment (FRA) of appropriate scope and detail to substantiate and support an outline planning application for the proposed development site.
- 1.2.2 It is noteworthy that planning permission for the proposed development was granted by Bury Metropolitan Borough Council on 26/07/2023, under Application No. 69459. This approval is subject to the discharge of specific drainage-related conditions.

1.3 PROPOSED DEVELOPMENT

- 1.3.1 The proposed scheme involves the construction of two new three-bedroom terraced dwellings, each benefiting from front, side, and rear gardens incorporating a mix of hardstanding and landscaped grassed areas. The development is to be situated on land adjacent to 35 Hilton Street, Bury, BL9 6LT.
- 1.3.2 Further reference should be made to the architectural plans prepared by I. Planning Services, which provide comprehensive details of the proposed dwellings, including layouts, elevations and external features as described above. These plans are included in Appendix D of this report.

1.4 CONSULTATION

- 1.4.1 The following statutory consultees have been consulted in the preparation of this report:
- Bury Metropolitan Borough Council (BMBC) as Lead Local Flood Authority (LLFA);
 - The Environment Agency (EA);
 - United Utilities (UU);
- 1.4.2 A copy of the consultation and correspondence is included in Appendix L of this report.

1.5 REFERENCE

- 1.5.1 This FRA has been written in due cognisance of all relevant local and national planning policy information as outlined in section 2 of this report, along with requirements of statutory consultees.

1.6 LIMITATIONS

- 1.6.1 This report has been written using data provided by third parties. Whilst every care has been taken to ensure this information is accurate and up to date, Urban Design Solutions cannot warrant the reliability or completeness of third-party data.
- 1.6.2 Accordingly, the conclusions and recommendations set out in this report are subject to revision in the event that the underlying data is amended or updated following further consultation. The recommendations made within this report are subject to review on receipt of further consultation responses.

2. PLANNING POLICY AND CONSULTATION

2.1 RELEVANT NATIONAL AND LOCAL PLANNING POLICY AND STRATEGY DOCUMENTS

2.1.1 The following documents were reviewed as part of this Flood Risk Assessment:

- National Planning Policy Framework (Updated February 2025) and Planning Practice Guidance (Updated February 2024);
- Defra National Standards for Sustainable Drainage Systems: Non-Statutory Technical Standards (Updated June 2025);
- Defra Rainfall Runoff Management for Developments: SC030219 (2013);
- Environment Agency Climate Change Guidance (Updated May 2022);
- Flood and Water Management Act (April 2010);
- The Building Regulations, Part H (Updated 2015);
- C753 The SuDS Manual (CIRIA);
- Level 1 Strategic Flood Risk Assessment for Greater Manchester (March 2019);
- Level 2 Hybrid Strategic Flood Risk Assessment for Greater Manchester (October 2020);
- Bury Local Flood Risk Management Strategy (April 2018)

2.2 NATIONAL PLANNING POLICY FRAMEWORK

2.2.1 The National Planning Policy Framework (NPPF) requires that flood risk be addressed at every stage of the planning process, with the objective of preventing inappropriate development in areas susceptible to flooding and steering new development toward locations with the lowest flood risk.

2.2.2 On 6th March 2014 the Department for Communities and Local Government launched the Planning Practice Guidance (PPG) web resource to supplement the framework. On this date, PPS 25 (Development and Flood Risk) Practice Guide was cancelled and replaced by the Flood Risk and Coastal Change Planning Practice Guidance.

2.2.3 The NPPF was revised in February 2025. This provides a significant refresh to the guidance and brings it up to date and in line with the latest policy position on flood risk. A key aspect of this focuses on the critical role of integrating Sustainable Drainage Systems (SuDS) into the planning and design of surface water drainage solutions for new developments and infrastructure, whether on greenfield or brownfield sites.

2.2.4 Moreover, the NPPF incorporates a Flood Risk Vulnerability Classification, which categorises developments based on their sensitivity to flood risk, ranging from essential infrastructure to water compatible developments.

- 2.2.5 Chapter 14 of the NPPF establishes a comprehensive strategic approach to addressing the impacts of climate change and coastal change across all forms of development. It highlights the importance of integrating climate change considerations at each stage of the planning process, promoting sustainable development that mitigates environmental impacts and ensures long term viability.
- 2.2.6 Additionally, the chapter provides guidance on the management of development in areas vulnerable to flooding, ensuring that risk-based approaches, including the sequential test and exception test, are appropriately applied or considered. These assessments must be conducted in accordance with the designated flood risk vulnerability classification of the proposed development.
- 2.2.7 Where new development is deemed exceptionally necessary in such areas, the policy aims to make it safe without increasing flood risk elsewhere and, where possible, reducing flood risk overall.
- 2.2.8 This report has been written particularly in respect of paragraphs 170, 172, 178 and 181.

2.3 DEFRA NATIONAL STANDARDS FOR SUSTAINABLE DRAINAGE SYSTEMS: NON-STATUTORY TECHNICAL STANDARDS

- 2.3.1 This document outlines non-statutory technical standards for sustainable drainage systems and is intended to be read alongside the National Planning Policy Framework (NPPF) and the Planning Practice Guidance (PPG).
- 2.3.2 On 19th June 2025, DEFRA released updated non-statutory national standards for Sustainable Drainage Systems (SuDS), replacing the 2015 guidelines. These refreshed standards encourage a broader, multifunctional approach to managing surface water. The update aligns with key legislation, including the Flood and Water Management Act 2010 and the Environment Act 2021.
- 2.3.3 The revision provides clear guidance on the drainage hierarchy by setting criteria for prioritising the final runoff destination. It also introduces fixed standards that outline the minimum design, construction, maintenance, and operational requirements for all surface water drainage systems.
- 2.3.4 Moreover, guidance is provided on water quality and the requirement to assess it using a recognised method. This method should be applied when considering the various SuDS features proposed in the drainage strategy to manage surface water on site, and it should evaluate the pollution risks associated with the proposed land use to ensure that runoff is adequately treated.

- 2.3.5 The drainage system must be designed so that, unless an area is designated to hold and/or convey water as part of the design, flooding does not occur on any part of the site for a 1 in 30-year rainfall event.
- 2.3.6 The drainage system must be designed so that, unless an area is designated to hold and/or convey water as part of the design, flooding does not occur during a 1 in 100-year rainfall event in any part of a building (including a basement); or in any utility plant area susceptible to water, (e.g. Pumping Station or Electricity Substation) within the development.
- 2.3.7 The design of the site must ensure that, so far as is reasonably practicable, flows resulting from rainfall in excess of a 1 in 100-year rainfall event is managed in exceedance routes that minimise the risks to people and property.
- 2.3.8 Within developments an urban creep uplift factor shall be applied by adding a percentage increase to the calculated area of the impermeable area within the property curtilages. This shall be 10% for all developments unless there are no external private permeable spaces, for example, flats and apartments, when it shall be 0%.
- 2.3.9 A suitable water management train shall be provided for within the development that uses source, site and regional control measures as required.
- 2.3.10 Evidence shall be provided to demonstrate that a pollutant risk assessment has been undertaken and appropriate management of the risk from diffuse particulate and chemical substances in the surface water runoff has been provided in accordance with recognised industry guidance

2.4 CONSIDERATION OF CLIMATE CHANGE

- 2.4.1 As noted in the Climate Change Adaptation Sub-Committee Progress Report 2014, the greatest threat posed to the UK by climate change is an increased risk of flooding. Climate models indicate that floods similar to those experienced in England and Wales in autumn 2000 and between December 2013 and February 2014 have become more likely due to rising concentrations of greenhouse gases in the atmosphere.
- 2.4.2 It is therefore anticipated that the UK may experience more frequent short-duration, high-intensity rainfall events, as well as longer periods of sustained rainfall. In addition, sea levels are expected to continue rising.
- 2.4.3 The Environment Agency 'Flood Risk Assessments: Climate Change Allowances' guidance was updated on 27th May 2022.
- 2.4.4 Peak river flow allowances show the anticipated changes to peak flow by management catchment. Management catchments are sub-catchments of river basin districts. The range of allowances is based on percentiles. The latest

guidance for peak river flows states that the flood risk vulnerability classification for the development should be used to determine whether the central allowance, higher central allowance or upper end allowance should be applied.

- 2.4.5 For peak rainfall, the latest Environment Agency guidance provides allowances for the 1% and 3.3% annual exceedance probability (AEP) events, covering two time periods: the central allowance for the 2050s and the upper-end allowance for the 2070s. It should be noted that, for residential developments, a minimum design life of 100 years is recommended.

DEVELOPMENT LIFESPAN AND APPLICABLE ALLOWANCES

- 2.4.6 The proposed residential development is situated within the Irwell Management Catchment, and for the purposes of this report, the development is assumed to have a design life of 100 years. Accordingly, the following climate change contingency allowances have been applied in the assessment of this site:

Peak Rainfall (1% AEP)

- Upper End – 45% for 2070s epoch, used for a development with a lifetime between 2061 and 2125;
- Central Allowance – 30% for 2070s epoch, used for a development with a lifetime between 2061 and 2125;

Peak Rainfall (3.3% AEP)

- Upper End – 40% for 2070s epoch, used for a development with a lifetime between 2061 and 2125;
- Central Allowance – 43% for 2070s epoch, used for a development with a lifetime between 2061 and 2125;

3. EXISTING SITE

3.1 SITE LOCATION

- 3.1.1 Reference should be made to the Site Location Plan shown in figure 3-1 below, a full copy of which is included as Appendix A.

Figure 3-1 - Site Location Plan



3.2 SITE DESCRIPTION

- 3.2.1 Table 3-1 presents a summary of the key characteristics of the site as it presently exists.

Table 3-1 - General Site Characteristics

Characteristics	Description
Site address	Land adjacent to 35 Hilton Street, Bury, BL9 6LT.
Grid Reference	The Grid Reference in accordance to the British Coordinate System (BCS) is 380,977 (Easting), 411,716 (Northing).
Area (Ha)	0.021
Site Setting and Surrounding Land Uses	The site is a large triangular parcel of land within the constituency of Bury, located northwest of Bury town centre in a densely populated residential area. It is well served by local shops, amenities, and public bus routes along Chesham Road, with additional connectivity via the A56 linking directly to the M66.
Existing / Previous site usage	The site is classified as greenfield land, with no evidence of previous development. The surface is predominantly characterised by vegetation and natural earth landscaping.
Topography	Reference should be made to the Topographical Survey provided in Appendix B of this report. The proposed site contains no existing buildings and comprises a relatively flat terrain, with ground levels ranging between approximately 47.80m and 48.60m AOD.

3.3 EXISTING DRAINAGE

- 3.3.1 Reference should be made to the United Utilities Sewer Records, a full copy of which is included in Appendix C.
- 3.3.2 The site is served by a combined public sewer network. To the southeast, a 300mm vitrified clay sewer runs along Hilton Street from Manhole 9707, discharging into an un-named manhole before connecting to a 375mm sewer on Ruth Street. To the northwest, along Chesham Road, Manholes 9704 and 9706 form part of a 300mm vitrified clay sewer, which flows in a north-westerly direction and ultimately connects into a 600 x 1016mm sewer on Walmersley Road.
- 3.3.3 Invert levels for the above manholes have not been provided by United Utilities. The topographical survey, however, supplies cover levels for all specified manholes, and given their location within the highway, it is assumed that the inverts are at least 1200mm below the cover levels as a minimum.
- 3.3.4 Based on the above the invert level for MH 9707 has been interpolated to be approximately 46.78m AOD, MH 9704 at 47.43m AOD and MH 9706 at 47.02m AOD. As this is an assumption, it is highly recommended that these levels are to be confirmed through a CCTV survey or similar method.

- 3.3.5 Lastly, United Utilities sewer maps indicate that there are no private sewers in the vicinity of the site. As no records of existing private drainage systems have been provided for review, it is recommended that a GPR survey, together with a CCTV drainage survey, be undertaken to verify the location, connectivity, and condition of all existing private drainage on site, including connections to the public sewer or other outfalls.

3.4 EXISTING WATERCOURSE

- 3.4.1 There are no watercourses located within the immediate vicinity of the site.
- 3.4.2 An unnamed watercourse is located approximately 350 metres southeast of the site. It has no direct impact on the site, and its operational status is uncertain, as the channel appears to traverse predominantly hardstanding areas before ultimately discharging into the River Roch.
- 3.4.3 The nearest known watercourse, as indicated on the Environment Agency Main River Map, is the River Irwell, situated approximately 720 metres to the west of the site. Reference should be made to Appendix F for further illustration.

3.5 EXISTING FLOOD DEFENCE INFRASTRUCTURE

- 3.5.1 The Environment Agency flood maps indicate that the site is not located within an area protected by formal flood defences.

3.6 GEOLOGY AND HYDROGEOLOGY

- 3.6.1 The following geological information has been derived from a review of the Envirosearch Report dated 7th April 2022, produced by Argyll Environmental Ltd, together with the British Geological Society (BGS) records and the BGS Geology of Britain Viewer to assess the likely ground conditions in the vicinity of the site.
- 3.6.2 Made Ground has not been identified on any available geological mapping, and no historical land uses have been recorded on the site that would typically be associated with such artificial deposits.
- 3.6.3 The nearest recorded historical landfill site, which is expected to contain Made Ground as identified in the Envirosearch Report, is located approximately 160 metres towards the southeast from the site.
- 3.6.4 Additionally, published geological mapping indicates that the site is overlain by superficial deposits of Till (formerly referred to as Glacial Till), consisting of a heterogeneous mixture of clay, sand, gravel, and boulders. Underlying these deposits, the bedrock comprises the Pennine Lower Coal Measures Formation, which the BGS describes as interbedded grey mudstone and siltstone with pale grey sandstone, forming part of the Pennine Coal Measures Group.

- 3.6.5 Moreover, there are No BGS exploratory hole log records are available for the site. However, several records are present to the northwest, with the nearest located on Rake Street at an approximate distance of 170 metres from the site.
- 3.6.6 Borehole Log SD81SW205, SD81SW206, SD81SW207 and SD81SW208 all record 'Made Ground' in their stratigraphic record, indicating that the depths of artificial deposits range from 0.8m to 5.20m.

4. ASSESSMENT OF FLOOD RISK

4.1 FLOOD RISK

- 4.1.1 The potential risk of flooding to the site, arising from all current and future sources has been assessed in accordance with the National Planning Policy and the Environment Agency's Framework.
- 4.1.2 Table 4-1 below summarises the findings of the assessment. It should be noted that the designation of risk outlined in Table 4-1 is prior to the inclusion of any mitigation measures, which may subsequently act to reduce the risk.

Table 4-1 - Degree of Risk from Each Source of Flooding

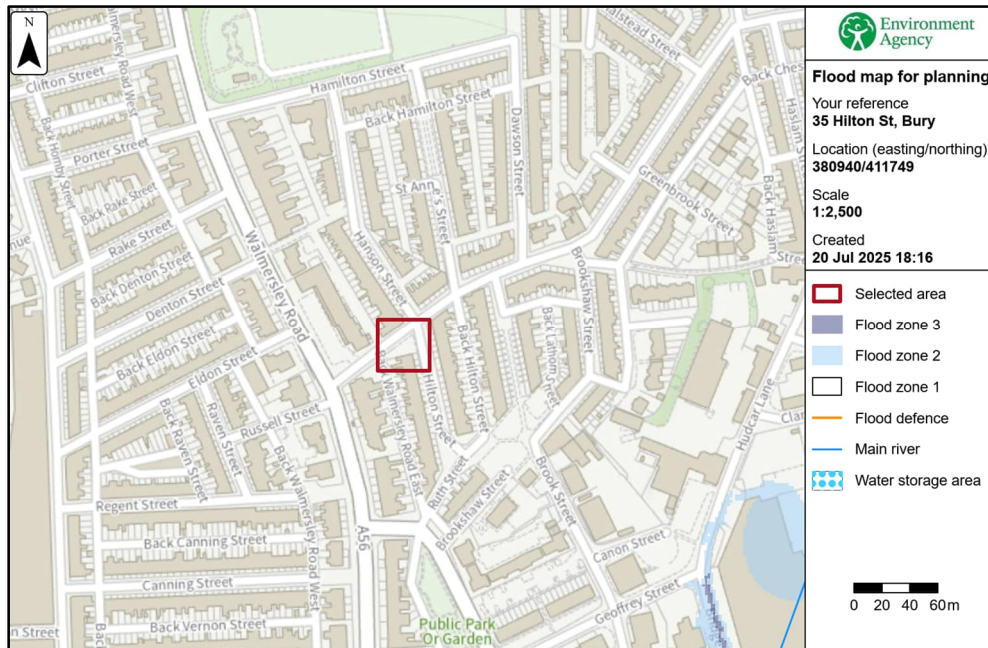
Source		Risk
Fluvial		Low
Pluvial / Surface Water		Low
Sewer		Low
Groundwater		Low
Tidal		Not at Risk
Artificial Sources	Reservoir	Not at Risk
	Canal	Not at Risk

4.2 FLUVIAL FLOOD RISK

- 4.2.1 The National Planning Policy Framework (NPPF) categorises flood risk as follows:
- **Zone 1 (low probability)** – Land assessed as having less than a 1 in 1,000 annual probability of river or sea flooding (<0.1%);
 - **Zone 2 (medium probability)** – Land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% – 0.1%), or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.5% – 0.1%) in any year; and
 - **Zone 3a (high probability)** - Land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.
 - **Zone 3b The Functional Floodplain** - This zone comprises land where water from river and sea has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map).

- 4.2.2 Based on the above and in accordance with Environment Agency flood mapping, the site is located entirely within Flood Zone 1, which is defined by the National Planning Policy Framework (NPPF) as land having a less than 1 in 1,000 annual probability of fluvial flooding. On this basis, the site is considered to be at Low risk of flooding from rivers or the sea. Reference should be made to Figure 4-1 for further detail.

Figure 4-1 EA Flood Maps for Planning



4.3 ORDINARY WATERCOURSE

- 4.3.1 There is an unnamed watercourse which is classed as a 'main river' is located approximately 350 metres southeast of the site. It has no direct impact on the site, and its operational status is uncertain.
- 4.3.2 The LLFA were contacted and asked to advise if they have any details of the existing watercourse along the southern boundary and whether they hold any records of historical flooding from any source or are aware of any potential future flood risk to the site from the existing watercourse or any other source. Bury Metropolitan Borough Council are yet to respond.

4.4 SURFACE WATER FLOODING

- 4.4.1 Surface water flooding occurs when intense or prolonged rainfall generates overland flow and ponding, typically where rainwater is unable to discharge through conventional drainage systems or accumulates in low-lying areas. This form of flooding arises when the capacity of local drainage infrastructure and natural infiltration is exceeded.

- 4.4.2 It should be noted that flooding from surface water is difficult to predict as rainfall location and volumes are difficult to forecast. The risk is heightened in urbanised environments due to the prevalence of impermeable surfaces, which restrict infiltration and increase surface runoff.
- 4.4.3 The EA descriptions for the High, Medium and Low risk scenarios for surface water flooding are as follows:
- **High risk** means that each year this area has a chance of flooding of greater than or equal to 1 in 30 (3.3%);
 - **Medium risk** means that each year this area has a chance of flooding between 1 in 100 (1%) and 1 in 30 (3.3%);
 - **Low risk** means that each year this area has a chance of flooding between 1 in 1000 (0.1%) and 1 in 100 (1%);
 - **Very Low risk** means that each year this area has a chance of flooding of less than 1 in 1000 (0.1%).
- 4.4.4 Based on the above, a review of all flooding events has been undertaken, and it has been determined that the site lies outside the mapped extent of surface water flooding, and is therefore considered to be at low risk. Reference should be made to Figures 4-2 to 4-4 and Appendix G for further detail.

Figure 4-2 Annual Likelihood of Surface Water Flooding- 'High'

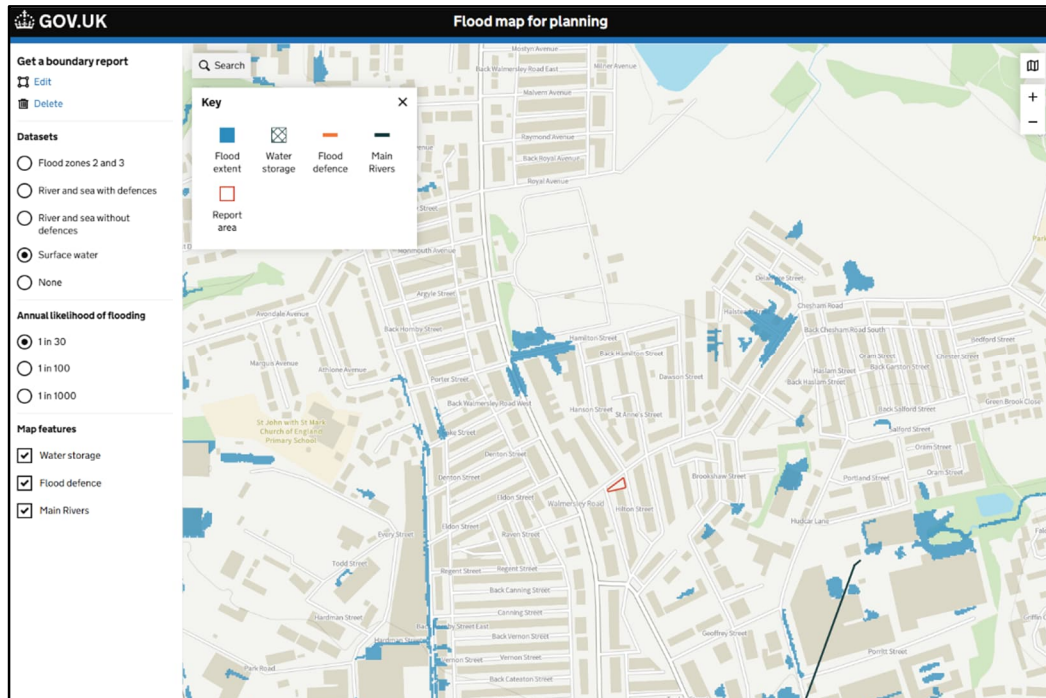


Figure 4-3 Annual Likelihood of Surface Water Flooding- 'Medium'

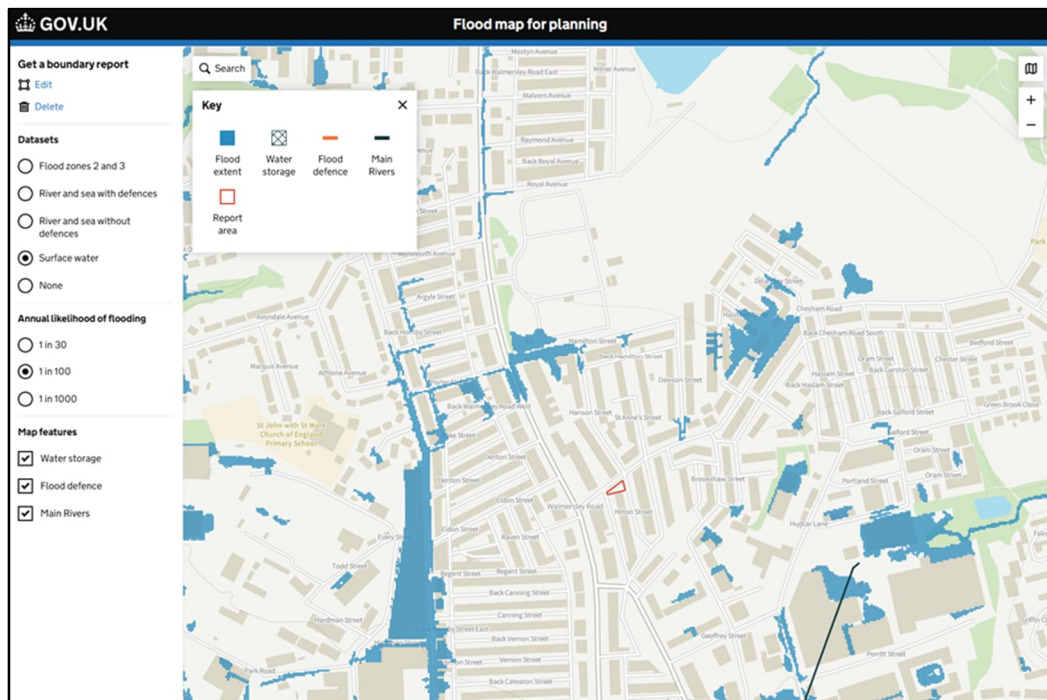
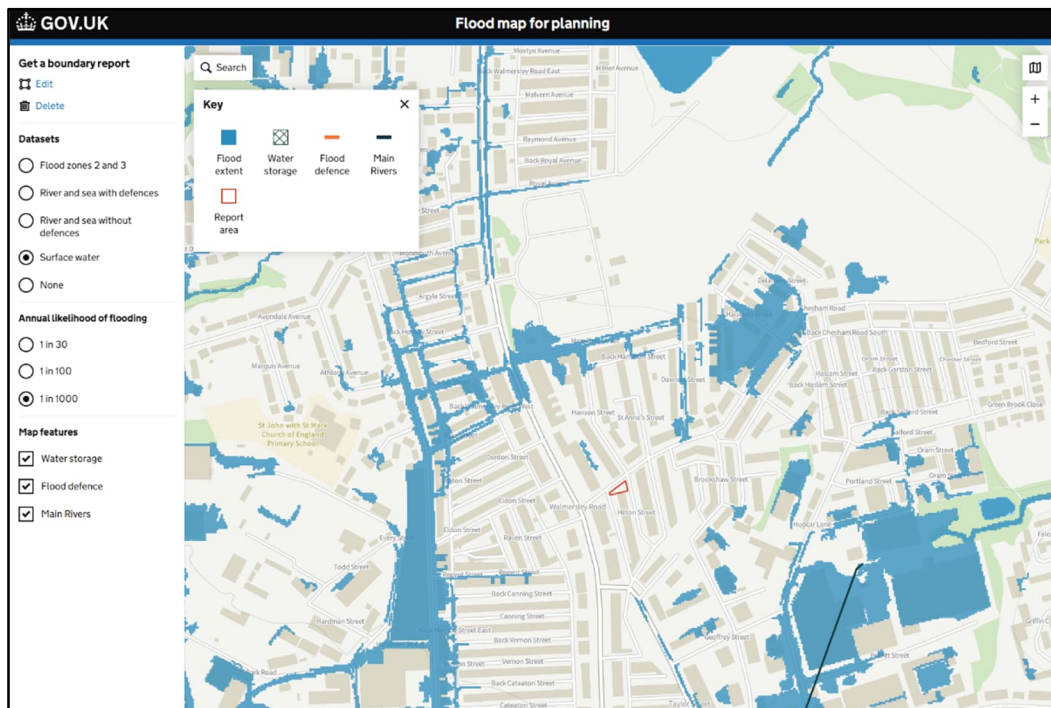
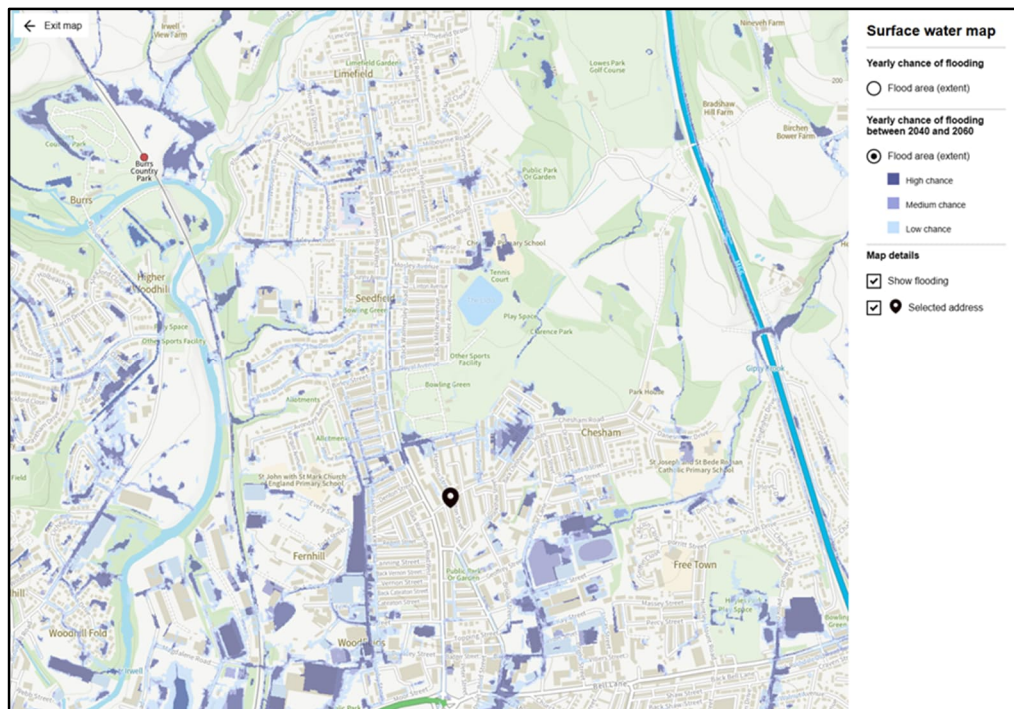


Figure 4-4 Annual Likelihood of Surface Water Flooding- 'Low'



- 4.4.5 Additionally, the Environment Agency's long-term flood risk maps for the period 2040 to 2060 indicate that the site has a low chance of surface water flooding. The area of highest risk is located around Clarence Park, approximately 200 metres to the north, and does not directly affect the site. Reference should be made to Figure 4-5 for further detail.

Figure 4-5 EA Long Term Surface Water Flood Map – 2040 to 2060



4.5 SEWER FLOODING

- 4.5.1 Sewer flooding typically occurs when the volume of surface water entering the sewer network exceeds its capacity, or when blockages prevent normal flow.
- 4.5.2 The Bury Local Flood Risk Management Strategy, Flood Investigation Report and Level 1 Strategic Flood Risk Assessment (SFRA) were reviewed to identify any records of previous sewer flooding; however, no evidence or documented instances of such occurrences have been reported on or in the vicinity of the proposed site.
- 4.5.3 To further support this, during the historic flooding event of Storm Eva on Boxing Day 2015, which caused extensive regional flooding including within Bury District, United Utilities confirmed that no sewer flooding was reported at or in close proximity of the proposed site. Therefore, the risk of sewer flooding is considered to be Low.
- 4.5.4 As sewer capacity is managed by United Utilities, they were contacted to confirm whether any records exist of historical flooding resulting from the hydraulic capacity of the sewerage system at or near the site. A response is currently awaited.

4.6 GROUNDWATER FLOODING

- 4.6.1 Groundwater flooding occurs when the level of water below the ground, rises above the ground surface in areas away from usual channels or drainage pathways. i.e. into cellars and or basements. Groundwater flooding is most likely to occur in low-lying areas underlain by permeable rocks (aquifers). These may be extensive, regional aquifers, such as chalk or sandstone, or may be localised sands or river gravels in valley bottoms underlain by less permeable rocks.
- 4.6.2 The Bury Local Flood Risk Management Strategy notes that there are relatively few reported incidents of groundwater flooding in Bury and furthermore that the risk posed by groundwater flooding is likely to remain remote within the region.
- 4.6.3 Additionally, based on the Envirosearch Report dated 7 April 2022, prepared by Argyll Environmental Ltd, it is indicated that the risk of groundwater flooding in this area is negligible, with any potential occurrences having an annual probability of less than 1%.
- 4.6.4 Based on all of the above it is considered that the risk of groundwater flooding is Low.

4.7 TIDAL / COSTAL FLOOD RISK

- 4.7.1 The site is remote from tidal influences and is therefore not at risk of tidal or coastal flooding.

4.8 ARTIFICIAL SOURCES OF FLOODING

- 4.8.1 Non-natural or artificial sources of flooding may include canals, reservoirs, lakes, and similar features. The potential impacts of flood risk management infrastructure and other man-made structures should also be taken into account.

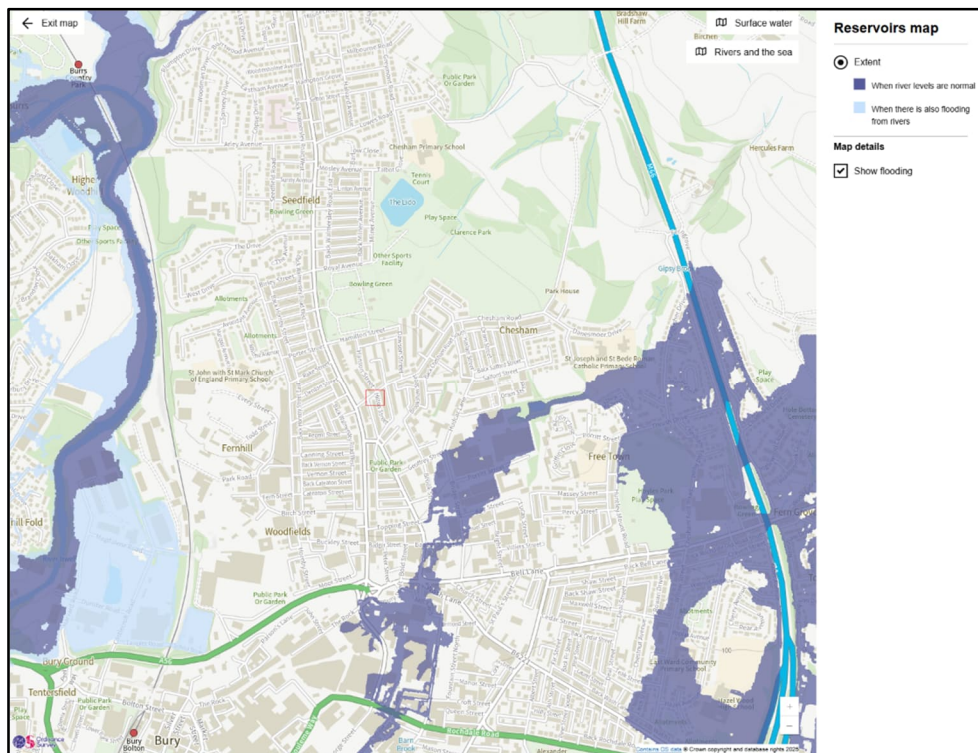
CANAL / RIVER INTERACTION

- 4.8.2 Canal flooding occurs when a canal overtops or breaches due to an inability to accommodate incoming water, or as a result of failure of a wall or embankment.
- 4.8.3 There are no canals within the immediate vicinity of the site. The nearest identified canal, as indicated in the Bury SFRA Greater Manchester Canal Network Map, is the Manchester, Bolton and Bury Canal, located approximately 2.06 km from the site.
- 4.8.4 Furthermore, the Bury Local Flood Risk Management Strategy identifies the flood risk associated with the Manchester, Bolton and Bury Canal as low, primarily due to the generally low embankments and the limited volume of water contained within the canal.
- 4.8.5 Based on the above, the site is not considered to be at risk of flooding by canals.

RESERVIORS

- 4.8.6 Reservoir flooding may occur in the event of overtopping or structural failure of the dam or associated retaining infrastructure.
- 4.8.7 The Bury Local Flood Risk Management Strategy suggests that the chance of reservoir failure is considered highly unlikely, as reservoirs in the UK are subject to stringent inspection and maintenance regimes.
- 4.8.8 Additionally, United Utilities operates a programme of proactive risk reduction, which continues to decrease the likelihood of reservoir failure on an annual basis. The reservoirs managed by United Utilities within Bury District function as water storage reservoirs supplied directly from the mains network. Consequently, they are not influenced by fluvial flooding and are inherently lower-risk structures compared to the majority of reservoirs.
- 4.8.9 Furthermore, the Environment Agency Reservoir Flood Map confirms that the site does not lie within an area at risk of inundation in the unlikely event of a reservoir failure. Reference should be made to Figure 4-6 for further detail.
- 4.8.10 Based on the above, it is considered that the site is not at risk of flooding from reservoir failure.

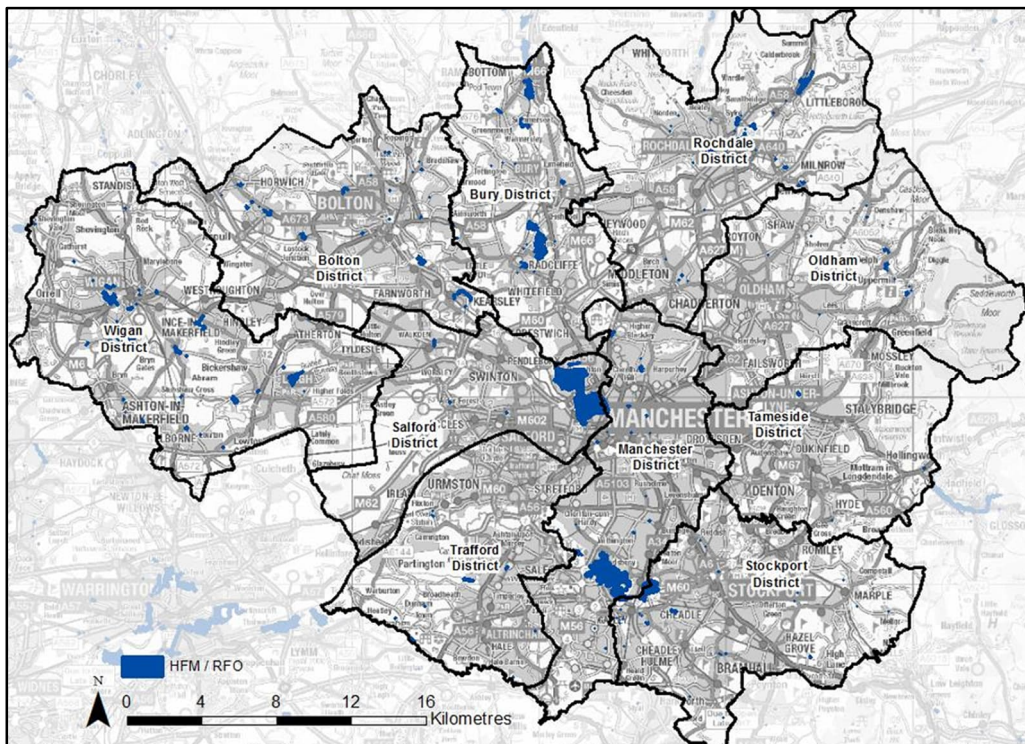
Figure 4-6 EA Reservoir Flood Map



4.9 HISTORICAL FLOODING

- 4.9.1 The Level 1 Strategic Flood Risk Assessment (SFRA) for Greater Manchester, together with the Envirosearch Report dated 7 April 2022 prepared by Argyll Environmental Ltd, were reviewed to determine whether the site has been subject to historic flooding.
- 4.9.2 The SFRA findings indicate that the proposed site is not located within an area affected by historic flooding, based on the Greater Manchester LLFA historic flood incidents map.
- 4.9.3 Additionally, the Historic Flood Map (HFM) included in the SFRA depicts the maximum extent of recorded historic flooding from rivers, the sea, and groundwater across England. Only flood outlines that have been reviewed, verified, and accepted by the Environment Agency in accordance with established criteria are included. The HFM confirms that the proposed site is not located within an area affected by historic flooding.
- 4.9.4 It should be noted that, given many of the recorded incidents occurred at property level and are considered 'sensitive', not all flood events have been represented or detailed on the SFRA maps.

Figure 4-7 EA HFM and RFO Map (Extracted from the Level 1 SFRA for Greater Manchester)



- 4.9.5 Furthermore, an assessment undertaken by Argyll Environmental Ltd concluded that there is no evidence of historic flood events within 250 metres of the site.

5. NPPF SEQUENTIAL AND EXCEPTION TEST

5.1 THE SEQUENTIAL TEST

- 5.1.1 The Sequential Test, within the NPPF, aims to steer all new developments to areas at the lowest risk of flooding and to ensure that the development type proposed is appropriate by reference to the flood risk.
- 5.1.2 Reference should be made to Annex 3: Flood Risk Vulnerability Classification within the NPPF guidance which states “*Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels*” are considered to be more vulnerable and prone to Flood Risk.
- 5.1.3 However, as the Proposed Development is in Flood Zone 1 and has a Low Risk of Flooding from all sources, the requirements of the sequential test are deemed to have been met.

5.2 THE EXCEPTION TEST

- 5.2.1 According to Table 2 of the Flood Risk and Coastal Change chapter of the National Planning Policy Framework (2025), all land uses are deemed appropriate within Flood Zone 1. Consequently, the Exception Test is not required for this site.

6. PROPOSED DRAINAGE STRATEGY

6.1 SURFACE WATER DRAINAGE

- 6.1.1 This outline drainage strategy has been carried out in due cognisance of the National Planning Policy Framework (February 2025) and Planning Practice Guidance (February 2024); Defra National Standards for Sustainable Drainage Systems: Non-Statutory Technical Standards (June 2025); and all other relevant national and local planning policy and guidance documents as set out in section 2 of this report.
- 6.1.2 Reference should be made to the concept drainage design drawing (1906-UDS-XXX-DR-C-0501), which is included in Appendix J.

6.2 DISPOSAL OF SURFACE WATER

- 6.2.1 The method for removal of surface water from the site has been selected in accordance with the hierarchy outlined in Building Regulations Part H and the NPPF as summarised below:

- Infiltration to the ground i.e. soakaways and similar methods;
- Discharge to a surface water body i.e. watercourse and canal;
- Discharge to a surface water sewer, or similar piped surface water drainage system;
- Discharge to a combined sewer.

SOAKAWAYS

- 6.2.2 The feasibility of utilising soakaway infiltration for the disposal of surface water from the site has been evaluated based on the currently available data, including the Envirosearch Report dated 7th April 2022 and the British Geological Society (BGS) records.
- 6.2.3 In light of the above, the anticipated ground conditions are summarised as follows:
- No Made Ground has been identified in the available geological mapping or the Envirosearch report; consequently, geotechnical information is limited;
 - Published geological mapping indicates that the site is overlain by superficial deposits of Till (previously referred to as Glacial Till), consisting of a *'heterogeneous mixture of clay, sand, gravel, and boulders'*;
 - The Bedrock Geology forms part of the Pennine Lower Coal Measures Formation, described by the BGS as *'interbedded grey mudstone and siltstone with pale grey sandstone'*.
- 6.2.4 In respect to permeability, Till is clay-rich, which tends to impede water infiltration. As a result, permeability is generally expected to be low to moderate, with infiltration likely to be slow and variable.

- 6.2.5 Furthermore, the bedrock formation, comprising mudstone and siltstone, is considered essentially impermeable, acting as a barrier to water movement and exhibiting very low permeability, thereby limiting the potential for infiltration.
- 6.2.6 Moreover, the proposed development is situated within a predominantly residential area, surrounded by public highways and existing dwellings.
- 6.2.7 The Building Regulations Part H specifies that infiltration devices should not be constructed within 5 metres of any building or road, in order to prevent infiltrated water from adversely affecting nearby structures. Additionally, maintenance of soakaways in public realm areas is noted to be particularly challenging.
- 6.2.8 Considering the anticipated low-permeability ground conditions and the urbanised nature of the site, the implementation of soakaways or other infiltration-based methods is considered unlikely to constitute a viable means of managing surface water runoff.

WATERCOURSE

- 6.2.9 There is one known watercourse (River Irwell) which lies approximately 720 metres to the west of the site. The proposed development does not have direct frontage onto this watercourse, and discharge would necessitate a substantial length of new pipework beyond the site boundary. Accordingly, discharging surface water to the existing watercourse is not considered a feasible or efficient option.

CANAL

- 6.2.10 There are no canals within the immediate vicinity of the site. The nearest identified canal, as indicated in the Bury SFRA Greater Manchester Canal Network Map, is the Manchester, Bolton and Bury Canal, located approximately 2.06 km from the site, therefore discharging surface water to the canal is not considered a viable option.

SURFACE WATER SEWER / HIGHWAY DRAIN

- 6.2.11 The United Utilities Public Sewer Records, provided in Appendix C, confirms that no active surface water sewer drains or highway drains are present within the vicinity of the proposed site, therefore discharging surface water to this feature is not possible.

PUBLIC COMBINED SEWER

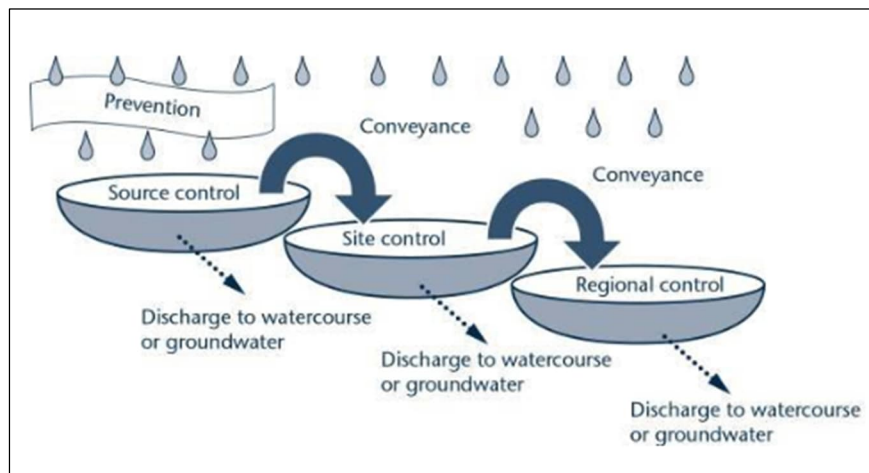
- 6.2.12 The United Utilities Public Sewer Records confirm that the site is served by a combined public sewer network. To the southeast, at the frontage of the proposed development, a 300mm vitrified clay sewer runs along Hilton Road. To the northwest, along the side and rear of the development on Chesham Road, a 300mm vitrified clay sewer is present, which continues in a north-westerly direction before ultimately connecting to a 600 x 1016mm sewer on Walmersley Road.

- 6.2.13 As all other collection options within the hierarchy are considered impracticable for this development, it is proposed that surface water runoff be discharged to the combined United Utilities public sewer, with the site incorporating separate networks for surface water and foul water. All details regarding the discharge points can be found in the concept drainage design drawing (1906-UDS-XXX-DR-C-0501), which is included in Appendix J.
- 6.2.14 Preliminary consultation with United Utilities has confirmed their initial consent in principle for a connection to the existing public combined sewer. The precise nature and specification of the connections to the sewers in Hilton Road and Chesham Road will be subject to formal agreement with United Utilities.

6.3 SUSTAINABLE DRAINAGE SYSTEMS

- 6.3.1 To comply with the national guidelines and policies set out by the NPPF and the Non-Statutory Technical Standards for Sustainable Drainage, the provision of Sustainable Drainage Systems (SuDS) has been considered and where appropriate, will be integrated within the surface water drainage proposals.
- 6.3.2 SuDs can be categorised as the following:
- Source Control, i.e. manages runoff at, or close to where the rainfall lands;
 - Site Control, i.e. manages runoff from a wider area
 - Regional Control, i.e. manages runoff from a large area consisting of several catchments.

Figure 6-1 SuDS Management Train



- 6.3.3 The primary purpose of SuDS is to control surface water runoff produced by developments, particularly where impermeable surfaces have been introduced, while simultaneously improving the water quality of the runoff.
- 6.3.4 In addition to the above, there are significant opportunities to provide green SuDS features to enhance on site amenity and biodiversity

- 6.3.5 Areas of soft landscaping have been integrated into the site masterplan at various locations across the site. The localised nature of these areas makes them suitable for infiltration, providing a small reduction in runoff volume. This approach aligns with the concept of source control within the SuDS Management Train.
- 6.3.6 Furthermore, the use of permeable paving to capture and treat runoff from external surfaces, including dwellings and roofs, has been identified as an effective source control measure.
- 6.3.7 Moreover, a green roof could potentially be implemented, as the architect has proposed a flat roof at the rear of the dwelling. This option is suitable because it helps remove pollutants and can contribute to biodiversity management, subject to the detailed roof design.
- 6.3.8 Local Planning Policy recommends that greywater recycling and rainwater harvesting are considered within development proposals. In response, it is proposed to include a standard-sized water butt, with a capacity of approximately 210 L depending on the model, to collect rainwater from the roof. This approach aligns with the concept of source control within the SuDS Management Train.
- 6.3.9 To summarise, it is currently anticipated that the SuDS components listed in Table 6-1 are potentially suitable for this site and will be incorporated in the drainage scheme.

Table 6-1 – Suitability of SuDS Features

SuDS Feature	Water Quality	Type of Control	Volume Control	Storage	Cost	Overall Suitability
Soft Landscaping	HIGH	SOURCE	MEDIUM	HIGH	LOW	HIGH
Permeable Paving	MEDIUM	SOURCE	HIGH	HIGH	LOW	HIGH
Green Roof System	HIGH	SOURCE	MEDIUM	LOW	MEDIUM	MEDIUM
Aco Drain System	MEDIUM	SITE	MEDIUM	MEDIUM	MEDIUM	MEDIUM
Water Butt	MEDIUM	SOURCE	LOW	LOW	LOW	HIGH

6.4 IMPERMEABLE AREAS

- 6.4.1 The existing site area is approximately 204m², and is currently soft landscaping, therefore it is assumed to be permeable.

- 6.4.2 Based on the nature of the development, the proposed impermeable area is expected to increase to approximately 138m².

6.5 SURFACE WATER DISCHARGE RATES

- 6.5.1 As the site currently comprises soft landscaping with no evidence of previous development, it is considered as a greenfield site for the purposes of drainage design.
- 6.5.2 Based on a total developable area of 204 m², the surface water runoff rate from the site has been calculated to be 0.17 litres per second (l/s) using the HR Wallingford SuDS tool and IH124 estimation approach. Reference is to be made to the drainage calculation in Appendix I.
- 6.5.3 According to the HR Wallingford estimation tool, where calculated flow rates are less than 5.0 l/s, discharge consent is typically set at 5.0 l/s to minimise the risk of blockages from vegetation and debris.
- 6.5.4 In line with the above guidance, a greenfield runoff rate of 5.0 l/s has been adopted. This figure reflects the minimum permissible discharge rate typically accepted by regulatory authorities. The adopted rate will therefore form the basis for the surface water drainage design.

6.6 ATTENUATION STORAGE

- 6.6.1 The attenuation storage requirements for the proposed development were assessed to ensure that surface water runoff from storm events up to and including the 100-year event, with an additional 45% allowance for climate change, can be safely contained on-site without posing a flood risk to the property or elsewhere within the catchment.
- 6.6.2 A 10% allowance of the total impermeable area has been added for to surface water attenuation calculations for urban creep.
- 6.6.3 Based on an assessment using Info-Drainage software, and with the consideration of a greenfield runoff rate adopted at 5.0 l/s, it is anticipated that up between 1.0m³ and 5.0m³ of storage will be required. These values are subject to the detailed design of the proposed surface water drainage system.
- 6.6.4 As the required attenuation is minimal, the SuDS features outlined in Table 6-1 and incorporated into the proposed drainage strategy are expected to manage the necessary volume both efficiently and effectively.
- 6.6.5 The permeable paving is expected to provide approximately 3.11m³ of attenuation, based on a minimum 150 mm Type 3 Open Graded Sub-Base. It should be noted that increasing the depth of the sub-base will allow a greater volume of runoff to be attenuated.

- 6.6.6 Additionally, soft landscaping can contribute to attenuation by temporarily storing rainwater in the soil, promoting infiltration, and slowing runoff, thereby helping to reduce peak flow. Similarly, with a minimum of 150 mm of topsoil planted with grass seed, the expected attenuation is approximately 6.70 m³.

6.7 WATER QUALITY

- 6.7.1 It is intended that water quality treatment will be provided to meet the requirements of the Simple Index Approach as set out in the CIRIA C753 SuDS Manual Chapter 26.
- 6.7.2 The first step is to assign appropriate hazard indices for the proposed land use. In this case, the proposed development can be divided into the following zones:
- Residential Roofs;
 - Pedestrian Area i.e. property driveway, outdoor space etc.
- 6.7.3 Once the zones have been identified, the next step is to select a suitable SuDS feature for each area, ensuring that its total pollution mitigation index meets or exceeds the pollution hazard index.
- 6.7.4 Based on the above, the tables below provide the relevant land use, pollution hazard indices and proposed SuDS features and their associated SuDS mitigation indices for these areas.

Table 6-2 – Pollution Mitigation Strategy for Roof Zone

Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Residential Roofs	Very Low	0.2	0.2	0.05
SuDS Mitigation Index				
**It should be noted that the selected SuDS feature may provide additional water quality benefits. For example, green roofs and water butts can offer a degree of treatment, even though this is not specifically accounted for in the SuDS Manual.				

Table 6-3 – Pollution Mitigation Strategy for Pedestrian

Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Individual Property Driveways, residential car parks, low traffic roads (e.g. cul-de-sacs, home	Low	0.5	0.4	0.4

zones and general access roads) and non-residential car parking with infrequent change (e.g. schools offices) i.e.<300 traffic movements/day				
SuDS Mitigation Index				
Permeable Paving	0.7	0.6	0.7	
Total SuDS Mitigation Index	0.5 ✓	0.4 ✓	0.5 ✓	

6.8 FOUL WATER DRAINAGE

- 6.8.1 For all details of the foul drainage proposals for the site, reference should be made to the concept drainage design drawing (1906-UDS-XXX-DR-C-0501), which is included in Appendix J.
- 6.8.2 It is anticipated that the domestic foul drainage from the proposed residential dwellings is expected to be directed to an on-site combined water manhole, which will then discharge to UU MH 9706, subject to the necessary approvals from United Utilities.

6.9 FOUL WATER DISCHARGE RATES

- 6.9.1 The anticipated peak foul flow rates from the residential dwellings have been calculated in accordance with the Sewer Sector Guidance and BS EN 12056-2 System II, based on an allowance of 4,000 litres per dwelling per day. The results are presented in Table 6-4 below.

Table 6-4 – Foul flows from Dwelling (SGG)

No. of Dwelling(s)	Flow Rate (l/p/d)	Sum (Total Development)
2	4000	(4000*2)/24 = 333.3; 333.3/3600 = 0.09 l/s

- 6.9.2 Based on the above a total peak foul flow of 0.09 l/s is anticipated to discharge from the development to the public sewer.

6.10 DRAINAGE SYSTEM MAINTENANCE

- 6.10.1 SuDS and all other drainage assets, including drains, manholes, and ACO systems, require regular maintenance. This will be carried out in accordance with the operation and maintenance requirements outlined in Chapter 32 of the CIRIA C753 SuDS Manual.
- 6.10.2 It is likely that minor below ground drainage systems within individual property boundaries will remain with the respective property owners.
- 6.10.3 Finalised details regarding the ownership and responsibilities for the future maintenance of the proposed on-site drainage systems will be confirmed in writing, specifying whether they will be adopted by United Utilities or managed by the property owner.

7. MITIGATION / MANAGEMENT OF FLOOD RISK

7.1 SITE LEVELS

- 7.1.1 Site levels should be designed so that surface water runoff will drain positively away from any building threshold.
- 7.1.2 It is recommended that the proposed threshold level of any residential dwelling should be set at a minimum of 150mm above the external ground level.

7.2 DRAINAGE AND EXCEEDANCE FLOW ROUTES

- 7.2.1 The proposed surface water drainage system shall be designed in accordance with the strategy presented in Section 6 of this report. This will ensure that the risk of flooding to the site and the wider local catchment is not increased for storm events up to and including the 100-year event, plus a 45% allowance for climate change.
- 7.2.2 It should be noted that storm events exceeding the 100-year event plus a 45% allowance for climate change, or blockages within the system, may result in flooding from the site drainage system.
- 7.2.3 In light of the above, reference should be made to the Overland Flow Routes drawing (1906-UDS-XXX-DR-C-0502), which demonstrates that overland flows would be safely directed away from the dwellings toward the existing public sewer on Chesham Road and Hilton Road.

7.3 FLOOD RISK POST MITIGATION AND MANAGEMENT

- 7.3.1 Table 7-1 summarises the risk of flooding from all sources following development, taking into account the management of surface water runoff, the implementation of SuDS, attenuation requirements, hydrological analysis, and the effects of climate change.

Table 7-1 - Degree of Risk from Each Source of Flooding Post Development

Source		Risk
Fluvial		Low
Pluvial / Surface Water		Low
Sewer		Low
Groundwater		Low
Tidal		Not at Risk
Artificial Sources	Reservoir	Not at Risk
	Canal	Not at Risk

8. CONCLUSION

- 8.1.1 This Flood Risk Assessment and Drainage Strategy has concluded that a development of this type is appropriate in its proposed location, can be occupied safely for its lifetime, does not increase flood risk elsewhere in the local catchment and where possible seeks to reduce the risk of flooding overall.
- 8.1.2 Moreover, this development complies with national guidelines and policies set out by the NPPF, Environment Agency, Bury Local Flood Risk Management Strategy, and the Strategic Flood Risk Assessment (SFRA) for Greater Manchester.

APPENDIX A

SITE LOCATION PLAN



Denton St

Back Rose Bank

Dawson St

Chesham Rd

Chesham Rd

Chesham Rd

Lathom St

Back Chesham Rd W

Brookshaw St

Chesham Rd

Hilton St

Back Hilton St

Back Hilton St

Lathom St

Back Lathom St

Ruth St

Brookshaw St

Hilton St

Hilton St

Ruth St

Brookshaw St

Regent St

Back Ravensley Rd W

Raven St

Eldon St

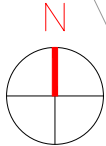
Back Raven St

A66

B6221

APPENDIX B

EXISTING TOPOGRAPHICAL SURVEY



PROJECT	LAND ADJACENT TO .35 HILTON ST, BURY
TITLE	TOPOGRAPHICAL SURVEY
DRAWING NO.	TS01
SCALE	1:150 @ A3
REVISION	P01
ARCHITECT	I PLANNING SERVICES
STATUS	FOR INFORMATION
DRAWN	SM
CHECKED	SM
DATE	07/09/2025

APPENDIX C

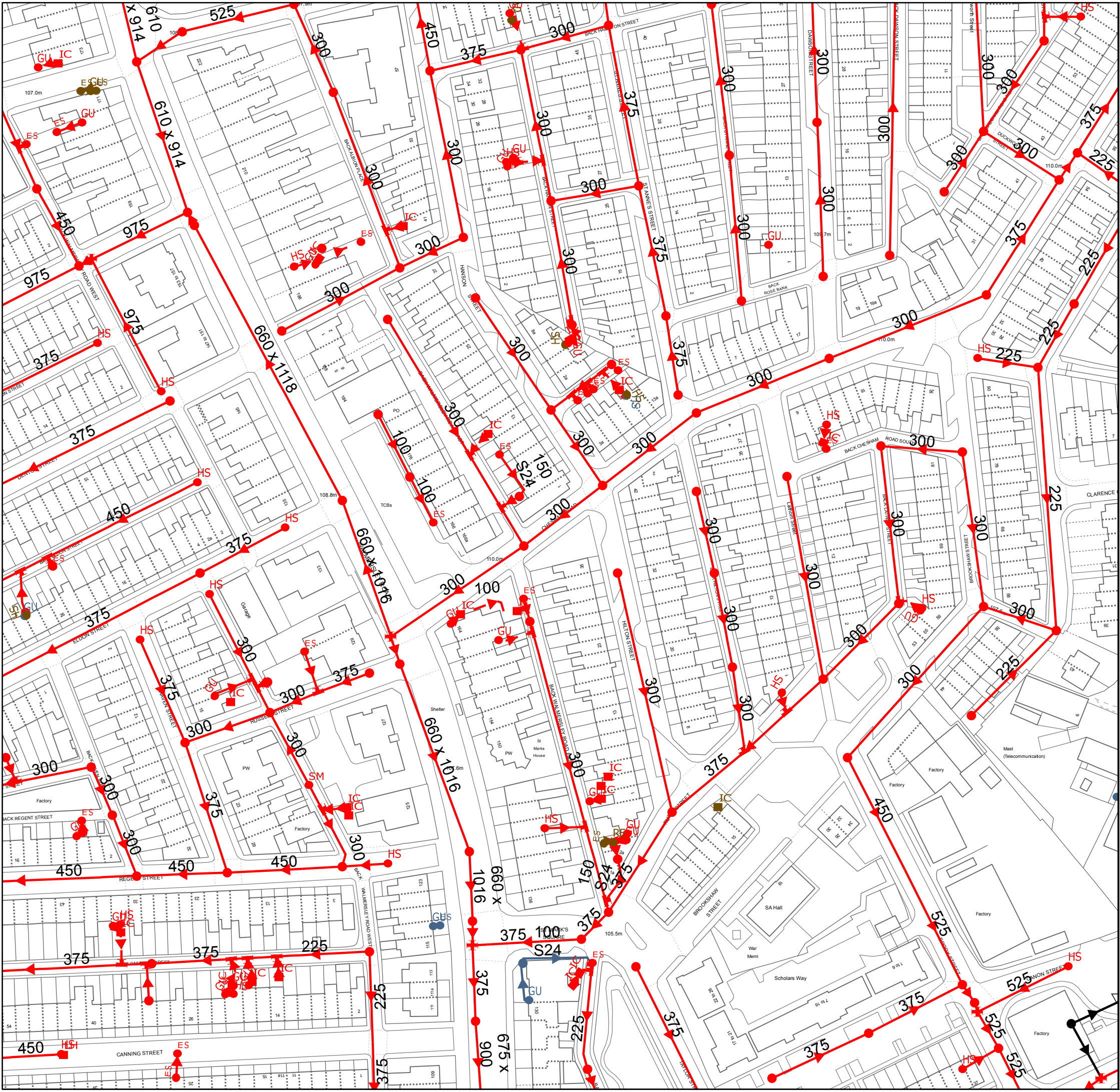
UNITED UTILITIES SEWER RECORDS

Wastewater Symbolology

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 **brown** - foul
blue – surface water **purple** - overflow

Manhole	Side Entry Manhole
Head of System	Outfall
Extent of Survey	Screen Chamber
Rodding Eye	Inspection Chamber
Inlet	Bifurcation Chamber
Discharge Point	Lamp Hole
Vortex	T Junction / Saddle
Penstock	Catchpit
Washout Chamber	Valve Chamber
Valve	Vent Column
Air Valve	Vortex Chamber
Non Return Valve	Penstock Chamber
Soakaway	Network Storage Tank
Gully	Sewer Overflow
Cascade	Ww Treatment Works
Flow Meter	Ww Pumping Station
Hatch Box	Septic Tank
Oil Interceptor	Control Kiosk
Summit	
Drop Shaft	Change of Characteristic
Orifice Plate	



Extract from Map of Sewer Mains

The position of underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. The actual positions may be different from those shown on the plan and private pipes, sewers or drains may not be recorded. United Utilities Water PLC will not accept any liability for any damage caused by the actual positions being different from those shown.

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35 HILTON STREET, BURY, BL9 6LT

Printed By: Property Searches Date: 15/07/2025

DO NOT SCALE
Approximate Scale: 1:1250

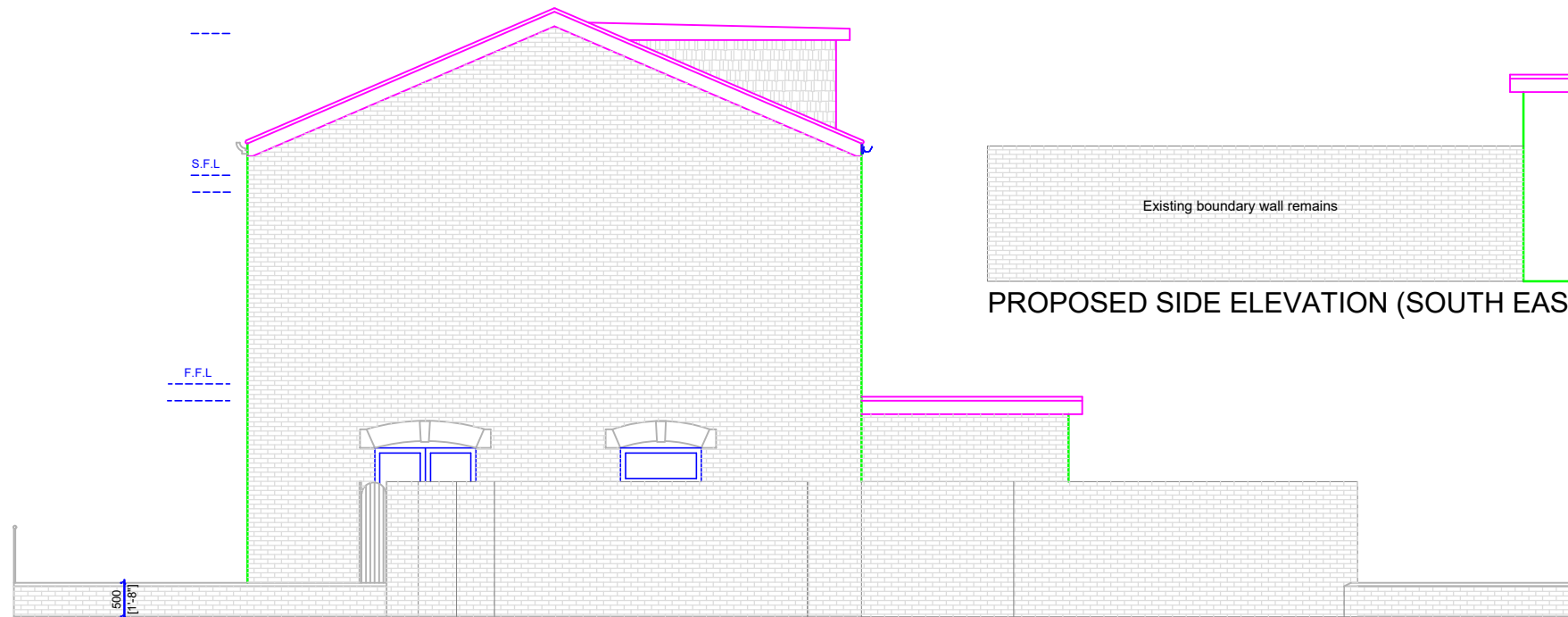


APPENDIX D

ARCHITECTURAL PLANS



PROPOSED SIDE ELEVATION (SOUTH EAST) Incl. Boundary (Boundary treatment)



PROPOSED SIDE ELEVATION (NORTH WEST) Incl. Boundary (Boundary treatment)



PROPOSED REAR ELEVATION
Incl. Boundary (Boundary treatment)



PROPOSED FRONT ELEVATION Incl. Boundary (Boundary treatment)

NOTES:

- Walls to be finish with bricks to match adjoining property
- Roof tiles to be Natural slates to match surroundings
- Windows to be double glazed uPVC in black colour
- External doors to be uPVC in black colour to match windows
- Rainwater goods to be 114mm Square Plastic Gutter in black colour to match surroundings
- Rear garden boundary treatment brick wall to match adjoin property
- Rear garden gate to be wooden gate
- Front and side garden boundary to be metal fence finish with black paint on stone effect base to match adjoin property

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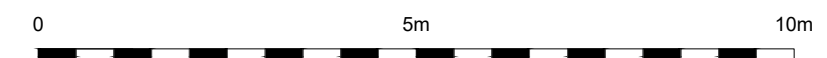
All dimensions are to be checked on site prior to construction, manufacture of any components and ordering of materials and equipment.

Any discrepancies are to be reported to the architects for clarification.

All materials and workmanship to be accordance with the current British Standards and codes of practice.

This drawing is to be read in conjunction with all relevant Architectural Structural Engineers, Mechanical Engineers, Electrical Engineers and Specialists drawings and specifications.

I Planning Services email: ipsuk@live.co.uk		2A Cook Street, Bury, Lancashire, BL9 0RP, 0161 8717405
Proposed Elevations Incl. Boundary of Land next to 35 Hilton Street, Bury, BL9 6LT		
Scale : 1 : 100 on A3	All Dimensions in Meters	
Ref.: IPS/R/35/BL96LT	Date : 16/06/2022	
REV F Date: 24/07/2023	Proposal	
SHT 9 of 9		



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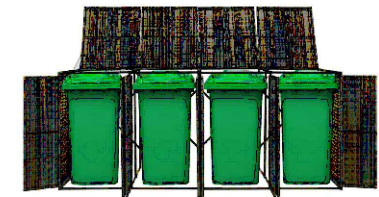
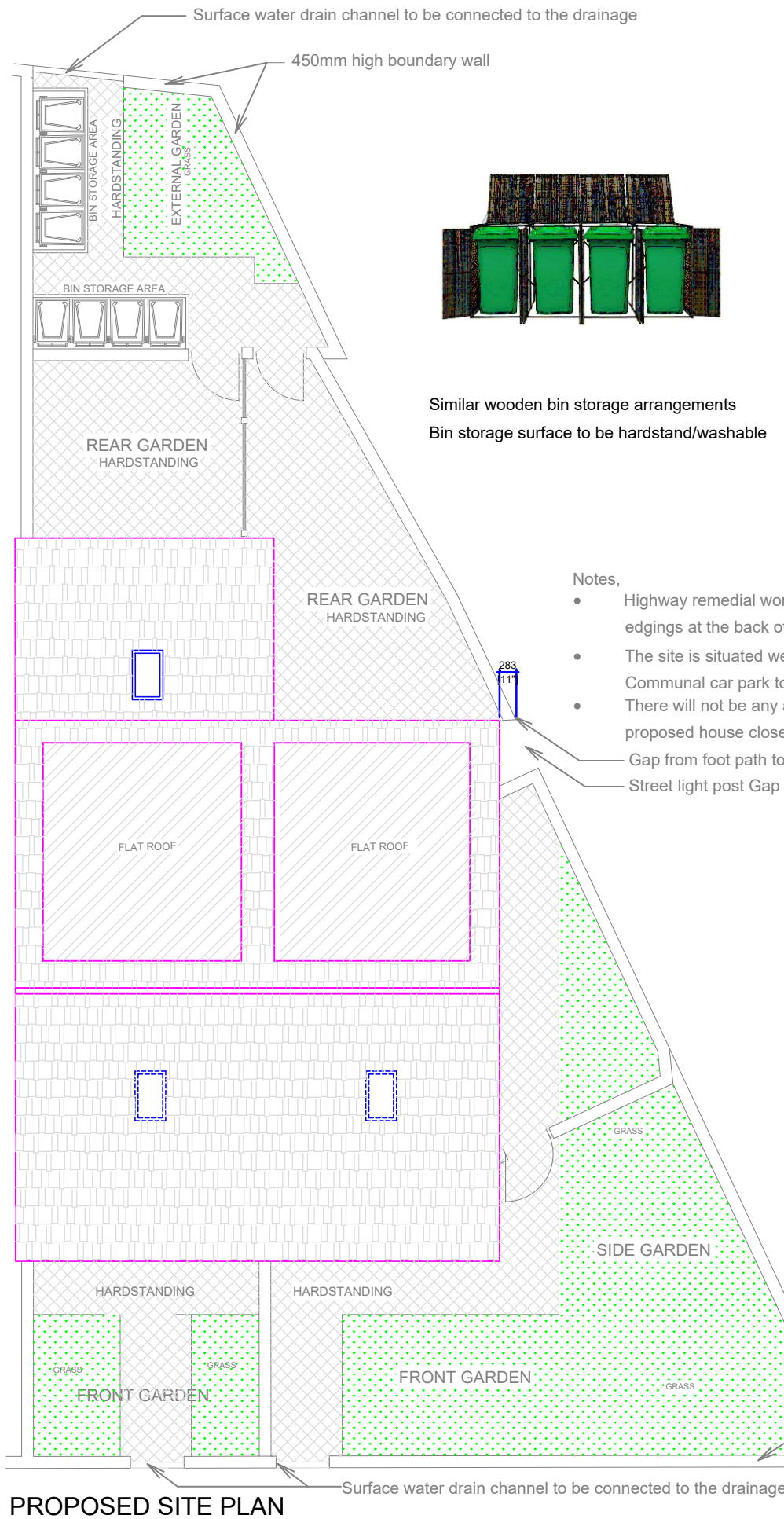
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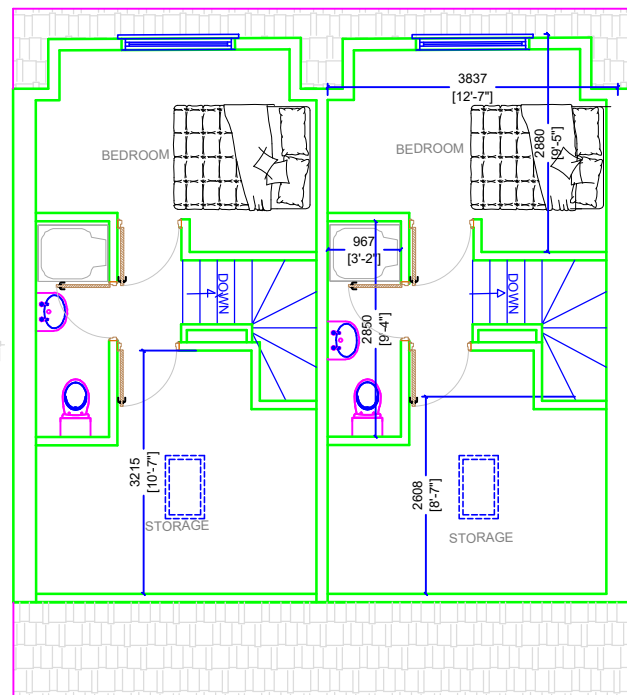
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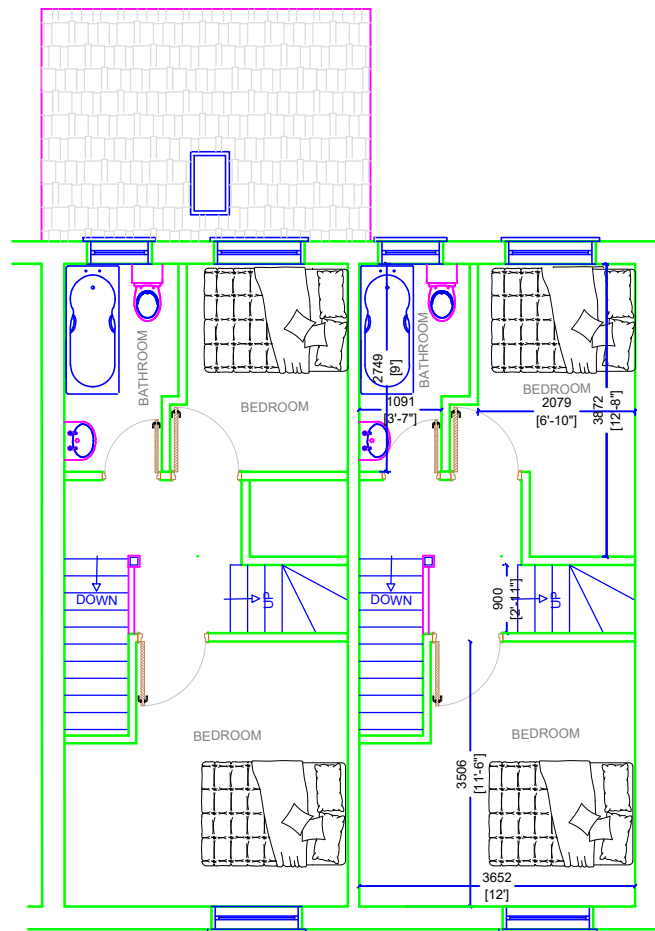


Similar wooden bin storage arrangements
Bin storage surface to be hardstand/washable

- Notes,
- Highway remedial works around the perimeter of the site will be required to expose/reintroduce edgings at the back of the footway to demarcate the limits of the adopted highway.
 - The site is situated where there is no restriction to the highway in front, there is a communal car park to the front, also a bus route is on walking distance.
 - There will not be any above or under footpath with adopted highway due to the distance between proposed house closest corner and footpath
- Gap from foot path to avoid encroachment
- Street light post Gap surface to match with footpath (Asphalt)



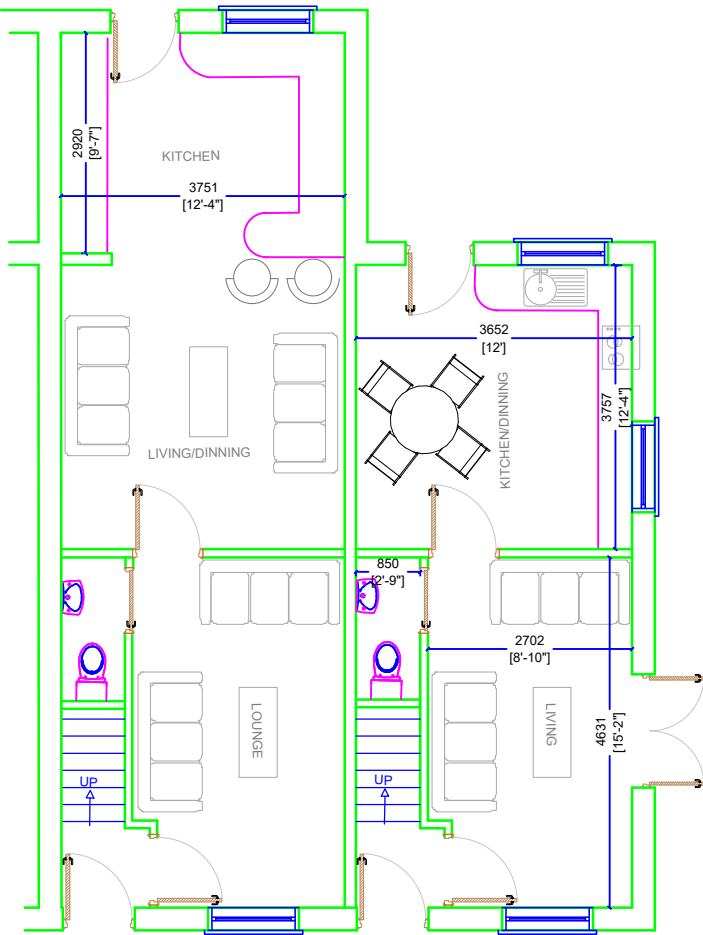
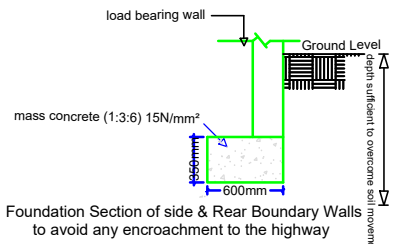
PROPOSED SECOND FLOOR PLAN



PROPOSED FIRST FLOOR PLAN

- STEEL BEAMS
- WALLS
- DIMENSION
- WINDOWS
- KITCHEN SURFACES
- DOOR

- NOTES:
- Walls to be finished with bricks to match adjoining property
 - Roof tiles to be Natural slates to match surroundings
 - Windows to be double glazed uPVC in black colour
 - External doors to be uPVC in black colour to match windows
 - Rainwater goods to be 114mm Square Plastic Gutter in black colour to match surroundings
 - Rear garden boundary treatment brick wall to match adjoining property
 - Rear garden gate to be wooden gate
 - Front and side garden boundary to be metal fence finish with black paint on stone effect base to match adjoining property



PROPOSED GROUND FLOOR PLAN

Planning Services
email: ipsuk@live.co.uk
2A Cook Street,
Bury, Lancashire,
BL9 0RP,
0161 8717405

Proposed Floor plans
of Land next to 35 Hilton Street, Bury, BL9 6LT

Scale : 1 : 100 on A3	All Dimensions in Meters
Ref: IPS/R/35/BL96LT	Date : 16/01/2023
REV F Date: 24/07/2023	Proposal
SHT 7 of 9	

0 5m 10m

APPENDIX E

BGS BOREHOLE LOGS



Norwest Holst Soil Engineering Ltd.						Borehole No. 7	
Contract No. F5563		BOREHOLE LOG		Sheet 1 of 1			
Location Hornby Street, Bury				Chainage			
Client Metropolitan Borough of Bury				Ground Level 107.450 m.A.O.D.			
Method of Boring Percussion		SD 81SW 205		Date 9/5/83			
Diameter of Borehole 150mm							
Description of Strata	Legend	Depth Below G.L.(m)	O.D. Level (m)	Casing Depth at Sampling	Sampling and Coring	"N"/ R.Q.D.%	Daily Progress
MADE GROUND: Tarmac		0.20	107.25				
MADE GROUND: Cobbly gravel.		0.80	106.65				
Firm mottled yellow-brown silty CLAY.		2.30	105.15		1.40		
Medium dense brown coarse SAND.		2.50	104.95		2.30	11	
Firm to stiff greyish-brown silty CLAY with occasional to some gravel.		6.30	101.15		3.50		
Greyish-brown weathered MUDSTONE.		6.80	100.65		5.00		
					6.30		
						*91 for 225mm	

Type of Sample	Remarks (Observations of Ground Water etc.)
S.P.T.	* Includes seating blows.
C.P.T.	Slight seepage at 3.20m.
Jar	Inspection pit dug to 1.20m.
Bulk	



Norwest Holst Soil Engineering Ltd.						Borehole No. 8	
Contract No. F5563		BOREHOLE LOG		Sheet 1 of 1			
Location Hornby Street, Bury				Chainage			
Client Metropolitan Borough of Bury		SD81SW 206		Ground Level 106.500 m.A.O.D.			
Method of Boring Percussion				Date 9/5/83			
Diameter of Borehole 150mm							
Description of Strata	Legend	Depth Below G.L. (m)	O.D. Level (m)	Casing Depth at Sampling	Sampling and Coring	"N"/R.Q.D.%	Daily Progress
MADE GROUND: Tarmac and cobbles.		0.20	106.30				
MADE GROUND: Gravel and ash		1.50	105.00				
MADE GROUND: Soft grey very silty slightly sandy clay and ash with occasional gravel.		2.50	104.00				
MADE GROUND: Soft grey silty sandy very gravelly CLAY, becoming a clayey gravel in places.		5.20	101.30	200mm to 6.00m		6	
Stiff brown very silty CLAY with occasional gravel.		6.50	100.00			2	
Grey weathered MUDSTONE.		7.00	99.50				

Type of Sample	Remarks (Observations of Ground Water etc.)
☒ S.P.T. ☐ Undisturbed	Water struck at 2.50m, moderate inflow, casing at 2.50m.
☒ C.P.T. ☒ Vane	Inspection pit dug to 1.20m.
☐ Jar ☐ Water	
☐ Bulk ☐ Piezometer	

Water levels are subject to seasonal or tidal variations and should not be taken as constant



Norwest Holst Soil Engineering Ltd.						Borehole No. 9	
BOREHOLE LOG				Sheet 1 of 1			
Contract No. F5563 Location Hornby Street, Bury Client Metropolitan Borough of Bury Method of Boring Percussion Diameter of Borehole 150mm				Ground Level 105.950 m.A.O.D. Date 17/5/83			
SD81SW 207				Chainage			
Description of Strata	Legend	Depth Below G.L. (m)	O.D. Level (m)	Casing Depth at Sampling	Sampling and Coring	"N"/R.Q.D.%	Daily Progress
MADE GROUND: Tarmac		0.04	105.91				
MADE GROUND: Stone sets.		0.20	105.75				
MADE GROUND: Topsoil, gravel, bricks, clay, ash and glass.		0.50	105.45				
Firm yellow-brown and grey mottled CLAY with occasional cobbles.		1.30	104.65	150mm to 3.20m	1.30		
Firm grey clayey fine sandy SILT with some coarse gravel and cobbles.		1.90	104.05		2.30		
Brown clayey silty SAND with much well rounded gravel and occasional cobbles.		2.20	103.75		3.30		
Stiff becoming very stiff brown silty CLAY with occasional gravel and sand pockets.		5.20	100.75		4.30		
Stiff brown silty CLAY with occasional gravel and cobbles.		7.00	98.95		5.30	31	
					6.50	34	
Type of Sample S.P.T. Undisturbed C.P.T. Vane Jar Water Bulk Piezometer Remarks (Observations of Ground Water etc.) Borehole dry during drilling. Inspection pit dug to 1.20m.							

Water levels are subject to seasonal or tidal variations and should not be taken as constant



Norwest Holst Soil Engineering Ltd.						Borehole No. 10	
Contract No. F5583		BOREHOLE LOG		Sheet 1 of 1			
Location Hornby Street, Bury				Chainage			
Client Metropolitan Borough of Bury		SD 81SW 208		Ground Level 105.000 m.A.O.D.			
Method of Boring Percussion				Date 17/5/83			
Diameter of Borehole 150mm							
Description of Strata	Legend	Depth Below G.L. (m)	O.D. Level (m)	Casing Depth at Sampling	Sampling and Coring	"N"/R.O.D.%	Daily Progress
MADEGROUND : 'Tarmac'		10.05	104.95				
MADEGROUND : Stone sets		0.22	104.78				
MADEGROUND : Topsoil, ashes, gravel, bricks, clay and glass.		0.67	104.33				
Medium dense mottled, yellow brown, clayey SAND & GRAVEL		1.40	103.60		1.30	17	
Medium dense brown clayey SAND & GRAVEL		1.80	103.20		c		
Very stiff brown silty CLAY with some fine to coarse gravel and small sand pockets.				150mm to 3.2m	2.30		
					3.30		
					4.30		
					5.30		
					6.40		
Grey mudstone BOULDER		7.00	98.00		6.50	* ~ 50 for 50mm	

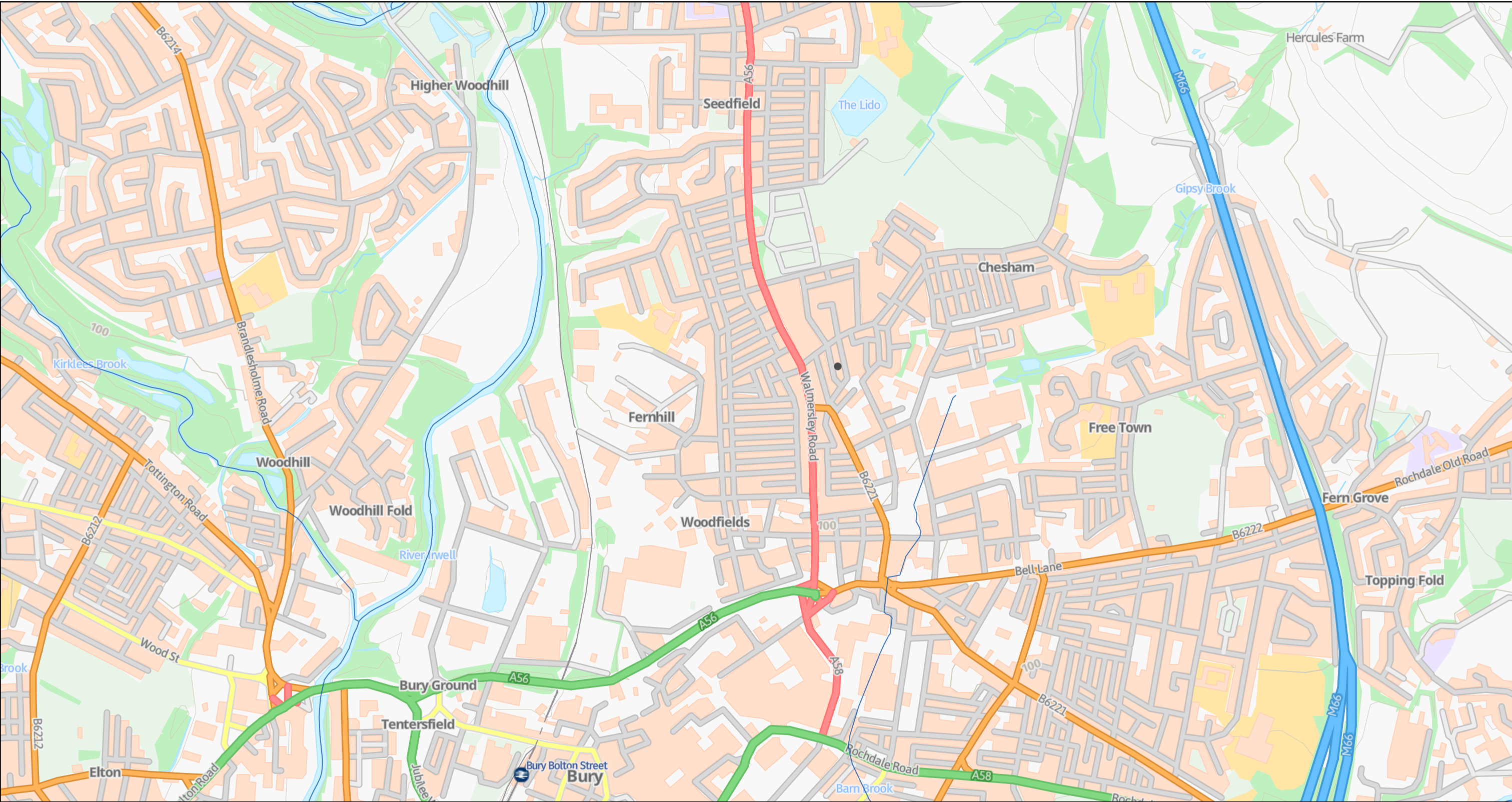
Type of Sample	Remarks (Observations of Ground Water etc.) * Seating blows only
☒ S.P.T. ☒ Undisturbed	Borehole dry during boring.
☒ C.P.T. ☒ Vane	
☒ Jar ☒ Water	Inspection pit dug to 1.2 m
☒ Bulk ☒ Piezometer	

Water levels are subject to seasonal or tidal variations and should not be taken as constant

APPENDIX F

ENVIROMENT AGENCY MAIN RIVER MAP

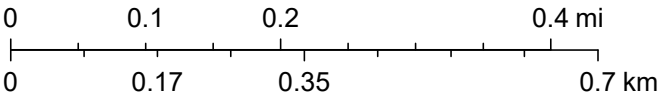
Main River Map: Rationalising Main River Network



30/08/2025, 19:28:28

— Statutory Main River Map

1:9,009



Contains OS data © Crown Copyright and database right 2023
Contains data from OS Zoomstack

APPENDIX G

FLOOD RISK SUMMARY

[Back to select an address](#)

Flood risk summary

Your selected location: 35, Hilton Street, Bury, BL9 6LT

This information tells you the flood risk of the land around a building, not the building itself.

► [How we assess an area's flood risk](#)

► [Flood risk and climate change](#)

Surface water

[More about your surface water flood risk \(/surface-water\)](#)

Yearly chance of flooding

Very low

Low

Medium

High

Yearly chance of flooding between 2040 and 2060

Very low

Low

Medium

High

What surface water is

Surface water flooding is sometimes known as flash flooding. It happens when rainwater cannot drain away through normal drainage systems.

► [Why surface water flooding is a problem](#)

Rivers and the sea

[More about your rivers and sea flood risk \(/rivers-and-sea\)](#)

Yearly chance of flooding

Very low

Low

Medium

High

Yearly chance of flooding between 2036 and 2069

Very low

Low

Medium

High

What makes rivers and sea flooding more likely

Low-lying areas that are close to rivers or the sea are more likely to flood when water levels rise.

This information takes into account any flood defences.

► [Why flood defences cannot completely prevent flooding](#)

Other flood risks

[More about groundwater and reservoirs \(/ground-water\)](#)

Groundwater

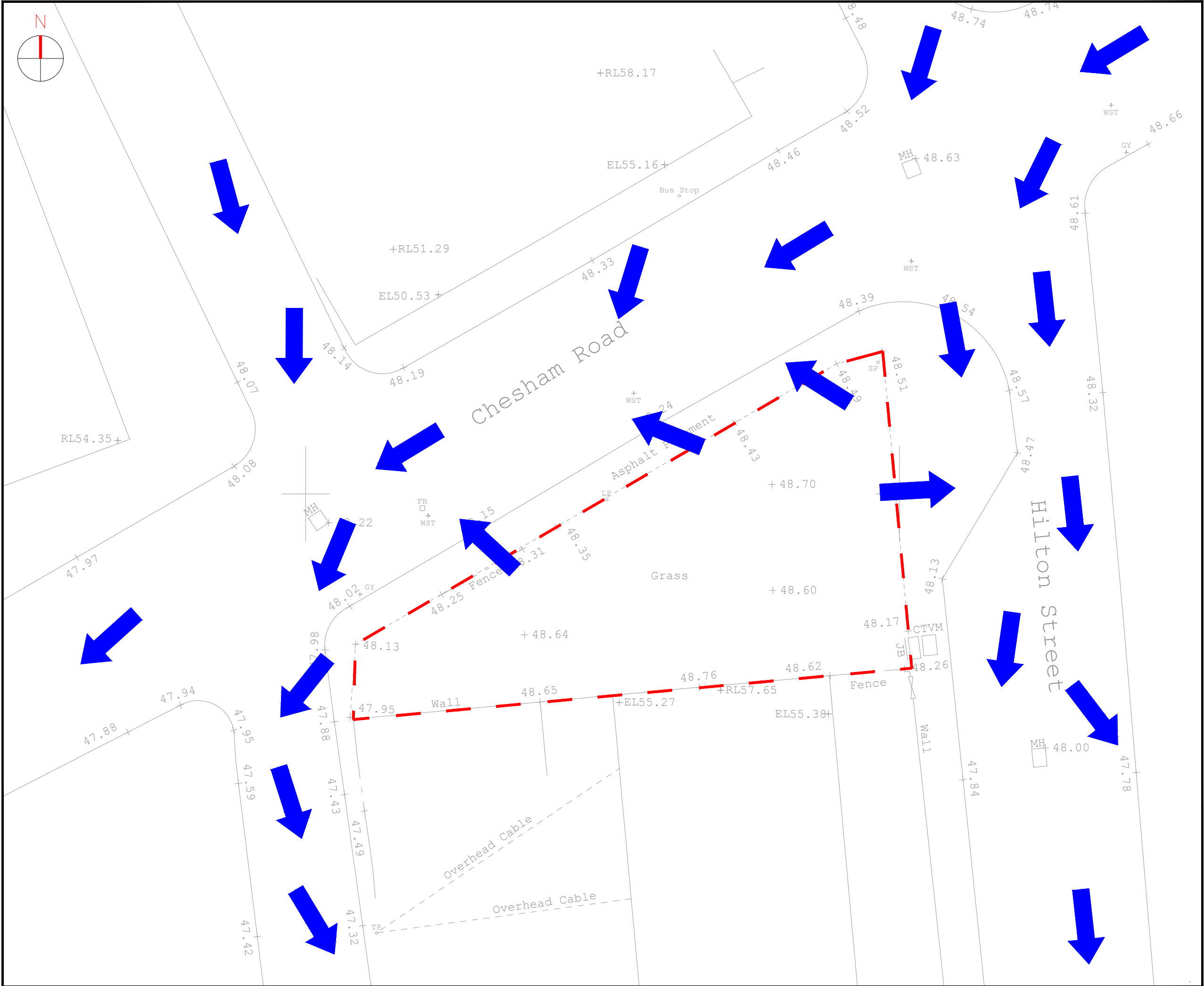
Flooding from groundwater is unlikely in this area.

Reservoirs

Flooding from reservoirs is unlikely in this area.

APPENDIX H

OVERLAND FLOW ROUTES



- NOTES**
- THIS DRAWING HAS BEEN PREPARED USING THIRD-PARTY INFORMATION. ASSETS SHOWN IN THIS TOPOGRAPHICAL SURVEY MAY NOT BE FULLY ACCURATE, AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL DETAILS ON SITE.
 - OVERLAND FLOW ROUTES ILLUSTRATED ARE BASED ON EXISTING TOPOGRAPHICAL INFORMATION AND ARE SHOWN INDICATIVELY. THIS REPRESENTS AN ASSUMED FLOW PATH AND ACTUAL ROUTES MAY VARY DUE TO SITE CONDITIONS THAT ARE CURRENTLY UNKNOWN, AND IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY LEVELS AND CONFIRM THE OVERLAND FLOW ROUTES ON SITE.

KEY

- SITE BOUNDARY EXTENT
- ➔ OVERLAND FLOW ROUTE



W: UrbanDesignSolutions.co.uk | M: 07399585609
E: enquiries@urbandesignsolutions.co.uk

PROJECT	LAND ADJACENT TO 35 HILTON ST, BURY
TITLE	OVERLAND FLOW ROUTES
DRAWING NO.	1906-UDS-XXX-DR-C-0502
SCALE	1:150 @ A3
REVISION	P01
ARCHITECT	I PLANNING SERVICES
STATUS	FOR INFORMATION
DRAWN	SM
CHECKED	SM
DATE	07/09/2025

APPENDIX I

DRAINAGE CALCULATIONS

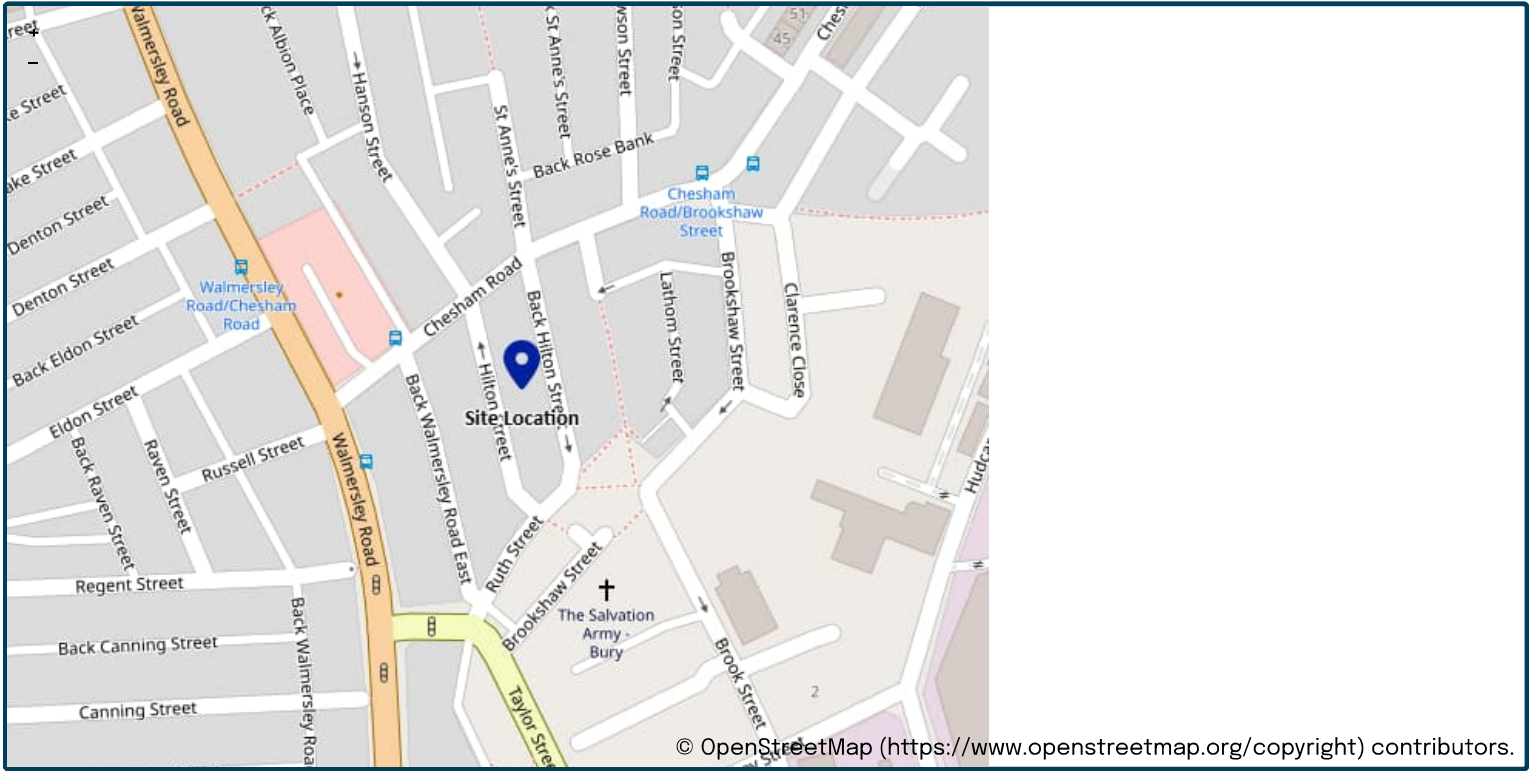
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). 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	16/07/2025
Calculated by	Subhaan Muhammad
Reference	001
Model version	2.0.1

Location

Site name	Land adjacent to 35 Hilton St
Site location	Bury



Site easting	380976
Site northing	411716

Site details

Total site area (ha)	0.021	ha
----------------------	------------------------------------	----

Greenfield runoff

Method

Method	IH124		
	<u>My value</u>		<u>Map value</u>
SAAR (mm)	1091mm		1091
How should SPR be derived?	WRAP soil type		
WRAP soil type	4		4
SPR	0.47		
QBar (IH124) (l/s)	0.17l/s		

Growth curve factors

	<u>My value</u>		<u>Map value</u>
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	IH124	
Flow rate 1 year (l/s)	0.15l/s	
Flow rate 2 year (l/s)	0.16l/s	
Flow rate 10 years (l/s)	0.24l/s	
Flow rate 30 years (l/s)	0.29l/s	
Flow rate 100 years (l/s)	0.35l/s	
Flow rate 200 years (l/s)	0.4l/s	

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.0.1) developed by HR Wallingford and available at [uksuds.com](https://www.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) (<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 J

PROPOSED DRAINAGE STRATEGY

APPENDIX K

TYPICAL DETAILS

DATE 07/09/2025

APPENDIX L

CONSULTATION



Land adjacent to 35 Hilton St,

From info@urbandesignsolutions.co.uk <info@urbandesignsolutions.co.uk>

Date Mon 2025-07-21 11:32 AM

To development.control@bury.gov.uk <development.control@bury.gov.uk>

Dear Bury District LLFA

A drainage and flood risk assessment are currently being prepared in support of a planning application for the proposed development of two residential dwellings on land situated adjacent to 35 Hilton Street, Bury, BL9 6LT. The site location plan is provided below for reference.



The site is situated within Environment Agency Flood Zone 1, indicating a low risk of surface water and river/sea flooding. With regard to the surface water, discharge will be restricted to greenfield runoff rates (QBAR), initial calculations based on the IH124 method indicates this to be approximately 0.17 l/s. The feasibility of ground infiltration will be assessed upon receipt of site-specific geotechnical information; however, based on initial observations, infiltration is currently considered unlikely.

Furthermore, It is anticipated that SuDS will be incorporated into the site design, with further assessment to determine the most appropriate type of SuDS feature.

Moreover, according to the United Utilities Sewer Maps, a combined sewer network exists in the vicinity of the site. Our preliminary proposal is to implement separate surface water and foul water drainage systems, discharging into the existing combined sewer network on either Hilton Street or Chesham Road, or both. The precise connection points to the existing manholes will be determined during the detailed design stage.

Could Bury District LLFA please confirm whether the outlined surface water and foul water drainage strategy proposals, including the discharge rates and points of connection, are acceptable in principle for the proposed development?

Additionally, could Bury District LLFA confirm whether there are any known existing watercourses within the vicinity of the proposed development, and whether there have been any recorded instances of historical flooding or potential future flood risk associated with these watercourses? We would appreciate it if any relevant information could be provided.

Kind Regards

Subhaan Muhammad

Urban Design Solutions | Civil Engineer

Based in Northwest | **M** +44(0)7399 585609

Confidential

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