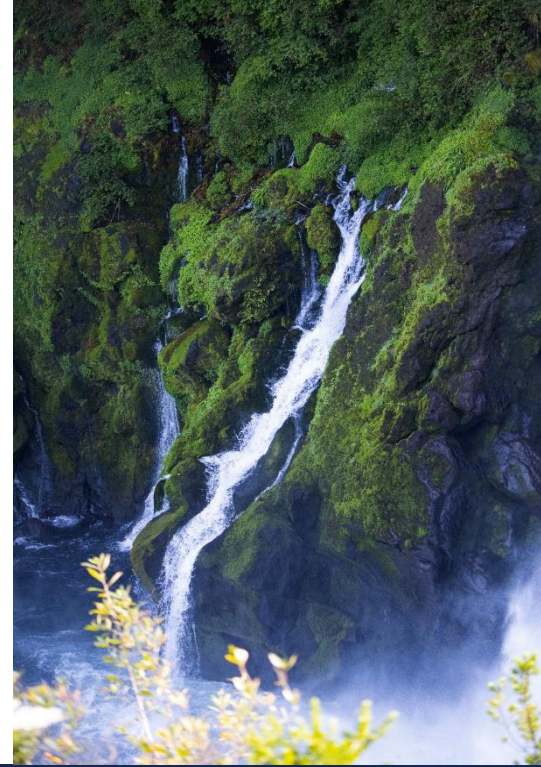




Surface Water and Foul Water Drainage Strategy AEG10943_OL10_Rochdale_07

Site Address: Site Adjacent to 33 Stanley Street
Heywood
Rochdale
OL10 1BH

UK Experts in Flood Modelling, Flood Risk
Assessments, and Surface Water Drainage Strategies



Document Issue Record

Project: Surface Water and Foul Water Drainage Strategy

Prepared for: D&A Sutor Bros Builders Limited

Reference: AEG10943_OL10_Rochdale_07

Site Location: Site Adjacent to 33 Stanley Street, Heywood, Rochdale, OL10 1BH

Issue	Date	Author	Check	Auth.	Comments
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1. Introduction

- 1.1. Aegaea were commissioned by D&A Sutor Bros Builders Limited to undertake a Surface Water Drainage Strategy (SWDS) and Foul Water Drainage Strategy (FWDS) to discharge Condition 4 associated with the planning permission granted for the proposed development (Ref 25/01114/FUL). It is understood that the Client has approval for the erection of 1no. attached dwelling. Condition 4 is outlined below:

Condition 4:

Notwithstanding any detail shown on the approved plans or provided with the application submission, no development shall take place until a scheme for the discharge of foul and surface water from the site (including surface water from hard landscaped areas and the parking area), has been submitted to and approved in writing by the Local Planning Authority. The surface water drainage scheme shall be based on the hierarchy of drainage options in the National Planning Practice Guidance, shall be accompanied by evidence of an assessment of the site conditions and shall accord with the Non-Statutory Technical Standards for Sustainable Drainage Systems (March 2015) or any subsequent replacement national standards. For the avoidance of doubt, foul and surface water shall be drained on separate systems. Details of how the drainage scheme will be maintained and managed after completion shall be provided. The duly approved scheme shall be implemented prior to first occupation of the development hereby permitted and retained as such thereafter

- 1.2. This SWDS and FWDS have been prepared in accordance with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance. The calculations and information contained within this report seek to address the drainage condition outlined above, as such the level of detail included is commensurate and subject to the nature of the proposals.

Site Overview

- 1.3. The site of the proposed development is Site Adjacent to 33 Stanley Street, Heywood, Rochdale, OL10 1BH (Figure 1).



Figure 1: Site Location (Base map and data from Google Hybrid ©)

- 1.4. It is understood that the proposed development is for the construction of a dwelling in the garden of an existing dwelling. The development proposals are presented in Appendix A.
- 1.5. In the absence of a topographical survey, Environment Agency Light Detection and Ranging (LiDAR) data Digital Terrain Model has been used to review the topography of the site. The EA LiDAR data shows the ground elevation of the site varies between approximately 118.61m AOD (Above Ordnance Datum) and 118.93m AOD (Figure 2).

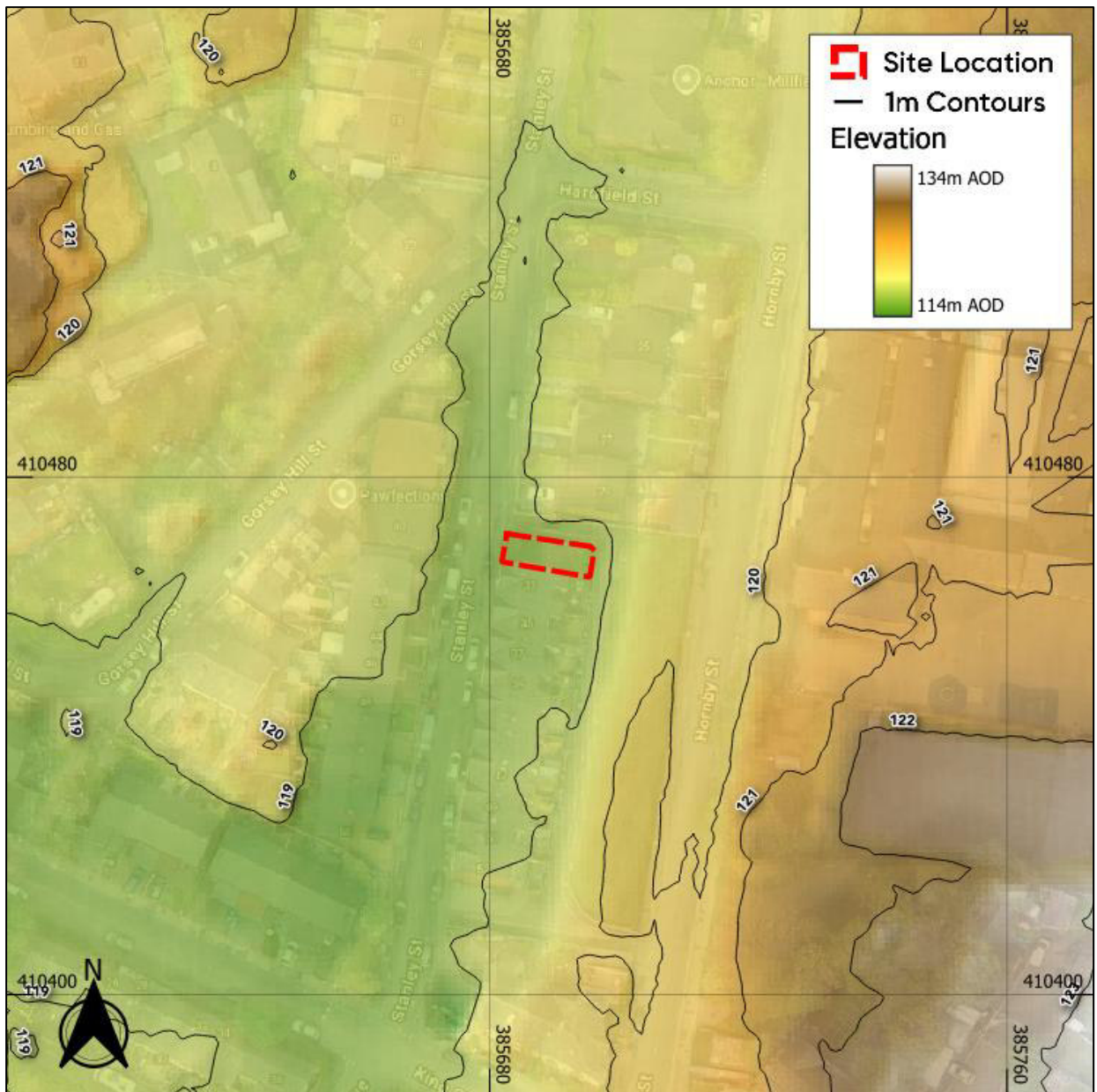


Figure 2: Site Topography (Base map and data from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

- 1.6. Rochdale Borough Council is the Local Planning Authority (LPA) for the site and also the designated Lead Local Flood Authority (LLFA). The site sits within the Environment Agency's Greater Manchester Merseyside and Cheshire region.

2. Planning Policy, Documents and Online Mapping

- 2.1. With ever-increasing urbanisation, the ability for precipitation to penetrate the hard paved surfaces to the groundwater below is inhibited. This results in increased flood risk, overstressed combined sewer infrastructure, and reduced ability to replenish aquifers. Sustainable Drainage Systems (SuDS) mitigate these issues by replicating natural processes to manage rainfall.

National Planning Policy Framework (NPPF)

- 2.2. The National Planning Policy Framework¹ (NPPF) (MHCLG, 2024) which includes UK Government policy on development and flood risk states:

181. When determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:

- a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;*
- b) the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment;*
- c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;*
- d) any residual risk can be safely managed; and*
- e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan.*

National Standards for SuDS

- 2.3. Updates to the national planning policy have defined a framework for Sustainable Drainage Systems (SuDS). The new 'National Standards for SuDS'² was published on June 19th, 2025, and is used to inform this drainage strategy. There are seven key standards as follows;

¹ <https://www.gov.uk/guidance/national-planning-policy-framework>, last updated Dec 2024

² <https://www.gov.uk/government/publications/national-standards-for-sustainable-drainage-systems/national-standards-for-sustainable-drainage-systems-suds>

- **Standard 1 Runoff Destination:** The drainage hierarchy now prioritises water re-use followed by infiltration, before discharging to watercourses and sewers.
- **Standard 2 Management of Everyday Rainfall (interception):** The design must ensure that the first 5mm of rainfall from any event is managed within the site and does not leave the boundary.
- **Standard 3 Management of Extreme Rainfall and Flooding:** The SuDS must be designed to manage runoff from all extreme rainfall events, up to and including the 1 in 100-year return period (including an allowance for climate change).
- **Standard 4 Water Quality:** The system must be designed to prevent or mitigate the risk of surface water runoff pollution using SuDS management trains.
- **Standard 5 Amenity:** The SuDS should be designed to improve the aesthetic value of the development, demonstrating multifunctional solutions where feasible.
- **Standard 6 Biodiversity:** The system should be designed to promote biodiversity using above ground SuDS where feasible.
- **Standard 7 Maintenance:** A clear plan must be provided for the long-term operation and maintenance of the SuDS to ensure it remains effective for the lifetime of the development.

Local Plan

- 2.4. The Local Plan prepared by the Local Planning Authority, Rochdale Borough Council, sets out the policies for development in the local area.
- 2.5. Policy JP-S4 Flood Risk and the Water Environment: Flood Risk outlines the requirements for new development within the area. It states:

An integrated catchment-based approach will be taken to protect the quantity and quality of water bodies with reference to the North West River Basin Management Plan and managing flood risk, by:

1. *Returning rivers to a more natural state, where practicable;*
2. *Working with natural processes and adopting a natural flood management approach to slow the speed of water drainage and intercept water pollutants;*
3. *Locating and designing development so as to minimise the impacts of current and future flood risk, including retrofitting or relocating existing developments, infrastructure and places to increase resilience to flooding; -*
4. *Expecting developments to manage surface water run-off through sustainable drainage systems and as close to source as possible. Development should achieve greenfield run-off rates unless it is demonstrated to be impracticable. District local plans should consider setting more detailed surface water drainage policies to reflect local circumstances, including alternative surface water discharge rates, such as in areas with critical drainage issues.*

Documents and Online Mapping

2.6. The following sources of information have been reviewed for this assessment:

- National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2024)
- Planning Practice Guidance - Flood Risk and Coastal Change (Ministry of Housing, Communities and Local Government, 2022)
- Geoindex Onshore (British Geological Survey, 2024)
- Rochdale Borough Local Plan (2024)³
- CIRIA SuDS Manual⁴ (2015)
- Soilsdapes Online Soil Mapping⁵

CIRIA C753 SuDS Manual

2.7. The CIRIA SuDS manual has been used throughout this SWDS in order to determine an appropriate strategy for the proposed development. This guidance covers the planning, design, construction and maintenance of Sustainable Drainage Systems (SuDS) to assist with their effective implementation within both new and existing developments. It looks at how to maximise amenity and biodiversity benefits and deliver the key objectives of managing flood risk and water quality. There is also supporting information covering topics such as materials, landscape design, maintenance, community engagement and costs and benefits.

³ <https://www.rochdale.gov.uk/planning-policy/local-plan>

⁴ https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductCode=C753F

⁵ <https://www.landis.org.uk/soilsdapes/>

3. Surface Water Drainage Strategy

Surface Water Drainage Hierarchy

- 3.1. In accordance with the SuDS management train approach, the use of various SuDS measures to reduce and control surface water flows have been considered in detail for the development in Table 1 below.
- 3.2. The management of surface water has been considered in respect to the SuDS hierarchy below, as detailed in the Statutory Guidance National standards for sustainable drainage systems (SuDS) (2025).

Table 1: SuDS Drainage Hierarchy

SuDS Drainage Hierarchy				
			Suitability	Comment
	1.	Collection for non-potable use	✓	Rainwater harvesting via water butts could be considered at downpipes, however, it is not essential to the SWDS and would be subject to developer specifications.
	2.	Infiltration	x	The British Geological Survey's (BGS) mapping shows superficial deposits of Glaciofluvial deposits, Devensian comprised of sand and gravel underlying the site. The bedrock underlying the site is mapped as Pennine Lower Coal Measures Formation comprised of mudstone, siltstone and sandstone. Infiltration testing was undertaken as part of a separate development to the rear of the proposed development, which has since been approved (Ref 23/01382/FUL). This showed low permeability of the ground and considered infiltration inappropriate at that location. Due to the proximity to the application site, the ground conditions are likely very similar to the site, and it is assumed that infiltration potential would therefore be alike. Furthermore, soakaways require a minimum of 5m from any proposed and existing buildings. The space available in the site for attenuation is limited, and such an easement could not be accommodated. This therefore precludes infiltration as a means of surface water disposal.
	3.	Discharge to surface waters	x	There are no watercourses within suitable vicinity of the site that could be discharged to.

	4.	Discharge to surface water sewer, highway drain or similar	x	A surface water manhole and pipe were identified by the CCTV survey undertaken; however it appears that the manhole does not have any inflows and the pipe is directed beneath the neighbouring dwelling. There is no clear indication of the possible wider system beyond this, and as such it is not considered appropriate to connect into this manhole. The CCTV outputs are contained in Appendix B. There are no surface water sewers in the vicinity of the site according to United Utilities asset plans (Appendix C).
	5.	Discharge to combined sewer	✓	A public combined sewer is located to the rear of the site, which follows around to the north of the site onto Stanley Street. The sewer asset plans indicate an existing connection point within the site, to which it is proposed to connect into. This would be subject to a Section 106 Connection Application and confirmation of capacity.

- 3.3. On review of the SuDS drainage hierarchy, the site's constraints and opportunities, and with reference to both national and local policy, it is proposed that the surface water runoff from the development is discharged to the combined sewer via the onsite connection point.

SuDS Design Considerations

- 3.4. Following a review of the available SuDS options, and taking into account the site's constraints and opportunities, it is proposed that surface water runoff from the proposed development will be managed via a below ground geocellular attenuation crate system, prior to being discharged to the combined sewer.
- 3.5. A rainwater SuDS planter and water butt are also proposed at downpipes, the SuDS planter to promote treatment of runoff and the water butt to encourage water reuse. These would also be expected to provide some further small-scale attenuation, however have not been included in the model design to provide a conservative approach. The planter would also provide enhancements to the biodiversity and amenity aspects of the site.
- 3.6. The proposed Surface Water Drainage Layout is included as Appendix D.

Infiltration Potential

- 3.7. The British Geological Survey's (BGS) mapping shows superficial deposits of Glaciofluvial deposits, Devensian comprised of sand and gravel underlying the site. The bedrock underlying the site is mapped as Pennine Lower Coal Measures Formation comprised of mudstone, siltstone and sandstone.
- 3.8. Infiltration testing was undertaken as part of a separate development to the rear of the proposed development, which has since been approved (Ref 23/01382/FUL). This showed low permeability of the ground and considered infiltration inappropriate at that location. Due to the proximity of this to the

application site, the ground conditions are likely very similar, and as such it is assumed that infiltration potential would therefore be alike.

- 3.9. Furthermore, soakaways require a minimum of 5m from any proposed and existing buildings. The space available in the site for attenuation is limited, and such an easement could not be accommodated. This therefore precludes infiltration as a means of surface water disposal.

Watercourses

- 3.10. There are no watercourses within reasonable vicinity of the site that could be discharged to.

CCTV Survey

- 3.11. The CCTV survey undertaken (Appendix B) identified the presence of a shallow surface water manhole A and pipe within the site, however it appears that the manhole is somewhat incomplete and does not have any inflows. The outgoing pipe is directed beneath the neighbouring dwelling. There is no clear indication of the possible wider system beyond this, and as such it is not considered appropriate to connect into this manhole. There is no record of public surface water sewers at this location according to the United Utilities asset plan in Appendix C. The CCTV outputs are contained in Appendix B.

Sewers

- 3.12. The asset plan contained in Appendix C shows that a public combined sewer is directed north to the rear of the site. It then follows around the shared access to Stanley Street. An existing connection from within the site is indicated by the sewer records. It is proposed to connect into this sewer via the onsite connection point. This is subject to a Section 106 Connection Application and confirmation of capacity.

Existing and Proposed Runoff Rate

Greenfield Runoff Rates

- 3.13. These calculations account for the roof area, which has a total impermeable area of circa 0.005ha.
- 3.14. To determine the required outflow rate for the proposed surface water drainage strategy, the greenfield runoff rate for the total proposed impermeable area of the site has been calculated using the IH124 method (via the ICP SuDS variation) within InfoDrainage Software v2026.4.
- 3.15. The IH124 method was developed as part of the original Flood Studies Report (FSR) in 1975 and was devised to calculate runoff from small catchments by estimating the mean annual flood flow (Q_{bar}) using the following equation:

$$Q_{bar}_{rural} = 0.00108(0.1 \times AREA)^{0.89} \times SAAR^{1.17} \times SPR^{2.17} m^3/s$$

Where:

Q_{bar}_{rural} is the mean annual flood flow from a rural catchment (approximately 2.3 year return period).

$AREA$ is the area of the hardstanding surfaces in ha.

SAAR is the Standard Average Annual Rainfall for the period 1941 to 1970 in mm.

SPR is Standard Percentage Runoff coefficient for the SOIL category. The SOIL category is extracted from UK Winter Rainfall Acceptance Potential (WRAP) map.

- 3.16. The ICP SuDS variation is a scaled-down version of the IH124 runoff method for estimating peak flow rates from both undeveloped and partly urbanised catchments that are smaller than 50 ha in size, which is appropriate in this instance.
- 3.17. The parameters used for estimating the greenfield runoff rates for the site are presented in Table 2.

Table 2: ICP SuDS Input Parameters

Greenfield runoff rates from the site – simulation criteria	
Methodology	ICP SuDS
Area	0.005
SAAR	1117.0
SOIL	0.47
Region	Region 10

- 3.18. Table 3 displays the estimated greenfield runoff rates for the proposed site area of 0.005ha.

Table 3: Greenfield Runoff Rates *rates less than 0.1l/s are rounded to 0.0l/s in InfoDrainage

Return Period	Greenfield Runoff Rate
1 in 1 Year	0.0
Q_{BAR} (approx. 1 in 2.33 Year)	0.0
1 in 30 Year	0.1
1 in 100 Year	0.1

- 3.19. Due to the increased risk of blockage and sedimentation, it will not be possible to restrict flows to the greenfield runoff rate. The proposed attenuation has been maximised within the site to achieve as low a rate as possible given the space constraints. In view of this, a 15mm orifice outlet is proposed at the outlet of the crate system, which is the smallest feasible sized orifice in accordance with the CIRIA C753 The SuDS Manual. The maximum discharge rate from this is 0.4l/s in the critical storm.

InfoDrainage Modelling and Results

- 3.20. InfoDrainage Software (v2026.4) was used to simulate the network model for the proposed surface water drainage strategy.
- 3.21. The total proposed impermeable area being managed was calculated to be 0.005ha of roof areas and access/parking areas. A 10% urban creep allowance has been applied to this area, due to the residential nature of the proposed development.
- 3.22. The model comprises:
- 1no. contributing catchment area to represent the proposed roof area. The catchment location is outlined on the proposed SWDS in Appendix D and further details of the catchment are included in Appendix E.

- 1no. online geocellular attenuation crate system - Wavin Aquacell or similar approved. Modelled with 95% porosity. The dimensions of the tank are modelled as 2.0m long, 1.5m wide, and 0.8m deep. The attenuation provided is 3.28m³. The system is modelled with a 15mm orifice plate outlet, restricting flows to a maximum of 0.4l/s in the critical storm.
- The SuDS Planter and water butt have not been included in the design to provide a conservative approach, however would be expected to provide some small-scale attenuation if used.

3.23. Table 4 summarises the simulation criteria for the InfoDrainage model.

Table 4: Simulation Parameters

Catchment Area Simulation Parameters	
Rainfall Data	FEH22
Total Area	0.005ha
Return Periods	2, 30, 30+40% for climate change, 100, 100 +45% for Climate Change. Summer and Winter
Storm Durations	15, 30, 60, 120, 240, 360, 480, 960, 1440, minute
Volumetric Runoff Coefficient	Roof - 1.0 (summer and winter storms)
Percentage Impervious	100%
Time of Concentration	5 minutes

3.24. The Environment Agency Peak Rainfall Climate Change Allowance guidance (updated in May 2022) was reviewed and subsequently the DEFRA Peak Rainfall Allowances Map was assessed to determine appropriate climate change allowances to inform the surface water drainage strategy. In line with this guidance, the upper end allowances for the Irwell Management Catchment have been used for both the 1% and 3.3% annual exceedance probability events. An allowance of 40% has been used for the 3.3% AEP event and an allowance of 45% has been used for the 1% AEP event.

InfoDrainage Results

- 3.25. The full calculation outputs can be found in Appendix E of this report although the 1 in 100 year + 45% climate change results for the proposed tank and SuDS Planters have been summarised below:
- The maximum depth within the 0.8m deep geocellular storage for a 1 in 100-year plus 45% climate change critical storm (60 mins, summer) is 0.757m.
 - The maximum flow rate leaving the site via the proposed system is 0.4l/s.
- 3.26. As such, these results indicate that the runoff from the proposed development could be accommodated within a drainage system of the approximate size modelled.

3.27. Standard 2 of the latest (2025) National standards for sustainable drainage systems (SuDS)⁶ states:

2.1 Apply a 'SuDS approach' so that at least the first 5mm of rainfall for the majority of rainfall events does not result in runoff from the site to surface waters or piped drainage systems.

2.2 Evidence shall be provided that the approach to managing runoff from 'everyday' rainfall has been developed alongside and in support of the management of runoff quality (standard 4) and the delivery of amenity and biodiversity benefits (standards 5 and 6).

3.28. Given the constrained site area, the provision of green SuDS has been maximised through the use of a SuDS Planter. This will provide a significant betterment in terms of first flush, water quality, amenity, and biodiversity, compared to existing conditions.

Maintenance

3.29. Tables 5 and 6 present the details regarding the maintenance requirements for the proposed SuDS included as part of the development taken from the CIRIA C753 'The SuDS Manual'. Each manufacturer will have bespoke requirements, however, the below should be used as a guide.

⁶ <https://www.gov.uk/government/publications/national-standards-for-sustainable-drainage-systems/national-standards-for-sustainable-drainage-systems-suds>

Table 5: Maintenance Requirements for Geocellular Systems

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inspect and identify any area that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually
	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, overflows and vents	As required
Monitoring	Inspect/ check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually
	Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required

Table 6: Maintenance Requirements for Bioretention Systems (SuDS Planter)

Maintenance Schedule	Required Action	Typical Frequency
Bioretention Systems		
Regular Maintenance	Inspect infiltration surfaces for silting and ponding, record de-watering time of the facility and assess standing water levels in underdrain (if appropriate) to determine if maintenance is necessary	Quarterly
	Check operation of underdrains by inspection of flows after rain	Annually
	Assess plants for disease infection, poor growth, invasive species etc and replace as necessary	Quarterly
	Inspect inlets and outlets for blockage	Quarterly

Maintenance Schedule	Required Action	Typical Frequency
	Remove litter and surface debris and weeds	Quarterly
	Replace any plants, to maintain planting density	As required
	Remove sediment, litter and debris build-up from around inlets or from forebays	Quarterly to biannually
Remedial Actions	Remove and replace filter medium and vegetation above	As required but likely to be > 20 years
Occasional Maintenance	Infill any holes or scour in the filter medium, improve erosion protection if required	As required
	Repair minor accumulations of silt by raking away surface mulch, scarifying surface of medium and replacing mulch	As required

Table 7: Specific SuDS Maintenance Requirements for Water Butt (Source: CIRIA SuDS Manual)

Maintenance Schedule	Required Action	Typical Frequency
Water Butts		
Regular Maintenance	Check inflow and overflows - Visually inspect the downpipe connections, filters/diverters (if used), tap/spigot, and overflow pipe.	Monthly (or quarterly, depending on surrounding trees)
	Gutter inspection - Check and clear the gutters above the downpipe that feeds the water butt	Monthly (or quarterly, depending on surrounding trees)
	Monitor water level - Check that the water butt is being used (emptied) and refilling naturally.	Monthly (or quarterly, depending on surrounding trees)
	Internal cleaning - Empty the water butt completely and disconnect it from the downpipe. Use a long-handled brush, warm water, and a mild, non-toxic detergent to scrub the interior walls. Rinse thoroughly.	Bi-Annual (Twice per Year)
	Tap/Spigot Check - Dismantle the tap/spigot (if possible) and clean it to ensure it is free of sediment and working smoothly.	Bi-Annual (Twice per Year)
	External Inspection - Check the butt for cracks, leaks, or signs of instability (is the base still level and secure?). Ensure the lid is tight.	Bi-Annual (Twice per Year)
Remedial Actions	If Water flow from the tap becomes very slow, or water has a strong odour. Perform the full Bi-Annual clean and focus on removing sludge from the bottom, which is the likely cause of the issue.	As required
	Before a period of prolonged frost is expected. Either drain the butt completely or leave the tap open slightly to allow any water freezing at the base to drain, preventing the plastic from cracking due to ice expansion.	As required
	After a heavy storm or periods of high leaf-fall. Clean any internal filters or first-flush diverters used in the system to ensure debris is not hindering flow into the butt.	As required

Designing for Exceedance

- 3.30. Exceedance events are those greater than the design rainfall event, i.e. greater than the 100-year rainfall event plus 45% increase for climate change.
- 3.31. Periods of exceedance occur when the rate of surface water runoff exceeds the drainage system capacity. Conveyance beneath ground cannot, generally, be economically or sustainably constructed to the scale required for the most extreme rainfall events. This may result, on occasion, in the surface water runoff exceeding the capacity of the drainage network, with excess water (exceedance flow) being conveyed above ground.
- 3.32. For situations where extreme rainfall intensity exceeds inlet capacities, or for extreme storm events exceeding the design flood event considered for drainage design, the surface water exceedance from the planters or the attenuation crates should be directed via a high-level overflow to the public sewer. It should be noted that in the critical storm, a further 34% of attenuation is available in the crate system, provide further storage for exceedance flows if required. External levels should also be sloped away from entrance thresholds, so flows would be directed into the highway system.

Water Quality

- 3.33. In order to protect the downstream receiving water body, a key element of SuDS is that they have the potential to improve the quality of surface water discharged from a site. In order to assess this, the “Pollution hazard indices for different land use classifications”, provided in table 26.2 of the CIRIA SuDS Manual (C753) has been reviewed. The indices use four different indicators for assessing pollution potential based on the hazard level, total suspended solids (TSS), Metals, and Hydrocarbons.
- 3.34. The Pollution Hazard Indices are summarised in Table 8 below (with reference to table 26.2 in the CIRIA SuDS manual). The pollution hazard indices for “residential roofing” have been used.

Table 8: Pollution Hazard Indices

Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Residential Roofs	Very Low	0.2	0.2	0.05

- 3.35. Table 9 shows that the proposed SuDS planter (using Bioretention Indices) shows sufficient treatment of runoff from roofing. Silt traps will also be located at downpipes to provide further treatment and to prevent blockages.

Table 9: Pollution Mitigation Indices

SuDS Feature	Total Suspended Solids (TSS)	Metals	Hydrocarbons
SuDS Planters (Bioretention)	0.8	0.8	0.8

- 3.36. As such, the proposed drainage strategy should offer sufficient treatment of runoff from the proposed roof.

4. Foul Water Drainage Strategy

Sewers

- 4.1. United Utilities Asset Plans have been obtained and are contained in Appendix C. These show that there is an existing connection within the site to the public combined sewer which runs parallel to the eastern and northern site boundaries. There are no foul water sewers within reasonable distance of the site that could be utilised first, and as such it is proposed to connect into the combined sewer via the existing connection point.

Proposed Strategy

- 4.2. All surface water and foul water on site will remain separate.
- 4.3. The foul water flow rate calculations for the residential dwelling were calculated in accordance with Design and Construction Guidance (DCG) for Foul and Surface Water Sewers, Section B3.1.
- 4.4. Table 9 below shows the final foul flow rate for a residential development comprising of one dwelling is 0.046l/s.

Table 9: Commercial Foul Flow Rate Calculations in accordance with DCG for Foul and Surface Water Sewers.

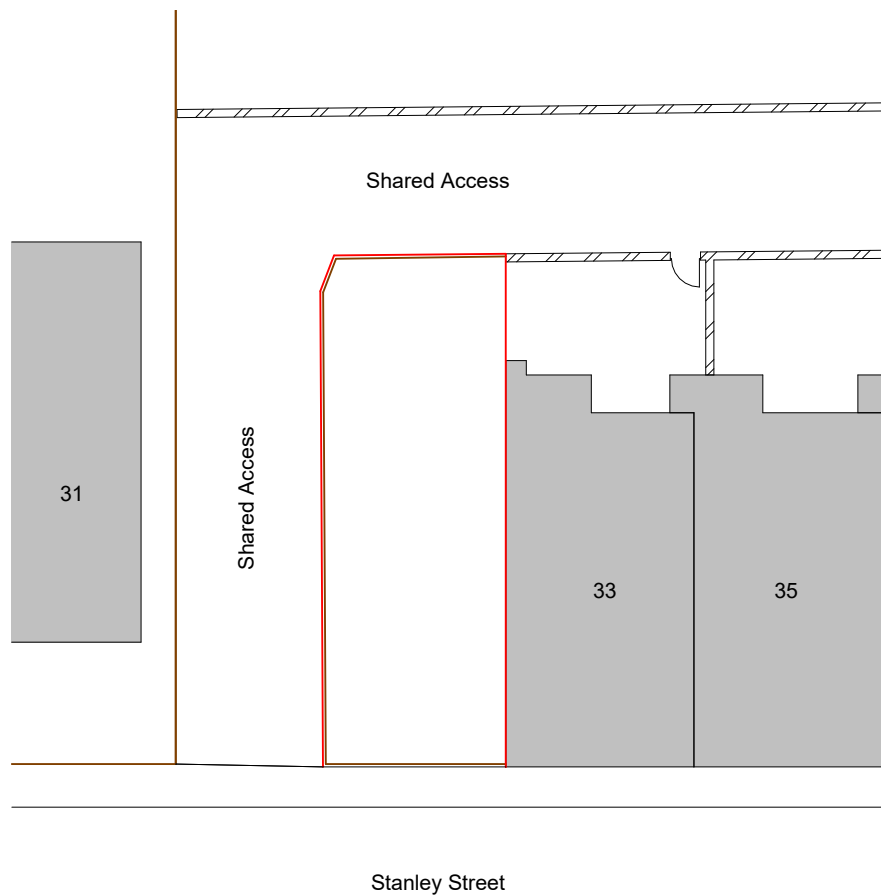
Parameter		Value
Residential		
Number of Properties		1
Peak Flows from Each Property		4000 (litres/property/day)
Combined Foul Flows		
0.046 l/s		

- 4.5. It is proposed to connect into the existing public combined sewer via the onsite connection. Based on the invert levels of downstream and upstream manholes from where the onsite connection adjoins the main sewer, it is believed that a gravity connection will be feasible. This connection is subject to confirmation of capacity from United Utilities. Any new connections required are subject to a Section 106 Connection Application made to United Utilities.
- 4.6. An indicative Foul water Drainage Strategy has been prepared and is included in Appendix D.

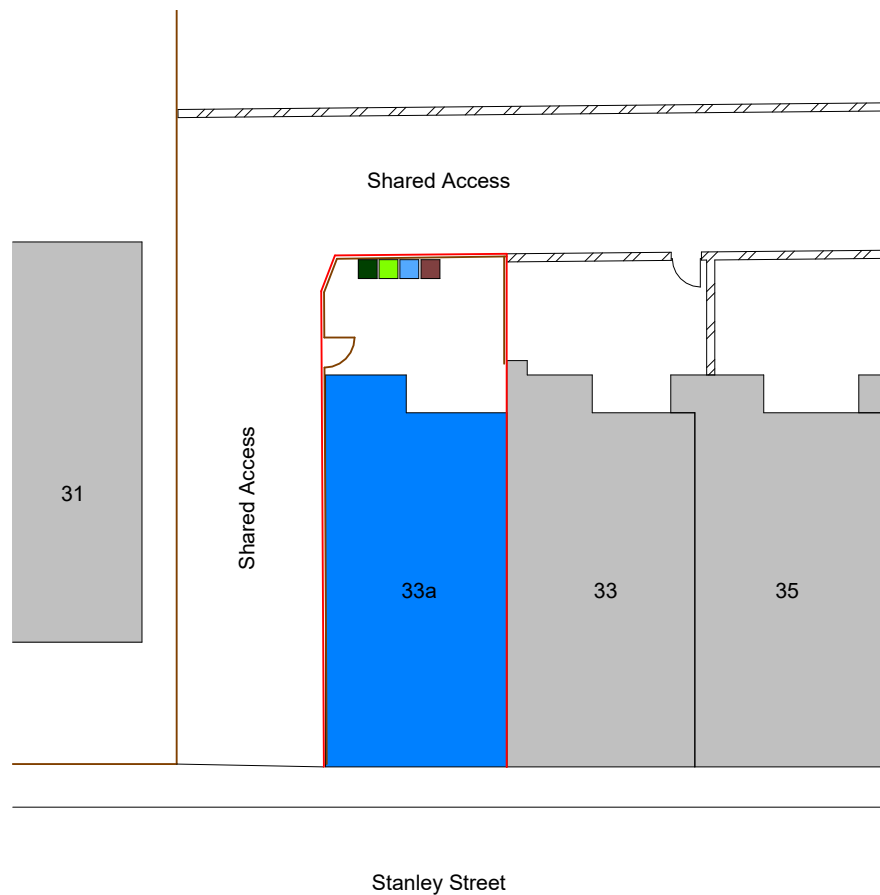
5. Conclusions

- 5.1. This SWDS and FWDS has been undertaken to discharge Condition 4 associated with the planning permission granted for the proposed development (Ref 25/01114/FUL).
- 5.2. On review of the SuDS drainage hierarchy, available SuDS options, taking into account the site's constraints and with reference to both national and local policy, it is proposed that the surface water runoff from the proposed development will be managed via below-ground geocellular attenuation crates, discharging to the public combined sewer via the onsite connection point. It is believed a gravity connection will be possible. A water butt and SuDS planter are also proposed at downpipes for water reuse and biodiversity and amenity enhancements.
- 5.3. The 1 in 100 year + 45% climate change results for the proposed tank and SuDS Planters have been summarised below:
 - The maximum depth within the 0.8m deep geocellular storage for a 1 in 100-year plus 45% climate change critical storm (60 mins, summer) is 0.757m.
 - The maximum flow rate leaving the site via the proposed system is 0.4l/s.
- 5.4. As such, these results indicate that the runoff from the proposed development could be accommodated within a drainage system of the approximate size modelled.
- 5.5. It is proposed to discharge foul flows to the public combined sewer at the same point of connection as surface water, via the onsite manhole. It is believed a gravity connection is feasible. This will be subject to confirmation of capacity and a Section 106 Connection Application made to United Utilities.
- 5.6. This SWDS and FWDS should be submitted as part of the Discharge of Condition application to satisfy the requirements of Condition 4, as outlined previously.

Appendix A - Development Proposals

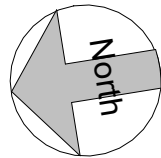


1 Site - Existing
1 : 200



2 Site - Proposed
1 : 200

- Site Key
- Grass
 - Paving Stones
 - Timber Fencing
 - Brickwork
 - Proposed Building
 - Waste Storage



PROJECT	Land Adjacent to 33 Stanley St	PROJECT NUMBER		DRAWING NUMBER		REV				
		GSS25066		502		1				
TITLE	Site - Existing & Proposed									
		DRAWN BY	CHECKED BY	DATE	SCALE (@ A1)					
STATUS	DESIGN	CB	SG	29/10/2025	As indicated	1 No.	Planning Description	21/11/2025 Date	CB Initial	

GOLD SKETCH

S T U D I O S

www.goldsketch.co.ukinfo@goldsketch.co.uk0161 792 9595

NOTES

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3 Street View - Existing



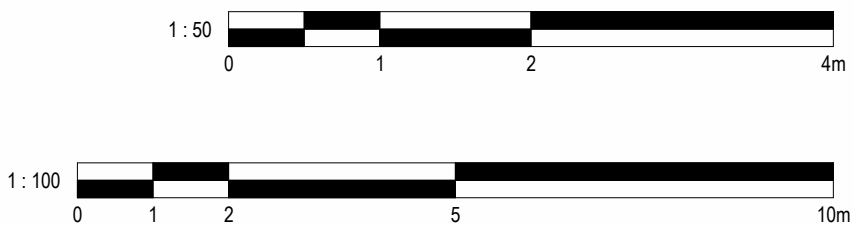
4 Street View - Proposed



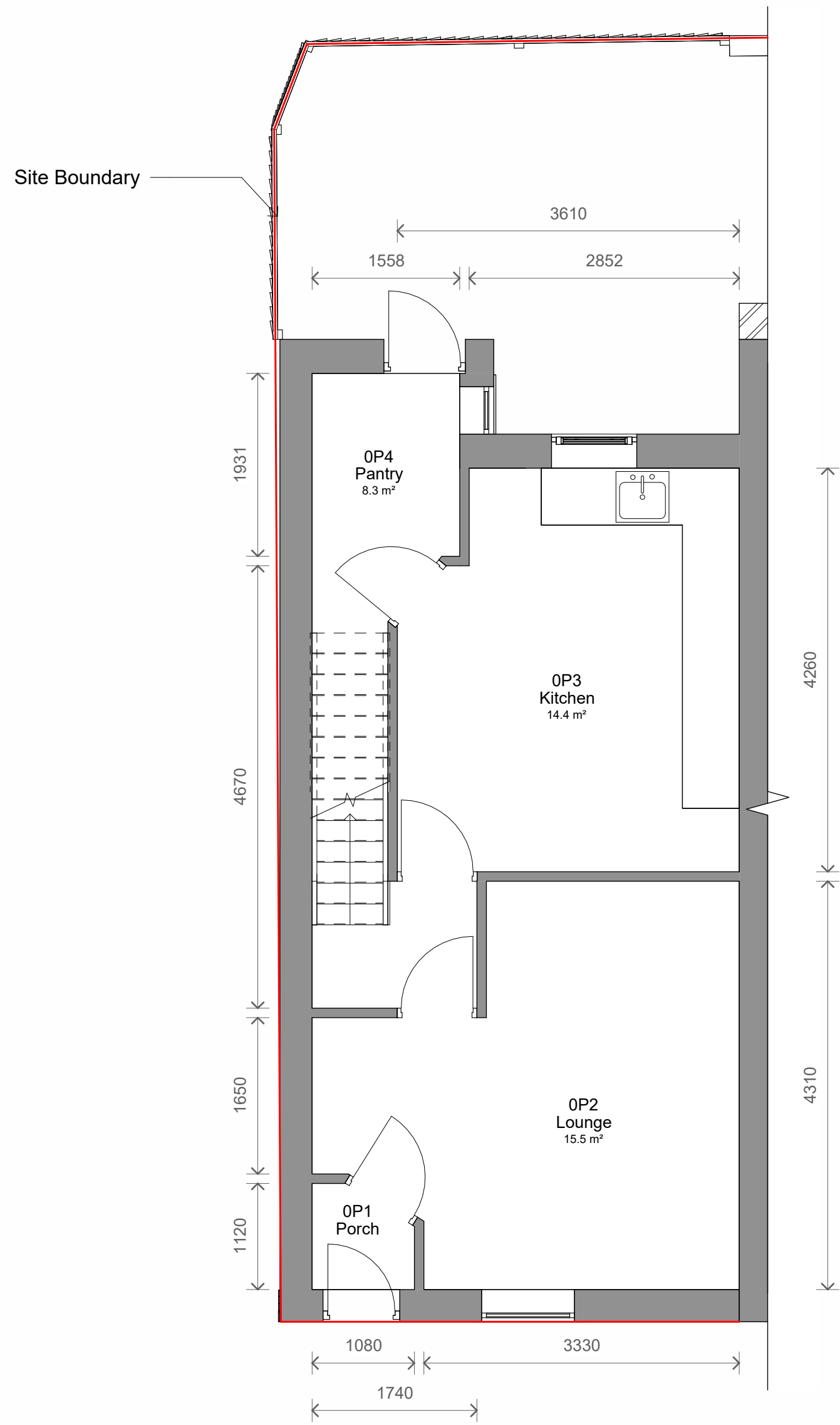
1 Front Street- Existing
1 : 100



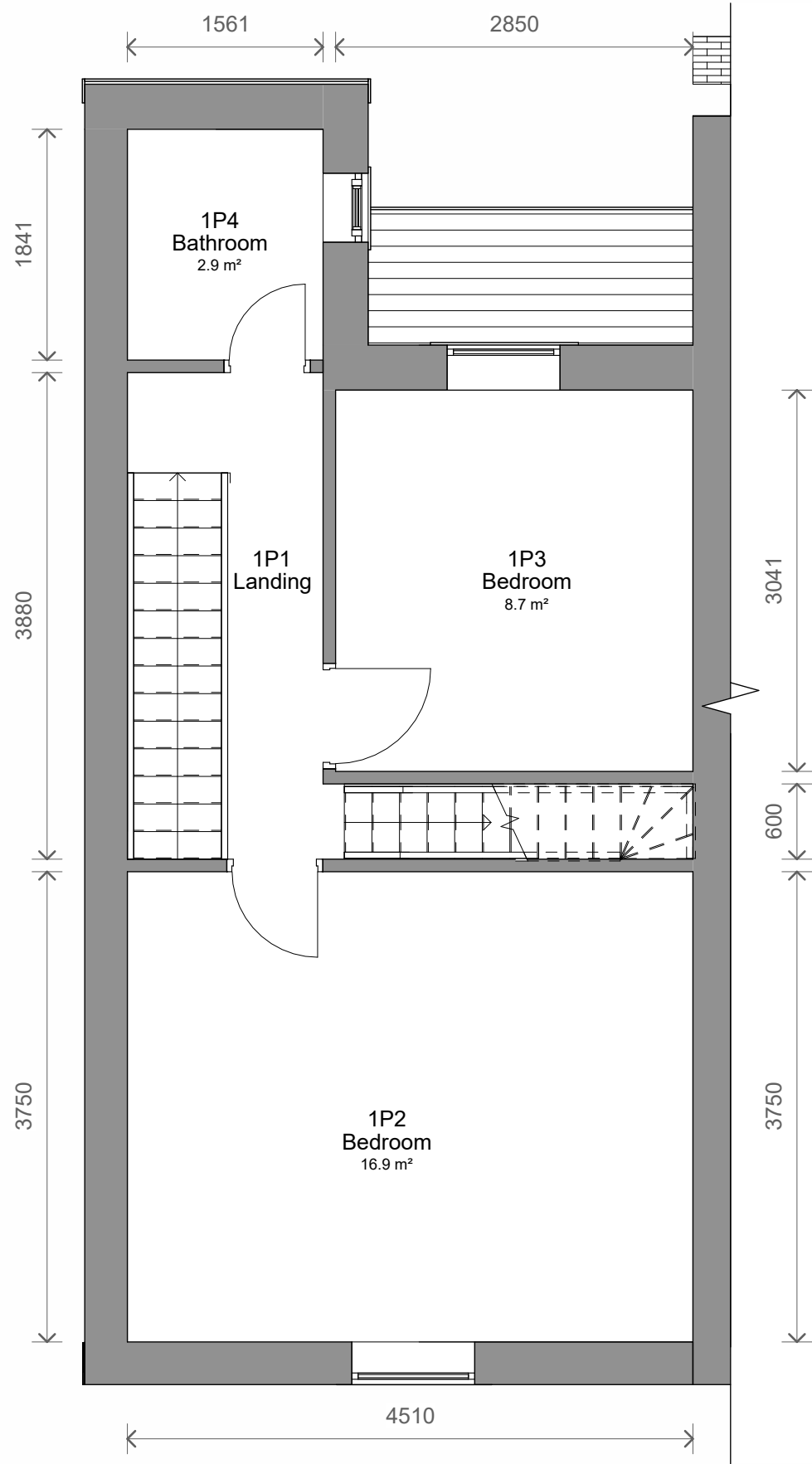
2 Front Street- Proposed
1 : 100



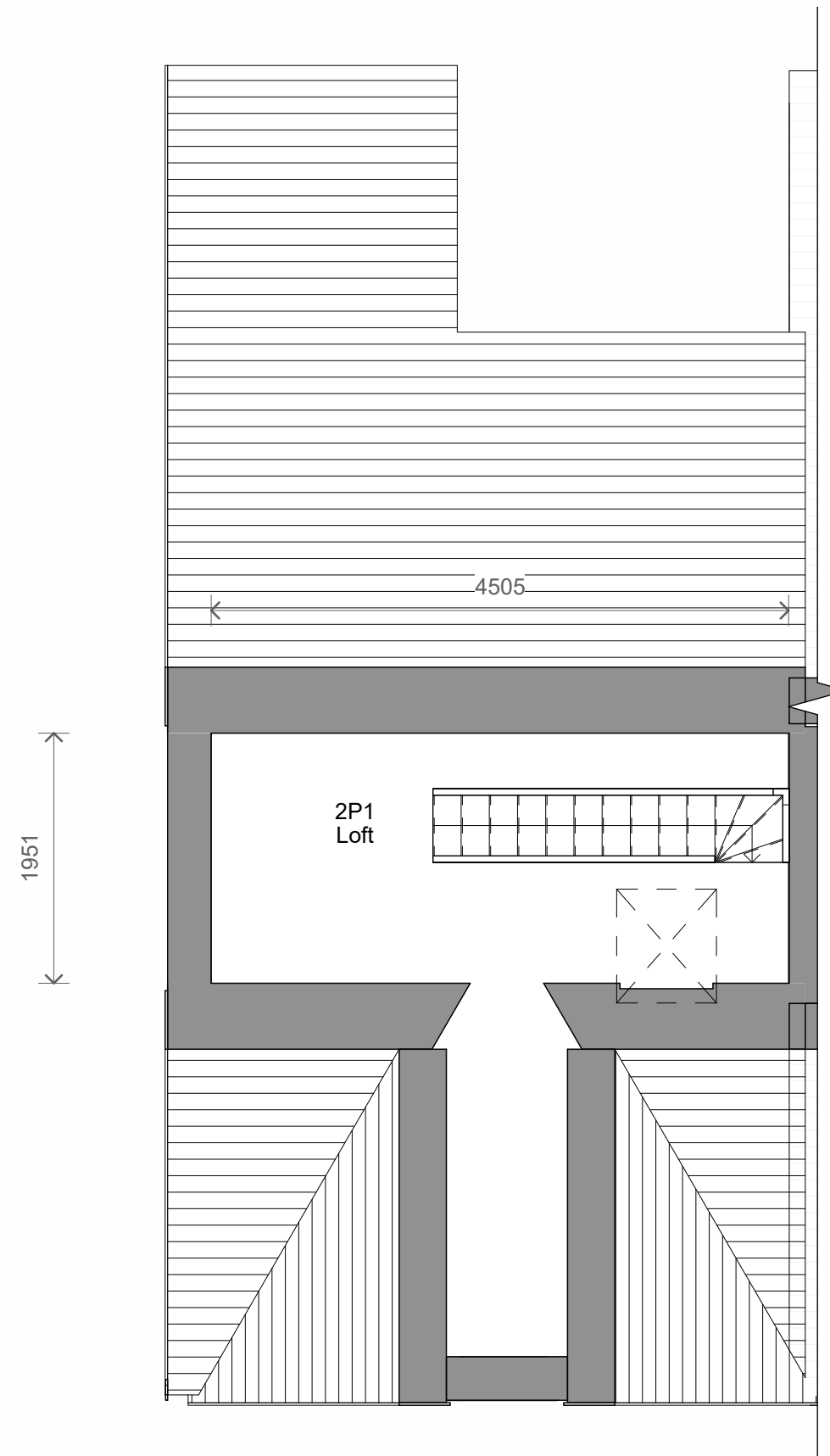
No. Description		Date	Initial
PROJECT Land Adjacent to 33 Stanley St			
TITLE Existing and Proposed Street Scene			
STATUS DESIGN			
DRAWN BY JB	DATE 24/03/2026	SCALE (@ A1) 1 : 100	
PROJECT NUMBER GSS25066.3	DRAWING NUMBER 004	REV	
GOLD SKETCH S T U D I O S www.goldsketch.co.uk info@goldsketch.co.uk 0161 792 9595			
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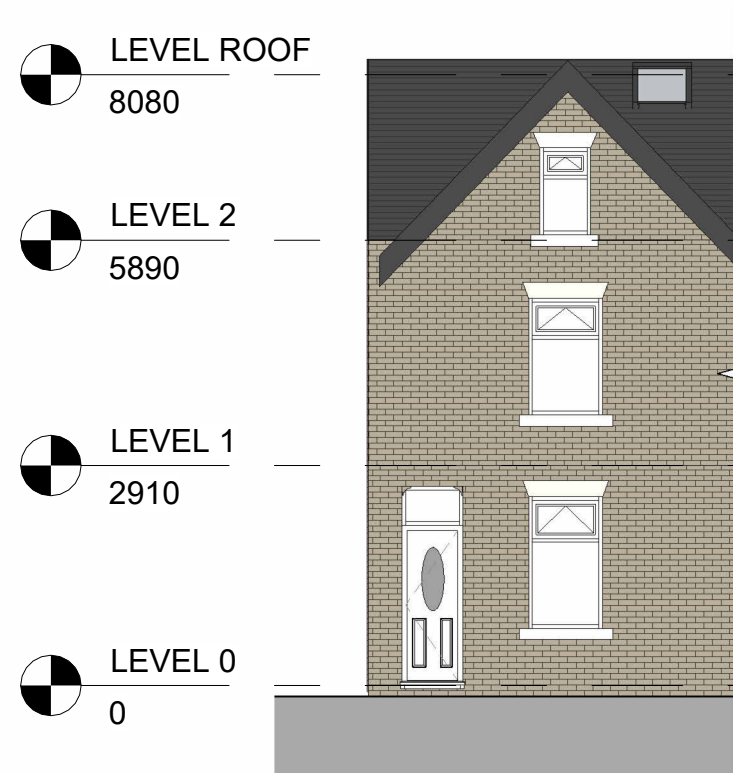
1 Level 0 - Proposed
1 : 50



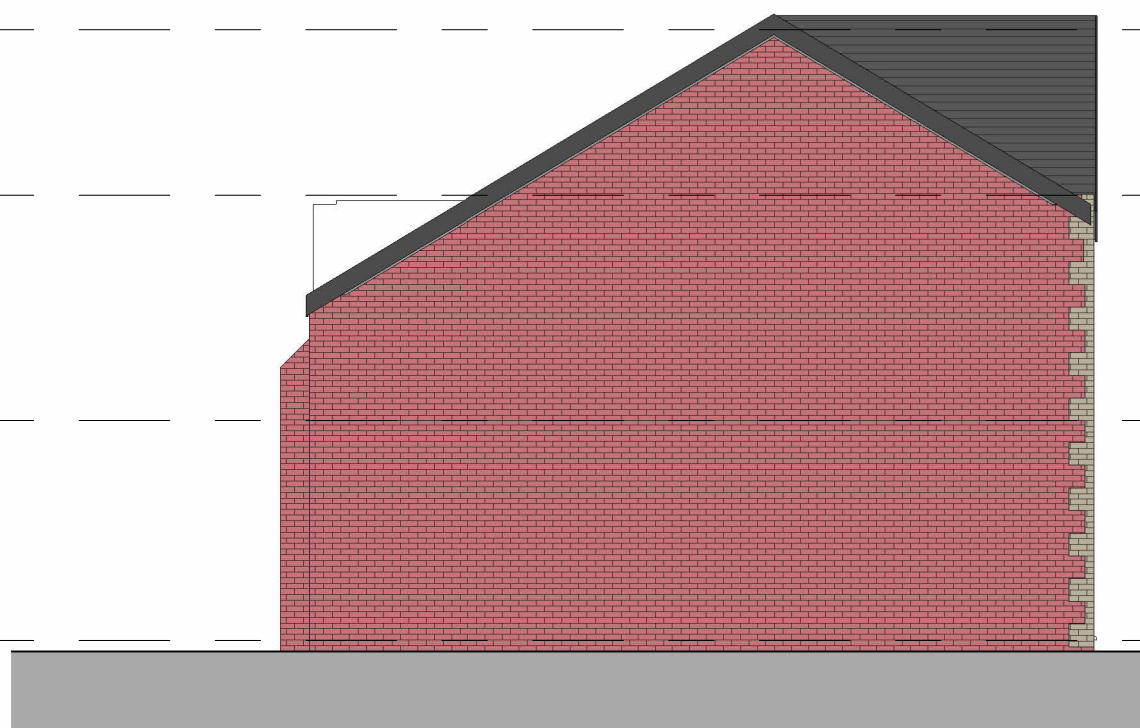
2 Level 1 - Proposed
1 : 50



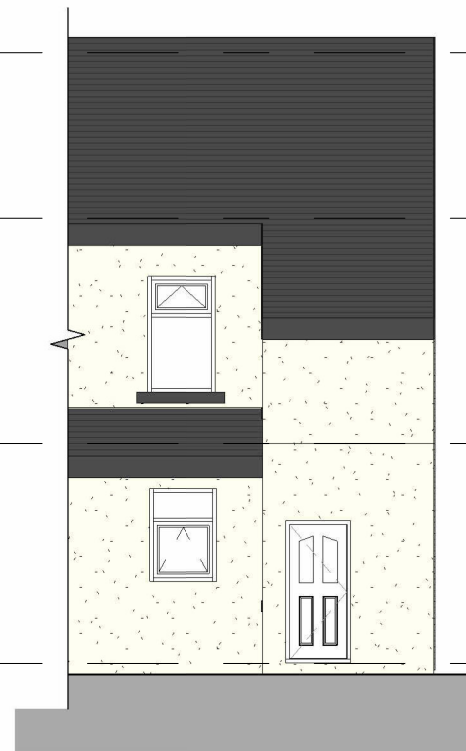
3 Level 2 - Proposed
1 : 50



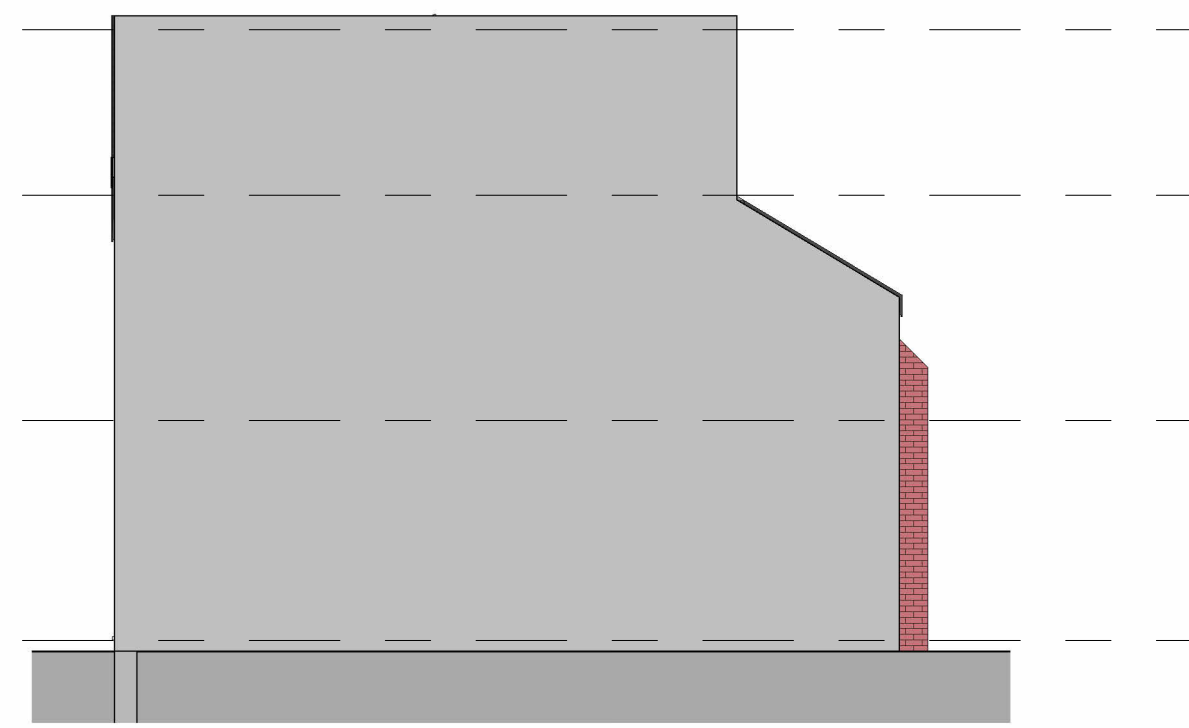
4 Front - Proposed
1 : 100



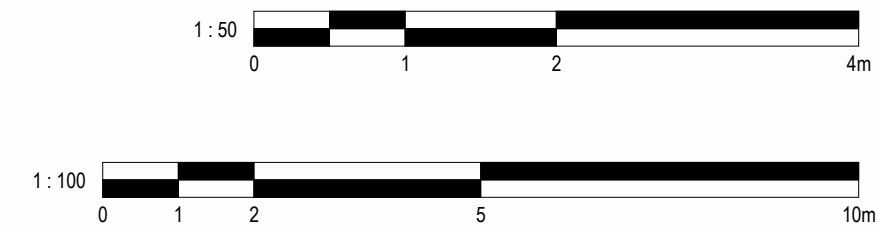
5 Left Side - Proposed
1 : 100



6 Rear - Proposed
1 : 100



7 Right Side - Proposed
1 : 100



2	Planning - Revised	20/03/2026	JB
1	Planning	21/11/2025	CB
No.	Description	Date	Initial

PROJECT Land Adjacent to 33 Stanley St		
TITLE Proposed Plans and Elevations		
STATUS DESIGN		
DRAWN BY MA	DATE 25/04/2025	SCALE (@ A1) As indicated
PROJECT NUMBER GSS25066	DRAWING NUMBER 003	REV 2
GOLD SKETCH S T U D I O S www.goldsketch.co.uk info@goldsketch.co.uk 0161 792 9595		
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Appendix B - CCTV Survey

Table of Contents

Project Name	Project Number	Project Date
1696 - Gold Sketch - Land Adjacent 33 Stanley st		7/9/2026

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Section Profile	P-5
Node Profile	P-6
Section Summary	P-7
Project Summary	P-8
Section Item 1: IC01 > IC01 D/S (IC01X)	1
Node 2: IC01	3

Project Information

Project Name	Project Number	Project Date
1696 - Gold Sketch - Land Adjacent 33 Stanley st		7/9/2026

Contractor

Company: Mersey Rod LTD
Description: Director
Contact: Jamie Samuels
Street: Commerce way
Town or City: Liverpool
County: Merseyside
Post Code: L8 7BA
Phone: 03301220067
Mobile: 07837547749
Email: jamie.samuels@merseyrod.co.uk



Project Information

Project Name	Project Number	Project Date
1696 - Gold Sketch - Land Adjacent 33 Stanley st		7/9/2026

Project Drawing, Page 'Page'



Scoring Summary

Project Name	Project Number	Project Date
1696 - Gold Sketch - Land Adjacent 33 Stanley st		7/9/2026

Structural Defects

Item No.	PLR	Grade	Description
All inspected pipes are in an acceptable structural condition (< grade 3).			

Service / Operational Condition

Item No.	PLR	Grade	Description
All inspected pipes are in an acceptable service condition (< grade 3).			

Abandoned Surveys

Item No.	PLR	Description
All inspections complete, none are abandoned.		

Information

These scoring summaries are based on the SRM grading from the WRc.

Defect Grade Description (Section)

Project Name	Project Number	Project Date
1696 - Gold Sketch - Land Adjacent 33 Stanley st		7/9/2026
1: Brick: No deformation. Minor structural defects. Rigid Pipes: No deformation. Minor structural defects, i.e. open or displaced joints without additional characteristics. Flexible Pipes: Deformation $\leq 5\%$. Acceptable structural condition.		
2: Brick: Deformation $\leq 5\%$. Circumferential cracking. Single longitudinal crack. Surface mortar loss (depth missing < 15 mm). Surface damage - spalling slight (breaking away of small fragments from the surface). Surface damage - wear slight (increased roughness). Rigid Pipes: Deformation $\leq 5\%$. Circumferential cracking. Surface damage - spalling slight (breaking away of small fragments from the surface). Surface damage - wear slight (increased roughness). Flexible Pipes: Deformation $\leq 10\%$. Minimal collapse likelihood in the short term but potential for further deterioration.		
3: Brick: Deformation $> 5\%$. Total mortar loss (depth missing > 50 mm) without other defects. More than one longitudinal crack (at a single location). Multiple cracking. Single bricks displaced. No fracture and only moderate mortar loss. Surface damage - spalling medium (large areas of chipped brick). Surface damage - wear medium (entire surface of brick is missing). Rigid Pipes: Fractures. Longitudinal cracking or multiple cracking. Minor loss of level. Severe joint defects. Surface damage - spalling medium. Surface damage - wear medium. Flexible Pipes: Deformation $\leq 20\%$. Collapse unlikely in the near future but further deterioration likely.		
4: Brick: Total mortar loss (depth missing > 50 mm) or fractured. Displaced/hanging brickwork. Small number of missing bricks. Dropped invert (drop > 20 mm). Moderate loss of level. Surface damage - spalling large (entire surface of brick is missing). Surface damage - wear large (entire surface of brick missing). Rigid Pipes: Broken. Deformation $\leq 10\%$ and fractured. Multiple fracture. Serious loss of level. Serious joint defects with voids or soil visible (open joint with > 50mm soil or void visible or joint displacement $> 25\%$ of diameter). Surface damage - spalling large. Surface damage - wear large. Flexible Pipes: Deformation $\leq 33\%$. Collapse likely in the foreseeable future.		
5: Brick: Already collapsed. Missing invert. Fractured. Displaced/hanging brickwork. Extensive areas of missing brickwork. Rigid Pipes: Already collapsed. Deformation $> 10\%$ and broken or fractured. Flexible Pipes: Deformation $> 33\%$. Collapsed or collapse imminent.		

Section Profile

Project Name	Project Number	Project Date
1696 - Gold Sketch - Land Adjacent 33 Stanley st		7/9/2026

Circular, 100 mm, 0 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
1	IC01	IC01 D/S	6/19/2026		Polyvinyl chloride	1.57 m	1.57 m

Total: 1 Inspection x Circular 100 mm, 0 mm = 1.57 m Total Length and 1.57 m Inspected Length

Total: 1 Inspection = 1.57 m Total Length and 1.57 m Inspected Length

Node Profile

Project Name	Project Number	Project Date
1696 - Gold Sketch - Land Adjacent 33 Stanley st		7/9/2026

Inspection chambers

Node No.	Node ID	Town or Village	Road	Node Depth	Date
2	IC01			0.230 m	6/19/2026

Total: 1 Inspection Chamber**Total: 1 Node**

Section Summary

Project Name	Project Number	Project Date
1696 - Gold Sketch - Land Adjacent 33 Stanley st		7/9/2026

Number of sections	1
Total length of sections	1.57 m
Total length of inspected sections	1.57 m
Total length of not inspected sections	0.00 m
Number of abandoned inspections	0
Number of section inspection photos	5
Number of section inspection videos	1
Number of section inspection scans	0
Number of section inclination measurements	0

PLR:	IC01X	Upstream Node:	IC01
Inspection Direction:	Downstream	Downstream Node:	IC01 D/S
Inspected Length:	1.57 m	Dia/Height:	100 mm
Total Length:	1.57 m	Material:	Polyvinyl chloride

No.	m+	Code	Observation
1	0.02	IC	Start node, inspection chamber, reference: IC01
2	0.04	WL	Water level, 0% of the vertical dimension
3	0.96	LR	Line deviates right
4	1.17	LD	Line deviates down
5	1.57	BRF	Finish node, major connection without manhole, reference: IC01 D/S

Project Summary

Project Name 1696 - Gold Sketch - Land Adjacent 33 Stanley st	Project Number	Project Date 7/9/2026
---	-----------------------	---------------------------------

Pipe Summary

No.	Type	PLR	Upstream Node	Downstream Node	Road	Town	Use	Mat.	Profile	Length
1	SEC	IC01X	IC01	IC01 D/S			S	PVC	Circular 100mm	1.57 m
Total:										1.57 m

Pipe Levels

No.	PLR	Upstream Node	Upstream C.L.	Upstream I.L.	Upstream I.D.	Downstream Node	Downstream C.L.	Downstream I.L.	Downstream I.D.
1	IC01X	IC01			0.000 m	IC01 D/S			0.000 m

Pipe Summary by Profile

Profile	Total Length	No. Pipes
Circular 100mm	1.57 m	
Circular 100mm =	1.57 m	1
Total =	1.57 m	1

Inspection Summary

Pipe No.	Insp. No.	Upstream Node	Downstream Node	Dir.	Operator	Insp. Date	Insp. Time	Str	Ser	Final Observation	Length
1	1	IC01	IC01 D/S	DS		19/06/2026	13:38	1	1	BRF, JOINS NEW LINE	1.57 m
Total:											1.57 m

Inspection Summary by Profile

Profile	Total Length	No. Inspections
Circular 100mm	1.57 m	
Circular 100mm =	1.57 m	1

Project Summary

Project Name 1696 - Gold Sketch - Land Adjacent 33 Stanley st	Project Number	Project Date 7/9/2026
---	-----------------------	---------------------------------

Profile	Total Length	No. Inspections
Total =	1.57 m	1

Defect Summary

Defect Summary				CCTV Drainage Survey Observation Count																				
				General				Structural Condition								Service Condition					Misc			
Sect. No.	Insp. No.	Upstream Node	Downstream Node	Insp. Length (m)	No. Grade 4/5 Obs.	Survey Abandoned	Camera Under Water	Cracks	Fractures	Broken	Deformed	Collapsed	Holes	Surface Damage	Displaced Joints	Open Joints	Roots	Infiltration	Encrustation	Silt	Grease	Obstruction	Water Level	Line Deviates
1	1	IC01	IC01 D/S	1.6																			1	2
Total:				1.6																			1	2

Completed section inspection

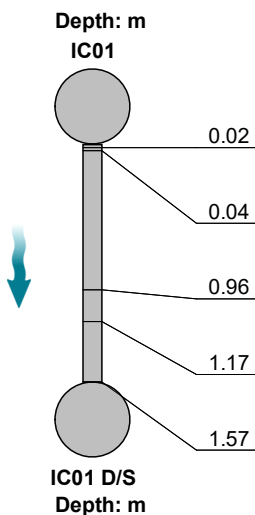


Item No. 1	Insp. No. 1	Date 19/06/26	Time 13:38	Client's Job Ref Not Specified	Weather Not Specified	Pre Cleaned Not Specified	PLR IC01X
Operator Not Specified		Vehicle Not Specified		Camera Not Specified	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:		Inspection Direction: Downstream		Upstream Node: IC01	
Road:		Inspected Length: 1.57 m		Upstream Pipe Depth:	
Location:		Total Length: 1.57 m		Downstream Node: IC01 D/S	
Surface Type:		Joint Length:		Downstream Pipe Depth:	
Use: Surface water		Pipe Shape:		Circular	
Type of Pipe:		Dia/Height:		100 mm	
Flow Control:		Material:		Polyvinyl chloride	
Year Constructed: Not Specified		Lining Type:		No Lining	
Inspection Purpose:		Lining Material:		No Lining	

Comments:

Recommendations:

Scale: 1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
						
	0.02	IC	Start node, inspection chamber, reference: IC01	00:00:01		
	0.04	WL	Water level, 0% of the vertical dimension	00:00:03		
	0.96	LR	Line deviates right	00:00:14		
	1.17	LD	Line deviates down	00:00:22		
	1.57	BRF	Finish node, major connection without manhole, reference: IC01 D/S: JOINS NEW LINE	00:00:48		

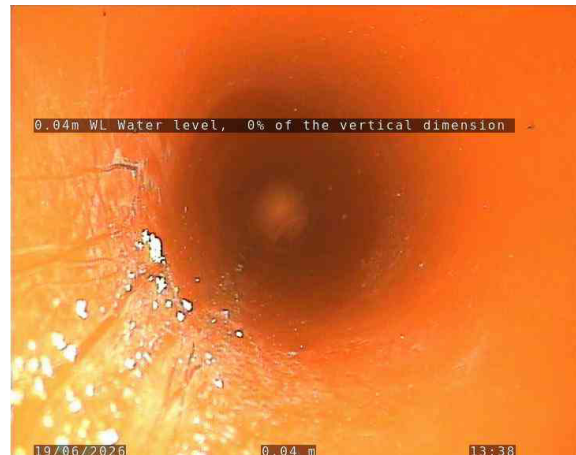
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Section Pictures - 6/19/2026 - IC01X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
1	Downstream	IC01X		



1, 00:00:01, 0.02 m
 Start node, inspection chamber, reference: IC01



2, 00:00:03, 0.04 m
 Water level, 0% of the vertical dimension



3, 00:00:14, 0.96 m
 Line deviates right



4, 00:00:22, 1.17 m
 Line deviates down



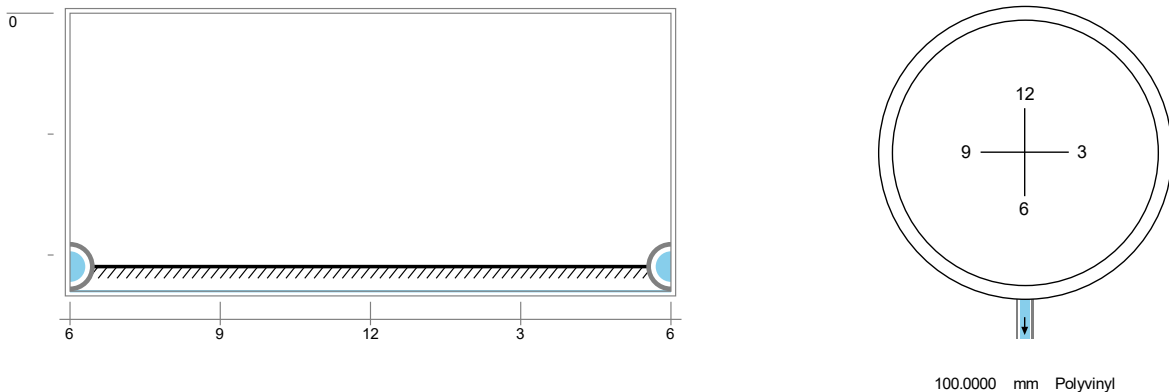
5, 00:00:48, 1.57 m
 Finish node, major connection without manhole, reference:
 IC01 D/S, JOINS NEW LINE

Node Report



Node ID IC01	Alternative ID Not Specified	Date 19/06/2026	Node Type Inspection chamber	Year Constructed Not Specified	Use Trade Effluent
Operator Not Specified	Vehicle Not Specified	Client's Job Ref Not Specified	Contractor's Job Ref Not Specified	Node Depth 0.230 m	Criticality Not Specified

Node Schematic



General Node Information

Road:		Land Ownership:	
Town or Village:		Node Ownership:	Private
Division or District:		Easting:	
Drainage Area:		Northing:	
Location:		Cover Level:	

General Node Inspection Information

Weather:		Vertical Ref.:	Cover point
Temperature:		Circular Ref.:	6 o'clock
Sheet Number:		Inspection Method:	
Status:		Surcharge Level:	
Flow Control:		Inspection Purpose:	
Cover Shape:	Circular	Cover Duty:	Light
Cover Hinge?	No	Cover Lock?	No
Material:		Construction Style:	
Comments:			
Recommendations:			

Observations

No.	Depth	Code	Observation	Remarks
1	0.00 m	REM	Picture	
2	0.00 m	REM	Picture	
3	0.00 m	REM	Picture	

Node Report



Node ID IC01	Alternative ID Not Specified	Date 19/06/2026	Node Type Inspection chamber	Year Constructed Not Specified	Use Trade Effluent
Operator Not Specified	Vehicle Not Specified	Client's Job Ref Not Specified	Contractor's Job Ref Not Specified	Node Depth 0.230 m	Criticality Not Specified

Inlets & Outlets

No.	Clock	Depth	Type	Shape	Material	Dia/Height	Width	Pipe ID	Remarks
	6	0.230 m	Outlet	Circular	Polyvinyl chloride	100 mm			

Cover

Shape:	Circular	Dia/Length:	460 mm
Material:	Asbestos Cement	Width:	460 mm
Lowest Point:		Height:	
Requires Attention?	No	Cover Duty:	Light
Remarks:			

Node Pictures - 6/19/2026

Node No.	Node ID	Alternative ID	Client's Job Ref	Contractor's Job Ref
2	IC01			



1, 00:00:00, 0.00 m
Picture



2, 00:00:00, 0.00 m
Picture



3, 00:00:00, 0.00 m
Picture

Appendix C - Sewer Asset Plans

Aegaea

**66
Swaledale Road,
Warminster,
BA12 8FJ**

FAO:

How to contact us:

**United Utilities Water Limited
Property Searches
Haweswater House
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP**

Telephone: 0370 7510101

E-mail: propertysearches@uuplc.co.uk

**Your Ref: 10943
Our Ref: UUPS-ORD-743006
Date: 10/07/2026**

Dear Sirs

Location: 44 STANLEY STREET, HEYWOOD, OL10 1BH

I acknowledge with thanks your request dated 09/07/2026 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

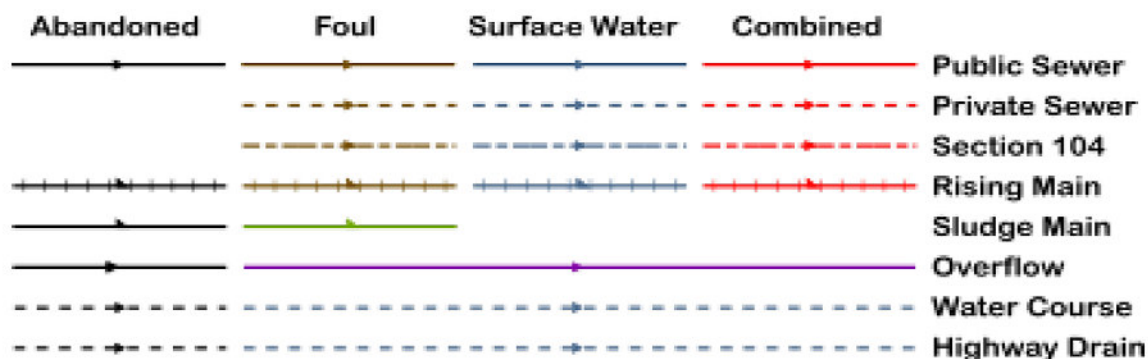
TERMS AND CONDITIONS - WASTEWATER AND WATER DISTRIBUTION PLANS

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.

Wastewater Symbolology



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	DNM Network Monitoring Point
Drop Shaft	Change of Characteristic
Orifice Plate	



Water for the North West

SEWER RECORDS

Address or Site Reference

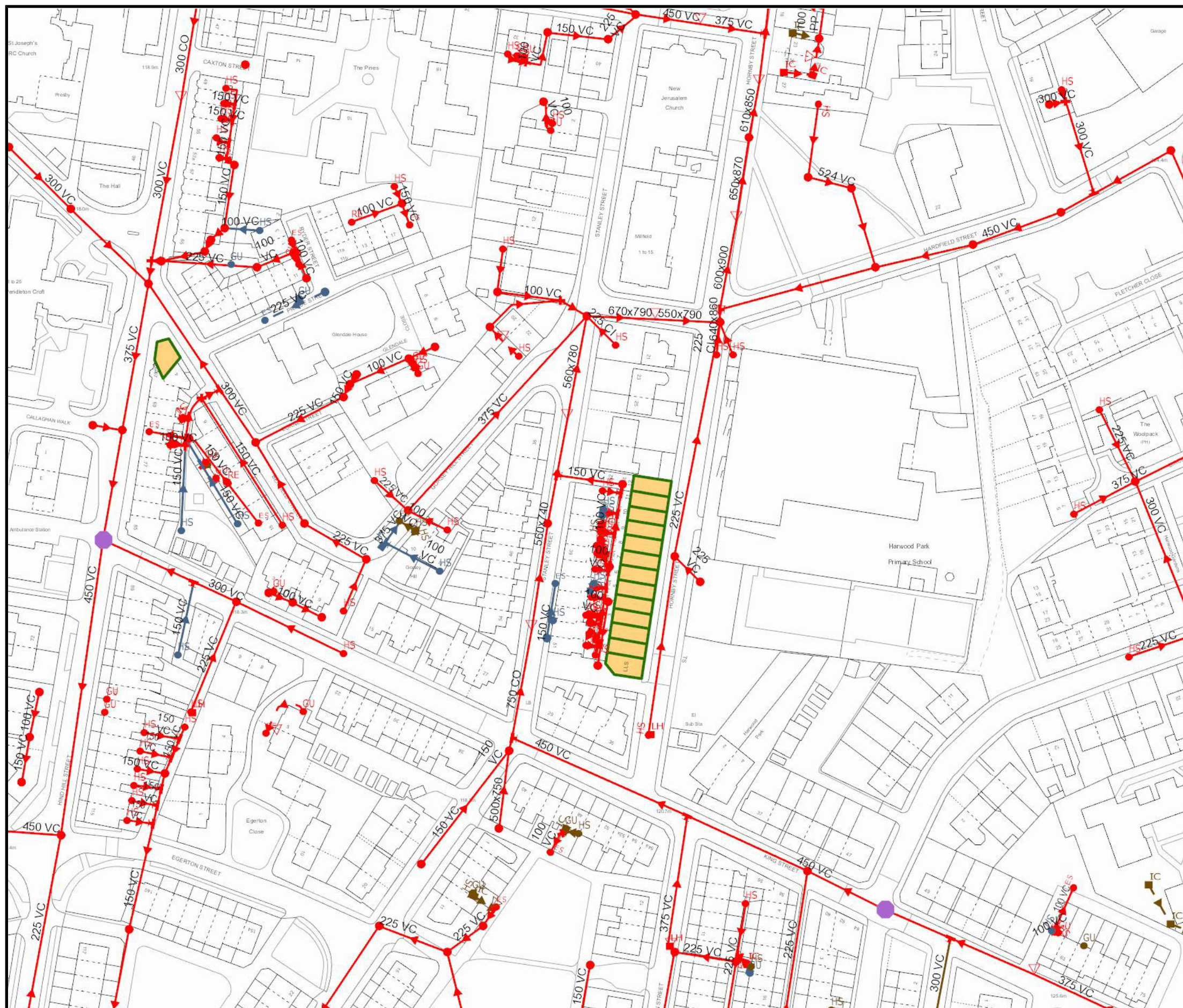
44 STANLEY STREET,
HEYWOOD,
OL10 1BH

Scale: 1:1250
Date: 10/07/2026

Printed by: Property Searches

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

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Ordnance Survey 0000813445.
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Appendix D - Surface Water and Foul Water Drainage Strategy



DO NOT SCALE THIS DRAWING. USE FIGURED DIMENSIONS ONLY.
THE CONTRACTOR MUST CHECK & VERIFY ALL DIMENSIONS ON SITE.
ANY DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE ENGINEER
FOR CLARIFICATION BEFORE PROCEEDING.
THIS DRAWING IS COPYRIGHT AND OWNED BY AEGAEA.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
REFER TO THE RELEVANT CONSTRUCTION (DESIGN AND MANAGEMENT)
DOCUMENTATION WHERE APPLICABLE.
IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY
A COMPETENT CONTRACTOR, WORKING WHERE APPROPRIATE TO AN
APPROVED METHOD STATEMENT.

Planning

Key

- Application Boundary
- Catchment Areas
- Existing**
 - Combined Sewer
 - Combined Manhole/Inspection Chamber
 - Surface Water Pipe
 - Surface Water Manhole
- Proposed**
 - Surface Water Pipe
 - Surface Water Manhole/Inspection Chamber
 - Rainwater Downpipe
 - Geocellular Attenuation Crates
 - Slimline Water Butt
 - SuDS Planter
 - Foul Water Pipe
 - Foul Water Manhole/Inspection Chamber

A01	30/07/26	First Issue	AS
Rev	Date	Description	By

Client
D&A Sutor Bros Builders Limited

Project
**Land Adjacent to 33 Stanley Street,
Heywood, OL10 1BH**

Title
**Surface Water and Foul Water Drainage
Strategy**

Project No.		Drawing No.		Revision
AEG10943		DR01		A01
Drawn	Checked	Approved	Date	Scale @ A1
AS	DMC	DS	July 2026	1:30

Drawing Status
PURPOSE OF ISSUE

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Shared Access

Existing 150mmØ Combined Sewer (United Utilities)

Existing Combined MH (United Utilities)
CL: 119.03m AOD
IL: 116.33m AOD

Levels of onsite connection point interpolated from
downstream levels and gradient proxy of 1:40.
CL: 118.93m AOD
IL: 116.45m AOD

Connection from the site into existing combined sewer (as
per United Utilities asset plans). Levels interpolated from
upstream and downstream levels.
CL: 119.03m AOD
IL: 116.39m AOD

Existing Combined Sewer (United Utilities)
150mmØ @ 1:37.51 (Interpolated from Invert Levels)

Shared Access

Proposed below-ground geocellular attenuation crate
system (Wavin Aquacell or similar approved).

Dims: 2.0m x 1.5m x 0.8m Deep
Porosity: 95%
Volume: 3.28m³
CL: 118.93m AOD
IL: 117.13m AOD

Modelled with 15mm orifice plate outlet, restricting flows to
maximum 0.4l/s in critical storm. Based on level of proposed
connection downstream, it is considered that at least 1.0m
cover can be achieved atop the crate system.

Foul flows from proposed dwelling calculated to be at a rate of
approximately 0.046l/s.

Proposed slimline water butt at downpipe.

Proposed connection of both foul and surface water into existing
combined sewer via on-site connection point. Levels interpolated
from existing system downstream and associated levels. Levels
indicate a gravity connection from the proposed attenuation (and
foul outlet) would be feasible.

CL: 118.93m AOD
IL: 116.45m AOD

Subject to Section 106 Connection Application made to United
Utilities and confirmation of capacity.

Existing manhole and surface water pipe identified by CCTV Survey. Manhole at
0.23m deep and beneath the location of the proposed dwelling. Therefore, does not
provide a suitable option to connect into. Manhole appears to be incomplete with no
incoming flows from the site or other pipes.

Seems to connect into new line downstream, however any wider route of this is not
present on sewer asset plans. CCTV survey is appended to the SWDS report.

Proposed SuDS Planter at downpipe - Extra Small -
<https://www.sudsplanter.com/products/>

Dims: 0.8m x 0.6m x 0.95m Deep
Volume: 0.15m³

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Appendix E - InfoDrainage Calculations

Project: Proposed - 33 Stanley Street, Heywood, Rochdale OL10 1BH	Date: 29/07/2026		
	Designed by: AS	Checked by: DMC	Approved By: DS
Report Details: Type: Inflows Storm Phase: Phase	Company Address: Aegaea Limited		



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Proposed Dwelling

Type : Catchment Area

Area (ha)	0.005
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Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10

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Cellular Storage

Type : Cellular Storage

Dimensions

Exceedance Level (m)	118.930
Depth (m)	0.800
Base Level (m)	117.130
Number of Crates Long	4
Number of Crates Wide	3
Number of Crates High	2
Porosity (%)	95
Crate Length (m)	0.5
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	3.280

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	Proposed Dwelling
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	(None)
Outlet Type	Orifice
Diameter (m)	0.015
Coefficient of Discharge	0.600
Invert Level (m)	117.130

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Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Proposed Dwelling	Cellular Storage		Time of Concentration	0.005	100	10	110	0.005
TOTAL		0.0		0.005				0.005

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Flow Options

Peak Flow Calculation	(UK) Modified Rational Method
Min. Time of Entry (mins)	5
Max. Travel Time (mins)	30

Pipe Options

Lock Slope Options	None
Design Options	Minimise Excavation
Design Level	Level Soffits
Min. Cover Depth (m)	1.200
Min. Slope (1:X)	500.00
Max. Slope (1:X)	40.00
Min. Velocity (m/s)	1.0
Max. Velocity (m/s)	3.0
Use Flow Restriction	☐
Reduce Channel Depths	☐

Pipe Size Library

Default

Add. Increment (mm)	75
Max. Diameter (mm)	0

Diameter (mm)	Min. Slope (1:X)	Max. Slope (1:X)
100	0.00	0.00
150	0.00	0.00

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Manhole Options

Apply Offset ☐

Manhole Size Library

Default

Diameter / Width

Connection (mm)	Diameter / Length (m)	Width (m)
0	1.200	0.000
375	1.350	0.000
500	1.500	0.000
750	1.800	0.000

Additional Sizing

Connection (mm)	900
Diameter / Length (m)	0.900
Width (m)	0.000

Depth

Depth (m)	Diameter / Length (m)	Width (m)
0.000	1.050	0.000
1.500	1.200	0.000

Access

Depth (m)	Ladder Protrusion (mm)
0.000	130
3.000	230

Benching Requirements

Landing Width (mm)	500
Benching Width (mm)	225

Project: Proposed - 33 Stanley Street, Heywood, Rochdale OL10 1BH	Date: 29/07/2026		
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Report Title: Rainfall Analysis Criteria	Company Address: Aegaea Limited		



Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Use Catchment Values
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Project: Proposed - 33 Stanley Street, Heywood, Rochdale OL10 1BH	Date: 29/07/2026		
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Report Title: UK and Ireland Rural Runoff Calculator	Company Address: Aegaea Limited		



ICP SUDS / IH 124

Details

Method	ICP SUDS
Area (ha)	0.005
SAAR (mm)	1117.0
Soil	0.47
Region	Region 10
Urban	0
Return Period (years)	0

Results

Region	QBAR Rural (L/s)	QBAR Urban (L/s)	Q 1 (years) (L/s)	Q 30 (years) (L/s)	Q 100 (years) (L/s)
Region 10	0.0	0.0	0.0	0.1	0.1

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FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Resident Volume

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FEH: 2 years: +0 %: 120 mins: Summer	117.282	117.282	0.152	0.152	0.5	0.434	0.000	0.000	0.2	0.974	86.764	OK

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FEH: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Resident Volume

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FEH: 30 years: +0 %: 60 mins: Summer	117.502	117.502	0.372	0.372	1.3	1.059	0.000	0.000	0.3	1.370	67.722	OK

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FEH: 30 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Resident Volume

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FEH: 30 years: +40 %: 60 mins: Summer	117.676	117.676	0.546	0.546	1.8	1.557	0.000	0.000	0.3	1.742	52.524	OK

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FEH: 100 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Resident Volume

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FEH: 100 years: +0 %: 60 mins: Summer	117.627	117.627	0.497	0.497	1.7	1.418	0.000	0.000	0.3	1.647	56.755	OK

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FEH: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Resident Volume

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FEH: 100 years: +45 %: 60 mins: Summer	117.887	117.887	0.757	0.757	2.5	2.158	0.000	0.000	0.4	2.112	34.202	OK