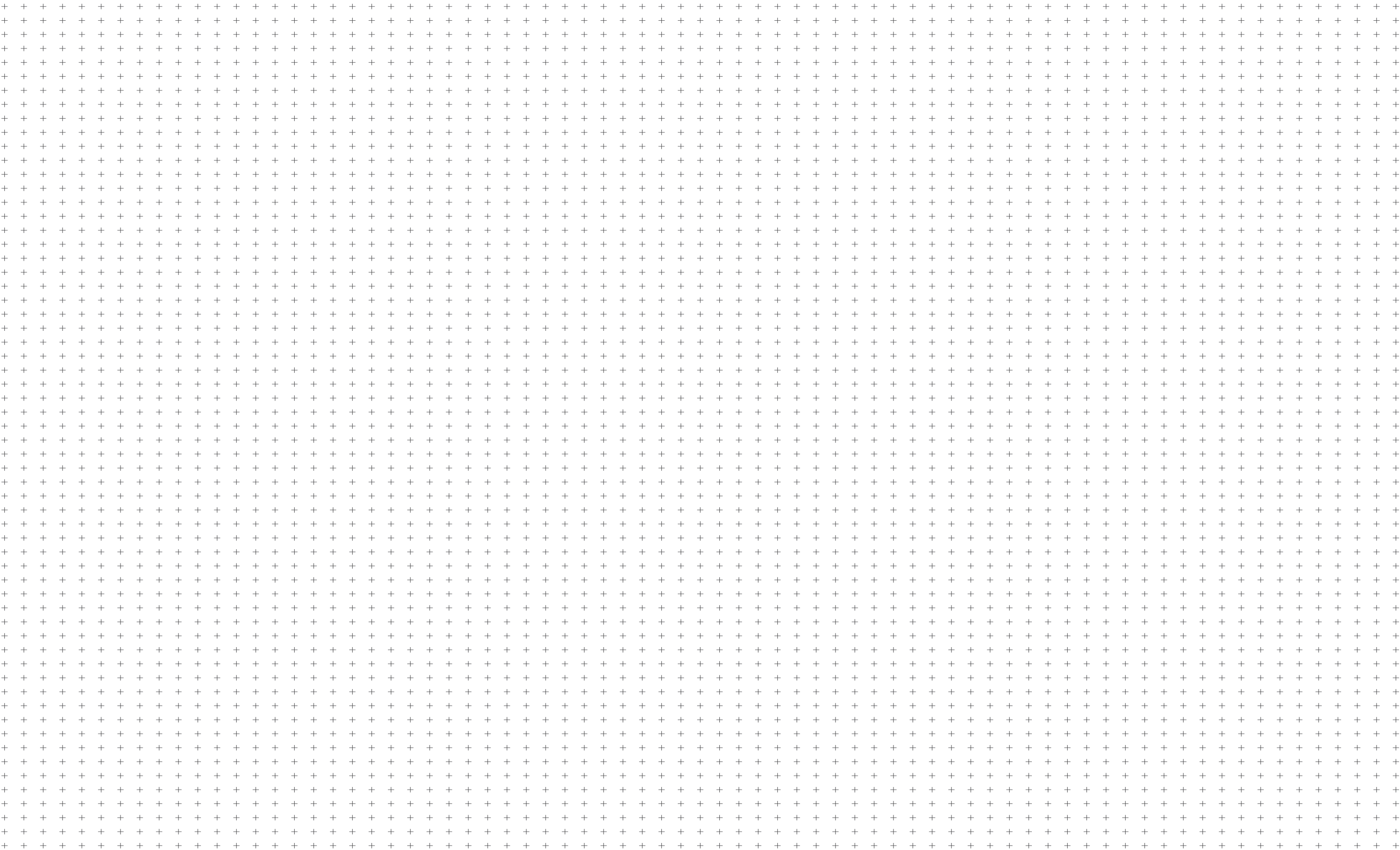


3535 – Land at Chapman Street, Gorton, SuDS and Drainage Strategy



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Status:	01
Date:	09/02/26
Revision:	DRAFT
Job no:	3535
Prepared by:	Ted Mullins
Approved by:	Jessie Britnell Craven

This report relies on information generally accessible at the time of writing. This report should be considered in the context of any alterations in legislation, statutory requirements, or industry practices that might have transpired after the date of issue. Unless expressly stated otherwise, this report is not intended as a letter of reliance and it is not intended to confer or create any right enforceable by any person not party to it. This report is subject to the standards of skill, care and diligence expected of a reasonably competent member

of the profession. This report shall not extend the duty of Heyne Tillett Steel Ltd to the level of fitness of purpose. Heyne Tillett Steel Ltd do not, in issuing this report, accept or assume responsibility for any other purpose or to any other person who may come into possession and/or have sight of this report, except for where agreed by Heyne Tillett Steel Ltd in writing.

1. Introduction

This SuDS and Drainage Strategy has been prepared by Heyne Tillett Steel to support the planning application submitted to the Manchester City Council in relation to the Land at Chapman Street development.

The report aims to incorporate and demonstrate compliance with the following national, regional and local planning policy guidance and statutory requirements as far as reasonably possible:

- + National Planning Policy Framework (NPPF), 2024
- + National standards for Sustainable Drainage Systems (SuDS), 2025
- + CIRIA SuDS Manual (C753), 2026
- + Greater Manchester’s Sustainable Drainage Design Guide, 2025
- + Greater Manchester Surface Water Management Plan, 2012

The site is located between Carafax Street to the west, Cross Lane to the south and Chapman Street to the east, with the Shalom Christian Church adjoining the site to the north. The development site extends to approximately 0.1663 ha (1,663m²) and is centred on Easting 388838 and Northing 396323. The site location is shown on Image 2, outlined by the red line boundary.

The existing site comprises predominantly impermeable surfacing, previously used as a multi-use games area, along with an wide grass strip around the edge of the games area. Historically, the site was occupied by terraced residential properties which were demolished in the 1970s; the site is therefore classified as brownfield land.

The proposed development comprises an independent living scheme, including associated access and landscaping works.

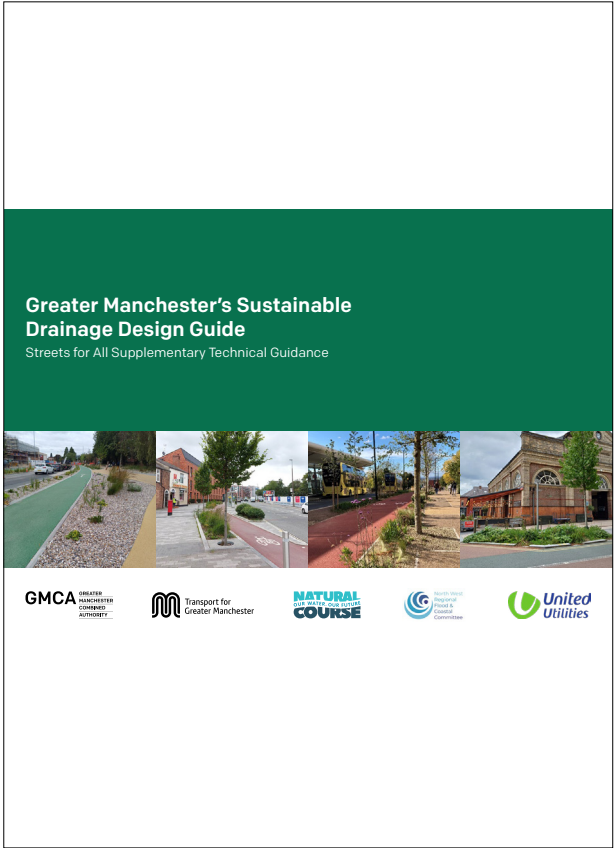
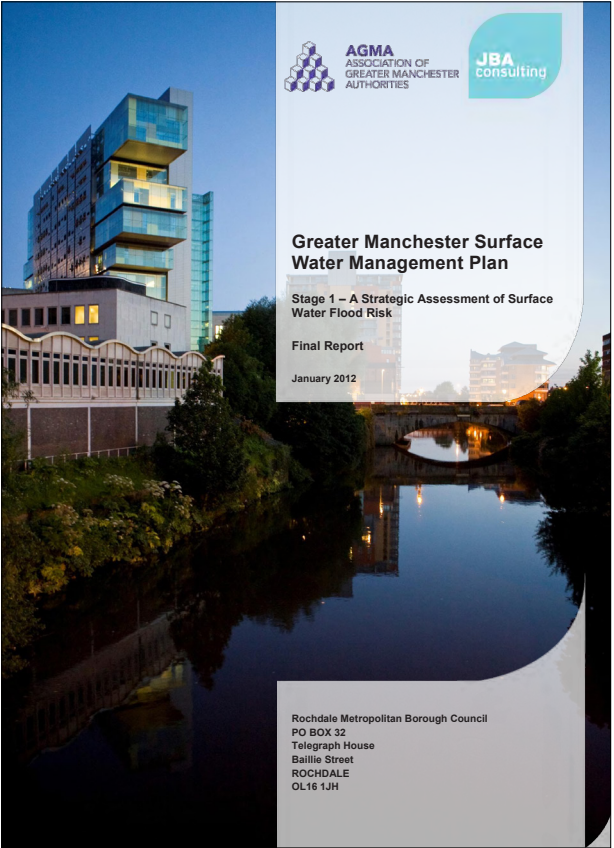
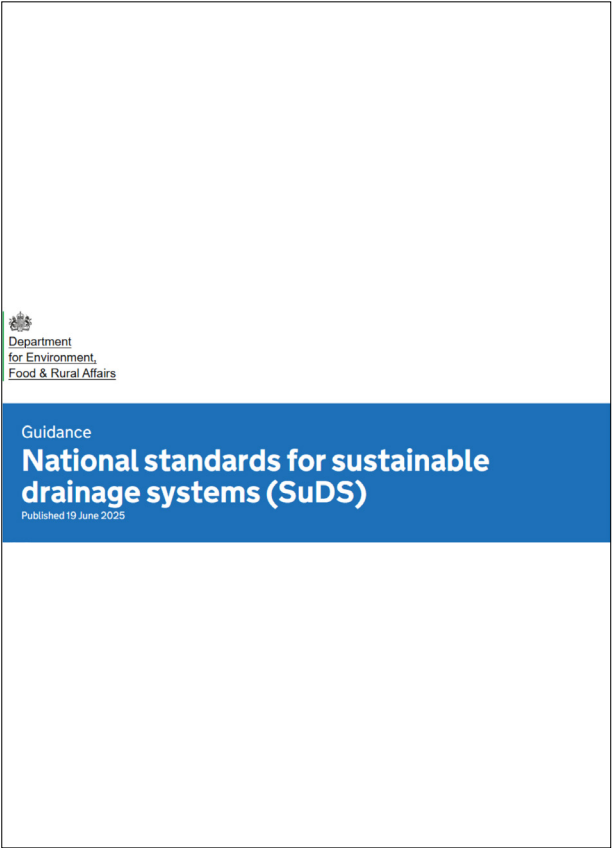
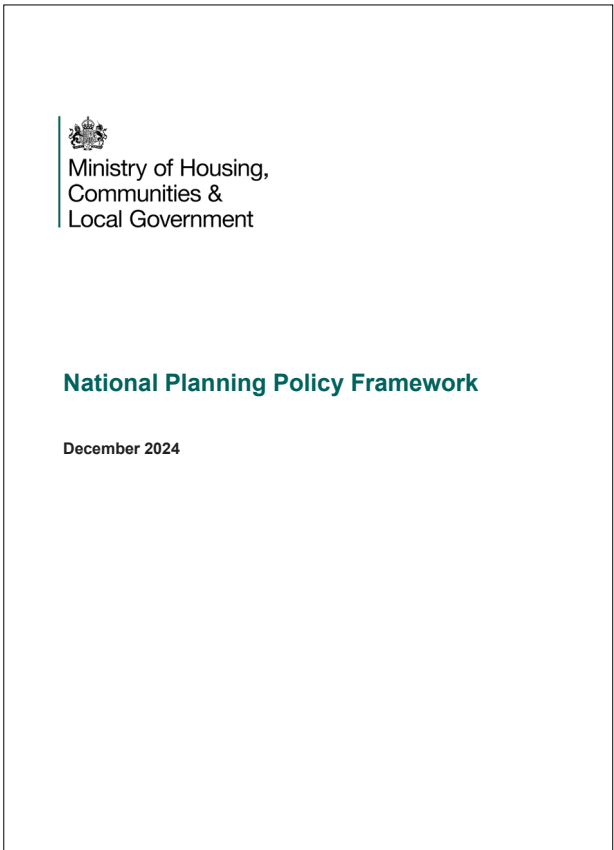
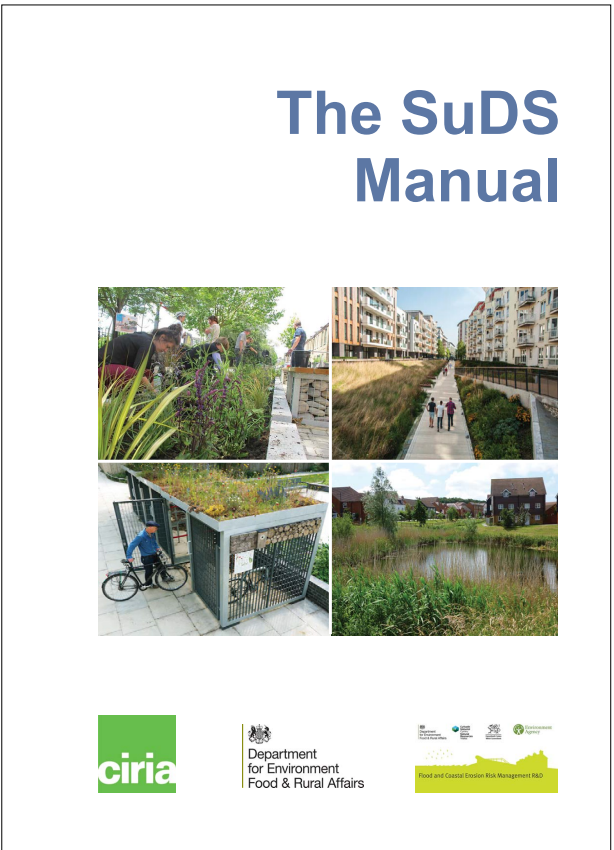


Image 1 - Policy and Guidance

Image 2 - Site Location Plan

2. Existing Drainage

The United Utilities asset map for the area surrounding the site was obtained and can be viewed in Image 3. This identified a separate 1,070mmØ surface water sewer and 375mmØ combined water sewer on Chapman Street, to the east of the site with the drainage direction running from the north to the south. Cross Lane to the south of the site contains a separate 225mmØ surface water sewer and 600mmØ combined water sewer, draining east to west.

In addition to this, a 225mmØ surface water sewer network has been identified on Carfax Street, to the west of the site. The precise location of the existing manholes located on these streets will be determined via the proposed CCTV survey.

No archive information, or desk top study results, indicate any private drainage network within the red line boundary of the site. It is considered likely that any existing drainage associated with the former terraced housing demolished in the 1970s was removed as part of those works. If still present, then they would be likely unsuitable for re-use and will need to be demolished.

2.1 Sewer Surge

Since the existing site does not have any associated drainage, there are no records of historic surcharging on the site. In addition to this, United Utilities do not provide details on historic surcharge events or areas vulnerable to sewer surcharging, so it cannot be determined if the local area is subject to sewer surcharge events.

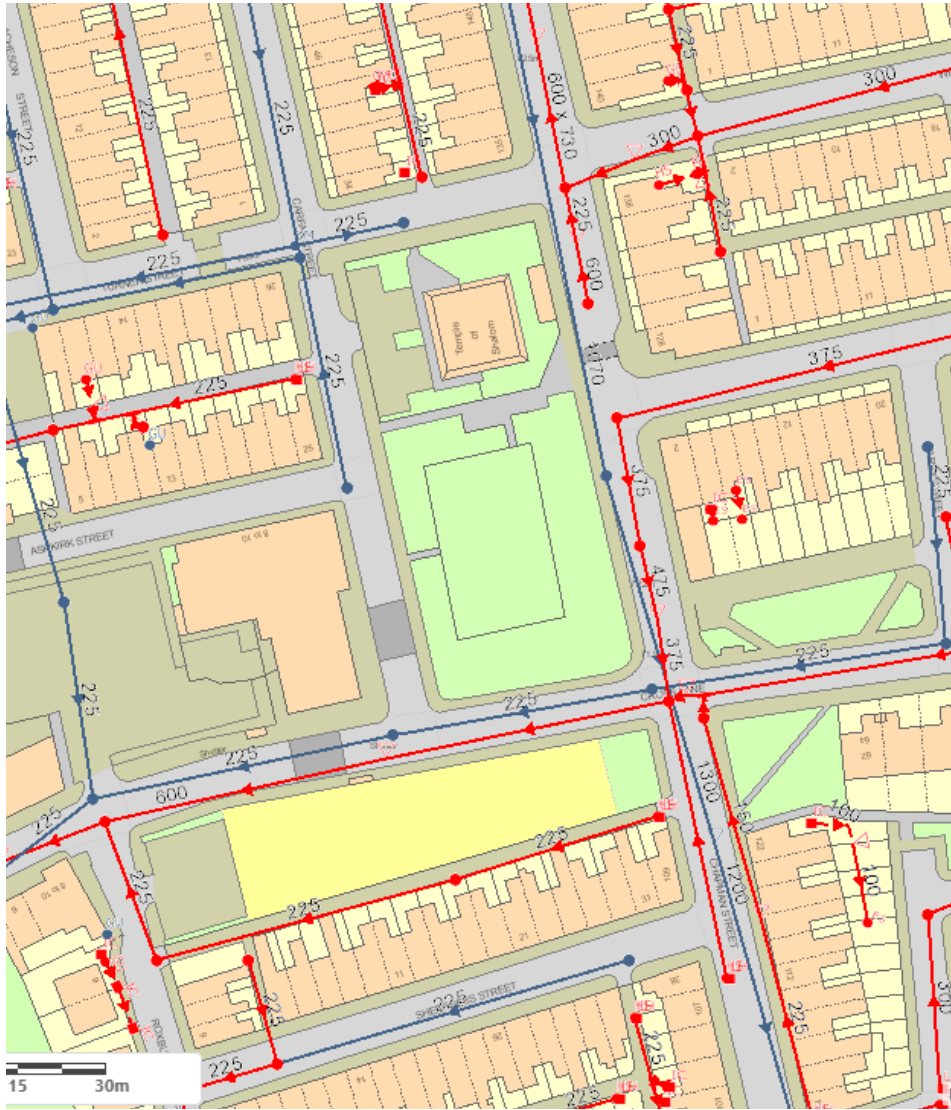


Image 3 - United Utilities Asset Map

2.2 Existing Surface Water Run-off Rates

The existing development site is classified as brownfield and has an impermeable area of approximately 0.059 hectares (590m²). The existing peak run-off rate has been calculated using the Modified Rational Method in accordance with the following formula:

$$Q = 3.61 C_v \times i \times A$$

Where C_v is the volumetric runoff coefficient, A is the catchment area in hectares and i is the peak rainfall intensity in mm/hr using FEH rainfall intensities.

Table 1 summarises the existing peak run-off rate for the 1 in 1 year, 1 in 30 year, 1 in 100 year and 1 in 100 year + 45% climate change (cc) rainfall events.

Rainfall event	Rainfall Intensity	Existing Discharge Rate (l/s)
Q_1	29.04	6.18 l/s
Q_{30}	72.92	15.53 l/s
Q_{100}	92.36	19.67 l/s
Q_{100+45}	133.92	28.52 l/s

Table 1 - Existing Surface Water Run-off Rates

3. Proposed Drainage Network

3.1 LLFA Policy and Guidance

It is proposed to use SuDS for the capture of surface water runoff where possible. Separate foul and surface water networks will be provided to serve the site and will be designed in accordance with Building Regulations Part H.

Surface water drainage from the proposed development is proposed to discharge in line with the requirements of Building Regulations Part H, which stipulates that rainwater from roofs and paved areas is carried away from the surface to discharge to one of the following,

Listed in order of priority:

- + An adequate soakaway or some other adequate infiltration system; or where that is not reasonably practicable
- + A watercourse; or where that is not reasonably practicable,
- + A surface water sewer.
- + A combined water sewer.

3.2 United Utilities Pre-Development Enquiry

As part of this planning application, engagement with United Utilities has taken place on 11.12.25 to determine a suitable location for connection to the public sewer network and suitable surface water discharge rates.

United Utilities have confirmed that the site is eligible for a new foul water connection to the combined sewer located within Chapman Street. The nearest combined water manhole to the site along Chapman Street is United Utility manhole reference: SD8302. Since this manhole is upstream of the sites foul water outfall location for the development, it is proposed to connect into the public sewer downstream of manhole 8302 (see Image 3) via a preformed junction connection.

Similarly, United Utilities have requested that the associated surface water to the site is discharged to the existing 1,070mm diameter public surface water sewer within Chapman Street. The nearest surface water manhole to the site along Chapman Street is United Utility manhole reference: SD8313. This manhole is downstream of the sites surface water outfall location and therefore is considered to be a viable location for the proposed development to connect into the public sewer.

United Utilities have requested that any agreed surface water discharge rate does not exceed 5.0l/s.

The United Utilities pre-development enquiry can be viewed in Appendix A.

3.3 Proposed Foul Water Drainage Network

A new foul network will be required as to service the units and ancillary spaces within the development. It is proposed for the site to be serviced by a gravity network which will outfall to the east of the site, onto the existing 375mm diameter combined sewer within Chapman Street. The new foul water connection to the combined public sewer will be secured via a Section 106 agreement in the detailed design stage.

The proposed adoptable foul drainage network has been designed in accordance with Section B3.1 of the Design and Construction Guidance for Foul and Surface Water Sewers (DCG) (2023). In line with this guidance, a peak foul flow rate of 4,000 litres per dwelling per day (equivalent to 0.05 litres per second per dwelling) has been adopted.

The proposed foul water drainage strategy can be viewed in Appendix B.

3.4 Proposed Surface Water Drainage Network

In accordance with the NPPF and policy, the surface water drainage network has been designed in coordination with the architect and landscape architect and aims to incorporate SuDS into the development. A copy of this Drainage Strategy can be seen in Appendix B.

The proposed surface water drainage network has been designed to capture all surface water run-off from impermeable locations within the proposed development and will attenuate water run-off within the site boundary. Surface water will then be discharged into the public sewer in a controlled manner, with a flow control system (Hydro-brake) installed to reduce surface water run-off rates associated with the proposed development. No surface water landing on impermeable surfaces will discharge out of the site and onto the surrounding highway network.

It is proposed for the site to be serviced by a gravity network which will outfall to the east of the site, to the existing 1,070mm diameter public surface water sewer within Chapman Street. The new surface water connection to the surface water public sewer will be secured via a Section 106 agreement at detailed design stage.

3.4.1 Catchment Plan

To assist with the understanding how surface water has been accounted for throughout the site, a catchment plan has been prepared. This catchment plan highlights how surface water has been envisaged to fall and be captured by both the private and adopted networks. The plan also differentiates the roof catchments as they are required to be considered separately for urban creep.

The catchment plans can be seen in Appendix C and can be read in conjunction with the hydraulic modelling summary and results.

3.5 Proposed SuDS Features

A SuDS Assessment has been carried out using guidance set out in the Greater Manchester’s Sustainable Drainage Design Guide and NPPF. Priority was given to SuDS which provide multifunctional benefits and coordination was undertaken to ensure that SuDS are incorporated at the source in the adjacent building surroundings and landscaping.

Table 2 has been developed in accordance with this proposed hierarchy, which shows which SuDS are proposed to be incorporated into the development.

The SuDS elements which are being used for attenuation have been developed as far as feasible in accordance with local and national policy.

As detailed in Table 2, an optioneering assessment has been undertaken for a range of SuDS measures. However, with the exception of an attenuation tank, all other SuDS options have been deemed unviable due to site constraints. Infiltration-based SuDS cannot be accommodated within the internal courtyard as the required minimum 5-metre easement cannot be achieved. The site also does not include any flat roof areas capable of supporting blue or green roof systems.

Permeable paving was also considered; however, the internal courtyard footpath is located above a podium deck and is not within a direct rainfall catchment. Furthermore, as there is no vehicular access, the use of permeable paving would not provide any water quality benefits. Consequently, an attenuation tank represents the only viable SuDS option for the site. The attenuation tank will attenuate all surface water run-off from impermeable locations within the proposed development, which will be captured by rainwater pipes and channel drains.

SuDS Technique		Included	Examples
1	Rainwater use as a resource (for example rainwater harvesting, blue roofs for irrigation)	-	Blue / Green Roofs we’re discounted since Bauder’s system requires a 100–300mm attenuation zone; even at 100mm the build-up was around 460mm and, with the adjacent roof geometry, would have reduced first-floor ceiling height to an unacceptable level. As additional pitched roofs drain onto this area, a deeper zone would likely be needed. A blue roof over the walkways was also discounted due to both build-up and the maintenance burden (outlet inspections twice yearly and after major rain events), requiring additional access beyond what is viable.
2	Rainwater infiltration to ground at or close to source	-	Ground investigations are due to take place which will determine infiltration rates. However, due to >5-metre easement required from structures and the spatial constraints of the site, there are no viable locations for surface water infiltration within the site boundary.
3	Rainwater attenuation in green infrastructure features for gradual release (for example green roofs, rain gardens)	-	Blue-green roofs are not viable in this circumstance due to the roofs being pitched. Due to >5-metre easement required from structures and the spatial constraints of the site, there are no viable locations for surface water infiltration (i.e. rain gardens) within the site boundary.
4	Rainwater discharge direct to a watercourse (unless not appropriate)	-	There are no watercourses nearby to discharge into.
5	Controlled rainwater discharge to a surface water sewer or drain	✓	An attenuation tank is proposed to store surface water and discharge from the site via a flow control (Hydro-brake) into the existing 1070mm diameter public surface water sewer within Chapman Street.
6	Controlled rainwater discharge to a combined sewer	-	Since a separate surface water sewer is available, is not proposed to use the existing combined sewer.

Table 2 - Surface Water Drainage Hierarchy

3.5.1 Attenuation Crates

Geocellular attenuation crates will be utilised to form a single attenuation tank, capturing the run-off from roofs and impermeable areas. This will minimise the quantity of water conveyed by the adopted network during times of high flow.

The attenuation tank is proposed to be restricted through a Hydro-brake flow control device directly downstream of the system, before discharging into the public surface water network. The Hydro-brake will be set to a maximum discharge rate of 5l/s to meet the maximum surface water discharge rate set out by United Utilities and to align with the surface water policy and guidance set out by Manchester City Council for Brownfield sites. The crates have been refined to ensure that they are at full capacity for a 1 in 100-year event +45% climate change.

Table 3 details the attenuation tank properties and Appendix D details the hydraulic calculations.

	Catchment area (m²)	SuDS area (m²)	Attenuation Volume (m³)	Runoff rate (1:100 + 45%)
Attenuation Tank	1,260m²	80m²	83.6m³	4.9 l/s

Table 3 - Attenuation Tank Summary

Table 4 details the existing surface water run-off rates, proposed surface water run-off rates and the betterment being achieve between the current situation and proposals.

	Greenfield Rates l/s	Existing Rates l/s	Proposed Rates (with flow control) l/s	Betterment
Q _{1/2}	1.30l/s	6.18 l/s	4.8 l/s	20.71%
Q ₃₀	2.30l/s	15.53 l/s	4.9 l/s	68.44%
Q ₁₀₀	2.80l/s	19.67 l/s	4.9 l/s	75.08%
Q _{100+45%}	4.06l/s	28.52 l/s	4.9 l/s	82.81%

Table 4 - Existing and Proposed Run-off Rates

3.6 Exceedance Plan

The surface water drainage strategy will be designed to accommodate runoff from the 1 in 100 year +45% climate change return period. The proposed incorporation of SuDS measures means the site should not contribute any risk both on site and outside the development to the current scenario.

The below ground drainage network has been sized to ensure that exceedance should not occur in a regular scenario. However, in the case of blockages or an unforeseen drainage issue, the possible route of the overland flow needs to be considered. An exceedance plan for the site has been developed and included in Appendix E. The exceedance philosophy will be to try and imitate the existing condition of how above ground water flows through the site.

3.7 Water Quality

Surface water runoff from roofs is considered to be “clean”. As such, no additional pollution mitigation is deemed necessary. The inclusion of permeable paving and rain gardens is not considered to be feasible in this instance. Assessment of additional pollution mitigation features where suitable is to be explored through detailed design stage.

3.8 Drainage Inspection and Maintenance

In line with guidance set out in CIRIA C625 – Model Agreements for Sustainable Drainage Systems (SuDS), it is recommended that a private SuDS maintenance agreement is established as part of any future development. This agreement should take the form of a straightforward contract between the property owner and the appointed maintenance provider (the maintainer), to ensure the ongoing upkeep and effective operation of SuDS features that fall under private ownership.

A long-term maintenance strategy is essential to preserve the functionality, performance, and environmental benefits of the SuDS network. Future developments should clearly define maintenance responsibilities and account for the legal, financial, and operational implications of neglecting such duties. Failure to maintain SuDS infrastructure can result in reduced drainage capacity, increased flood risk, and non-compliance with planning or environmental regulations. It is therefore critical that maintenance is factored into both the design and operational lifecycle of any drainage scheme brought forward as part of site redevelopment.

4. Conclusion

A comprehensive SuDS strategy has been developed in line with the national and regional policy and guidance. Key design decisions have been made in collaboration with both authorities to manage, restrict, and treat surface water runoff in accordance with best practice and local guidance.

In accordance with the requested surface water discharge rates from United Utilities and guidance set out by Manchester City Council for Brownfield sites, the site is limited to a maximum of 5.0l/s for the 1 in 100-year event, with a +45% climate change allowance added. The site will result in a 82.81% betterment to the existing situation in a 1 in 100-year +45% climate change event.

The proposed outfalls will be separate, with a new foul water and surface water connection to the adopted sewers contained in Chapman Street. These connections will be secured with United Utilities via a Section 106 agreement.

Appendix A

United Utilities Pre-Development Enquiry

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

11.12.25

Dear ,

Pre-Development Enquiry for Land South of Shalom Christian Church UU Reference Number:
 08483785

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

Modelled Flood Risk [Please see the image on page 3 for details](#)

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

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

[Please see comment 2 of the attached guidance sheet](#)

Asset Protection

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

[Please see comment 3 of the attached guidance sheet and Working Near Our Pipelines Guidance document](#)

Foul Water

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

Our preferred point of discharge would be to the East of your proposed development at an unrestricted rate.

Manhole reference SD8302, **Grid reference** 388862, 396318

[Please see the images on page 3 for clarification](#)

Surface Water

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

[Please see comment 4 within the guidance sheet](#)

Infiltration

[Please see comment 4 within the guidance sheet](#)

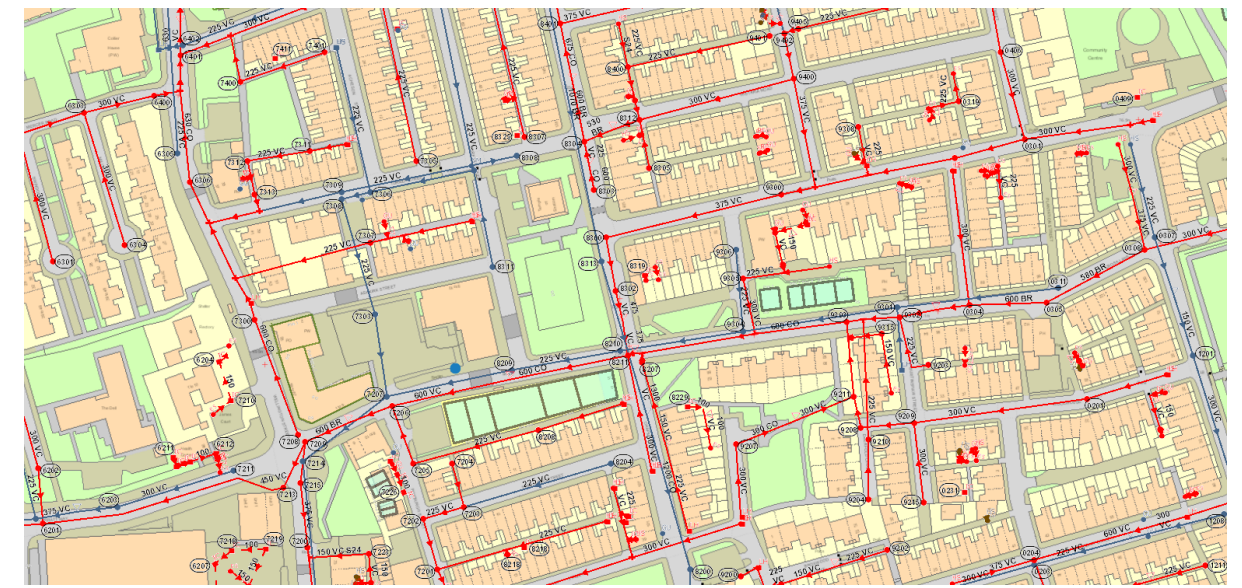
Public Sewer

United Utilities will consider a connection to the 1070mm diameter public surface water sewer within Chapman Street located East of the proposed site at a pass forward flow to be agreed by the Lead Local Flood Authority. United Utilities requests that any agreed rate does not exceed 5 l/s.

Manhole reference SD8313, **Grid reference** 3888854, 396331

[Please see images on page 3 for clarification](#)

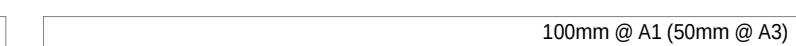
Site Images



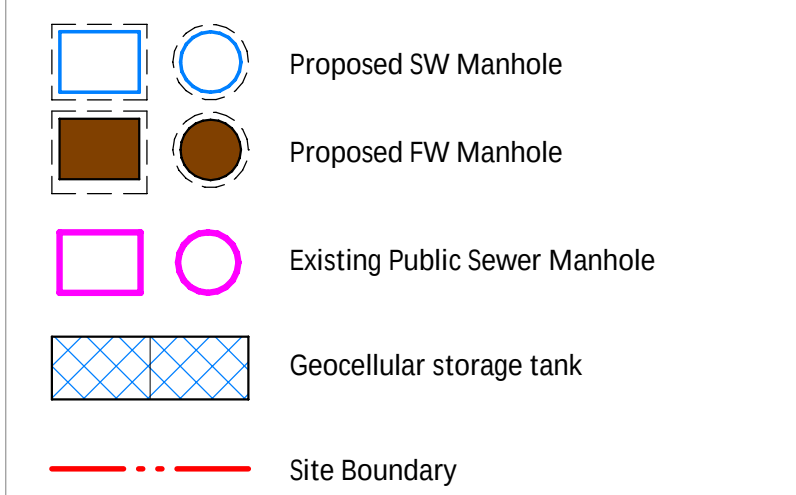


Appendix B

Proposed Drainage Strategy



- ### Drainage Key



**HEYNE
TILLET
STEEL**

STRUCTURAL &
CIVIL
ENGINEERS

www.hts.uk.com

Purpose of Issue	Stage 3	Scale at A1	1 : 100
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D1

Rev P1

Appendix C

Existing & Proposed Catchment Plan



Equipment Information					
Equipment	Manufacturer	Model	Serial Number	MKS REF	Date of Calibration
FM, Tx Transmitter	SPX Radiodetection	RD3777	77	RDW	7/17/77/7777
FM, Rx Receiver	SPX Radiodetection	RD3777	77	RDW	7/17/77/7777
GPSR	GIS Geomatics	77	77	GPSR	Day of Survey
GPS/TS	Leica/Geomatics	777	77	GPSR	N/A

DETECTION SURVEY REPORT

GENERAL
This survey was carried out in accordance with PAS 128:2022 (Publicly Available Specification from BS) by an experienced surveyor/surveyors, qualified to a minimum of QCF Level 3. After a pre-survey consultation with the client it was agreed to carry out the detection survey using methodology M7 as per Table 2 of the PAS 128:2022. The survey boundary has been shown on the drawing, please see linestyle section of the key for reference.

DESKTOP UTILITY REPORT
Prior to the survey commencing record information was gathered and compiled in a separate desktop utility report. This report should be read in conjunction with the information contained in this utility detection survey. **Record information was at the time of the survey the most recent available in accordance with the requirements of the PAS 128:2022.** For a full list of the providers searched, records received and the dates the information was obtained, please refer to the attachments page of the desktop utility report.

caution. There is no guarantee of the completeness and accuracy of this information. Site staff provided further local knowledge.

Drainage was lifted with pipe sizes and invert levels recorded from surface level, no allowance has been made for confined space entry unless otherwise stated. Wherever possible the chamber sizes have been recorded and positioned on the drawing. All connections from gullies, external rainwater pipes and external soil stacks have been proven wherever possible into manholes and sewer runs by radio sonde location and/or GPR. Where a saddle connection is present the position is assumed only until proven to QB2 or above. In instances where other detection methods were unsuccessful connections between manholes have been assumed to be straight and labelled as QB4. All drainage should be cross checked in critical areas by CCTV survey or verification survey type A.

- Are there any recommendations for further work?

WATER

- Were the different methodologies successful or not?
- Were there any water mains we expected to find but couldn't?
- Is there any conflict between the records and the water mains detected?

GAS

- Were the different methodologies successful or not?
- Were there any gas mains we expected to find but couldn't?
- Is there any conflict between the records and the gas mains detected?
- Are there any recommendations for further work?

- Were the different methodologies successful or not?
- Were there any electric cables we expected to find but couldn't?
- Is there any conflict between the records and the electric cables detected?

TELECOM
Telecom ducts have been traced with depths recorded. Due to laws protecting British Telecom apparatus all ducts have been located using remote detection techniques only and compared with record information. Chamber sizes have been recorded using GPR techniques wherever possible. For further information regarding BT apparatus please contact Openreach directly.

- Were there any CCTV ducts we expected to find but couldn't?
- Is there any conflict between the records and the CCTV ducts detected?
- Are there any recommendations for further work?

Some unknown targets identified on the drawing using GPR are classified as "non-linear targets". These are not consistent with what we expect to see when identifying a buried utility, and appear on the drawing as single targets with depths (i.e. not just two or more depth readings). This does not mean they are not utilities, we are unlikely to positively identify them as a utility. We would strongly recommend that further verification surveys (PAS 128:2022 survey type A) are carried out to identify these targets in critical areas.

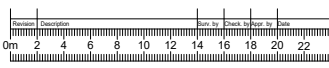
- List and explain any buried features other than utilities detected during the execution of the survey.

Quality Level	Description	Accuracy
Q1A (Q1-A)	A utility is expected to exist but cannot be detected - (AR), (ER), (V)	Unfound
Q1B (Q1-B) Q1C (Q1-C) Q1D (Q1-D)	Horizontal location only using one geophysical technique. No depth information - NE2.	± 500mm Horizontal Unfound
Q2B (Q2-B) Q2C (Q2-C)	Horizontal and vertical location only using one geophysical technique.	± 250mm or ± 40% of depth whichever is greater
Q3B (Q3-B) Q3P (Q3-P)	Horizontal and vertical location only using two geophysical techniques.	± 150mm or ± 15% of depth whichever is greater
Q4A (Q4-A)	Service verified in an open excavation, notes an inspection chamber / cover pit, at the point the service enters / exits the ground.	± 50mm Horizontal ± 50mm Vertical

Desktop Utility Records		
Utility Type	Provider Details	Data Acquired
Drainage	??	????????
Water	??	????????
Gas	??	????????
Electricity	??	????????
Telecom	Openreach	????????
CATV	??	????????
Tunnels & Pipelines	Linesearchbelow Ltd	????????

Project name: *** Survey Information**

Fieldwork dates	7/1/77	7/1/77	7/1/77	7/1/77	7/1/77	7/1/77	7/1/77	7/1/77	7/1/77
Weather conditions									
Ground conditions	Wet/Dry	-	-	-	-	-	-	-	-



Topographical and PAS 128:2022 Utility Survey

Heyne Tillett Steel Ltd

Chapman Street
Gorton
Manchester
M18 8LS

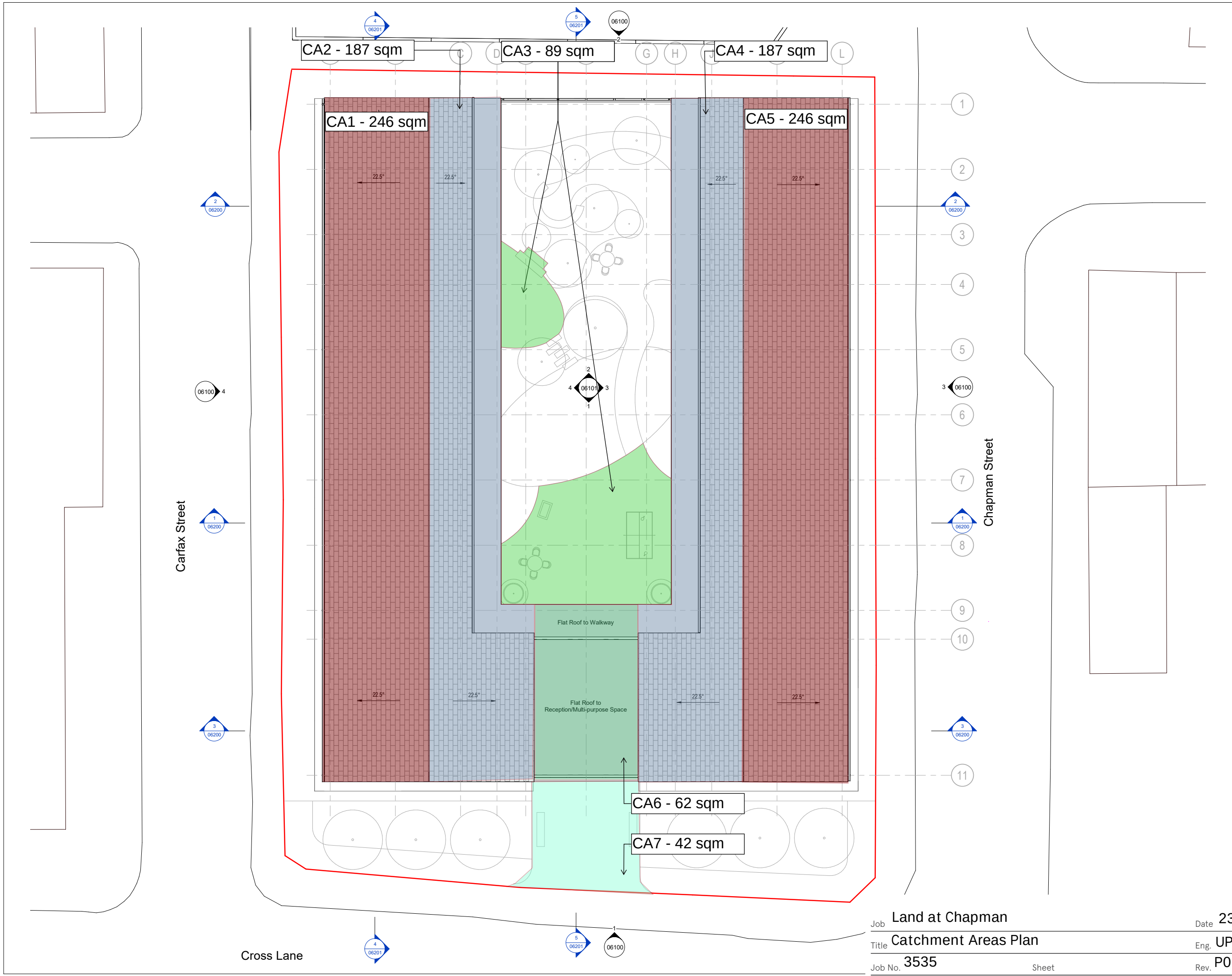
Scale: 1:200	Sheet Size: A0	Sheet Number: 1	Date: January 2026
Project Number: 37368	Rev. -	Surveyed by: LA	Checked by: AG
		Approved by: SGB	

mksurveys

www.mksurveys.com www.surveys4bim.co.uk

Head Office: Milton Keynes t: 01908 565561 e: mail@mksurveys.co.uk



Total Catchment Area:
1267 sqm

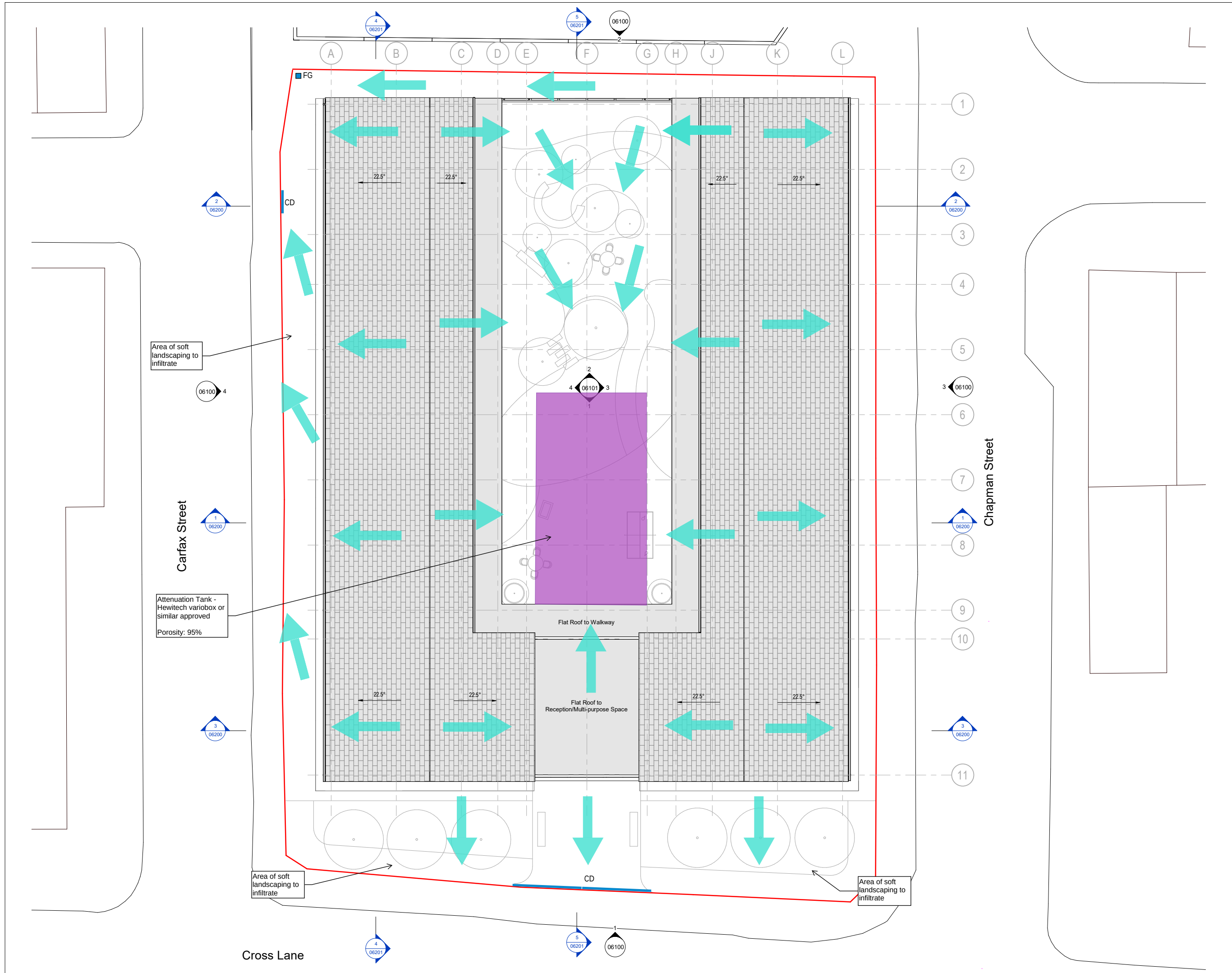
Appendix D

Hydraulic Calculations

 Causeway		Heyne Tillett Steel Ltd	File: 3535 - Chapman Street.pf Network: Storm Network Utsav Paudel 22/01/2026			Page 4																																																																																																																																																											
<p>Results for 1 year Critical Storm Duration. Lowest mass balance: 99.52%</p> <table><tr><th>Node Event</th><th>US Node</th><th>Peak (mins)</th><th>Level (m)</th><th>Depth (m)</th><th>Inflow (l/s)</th><th>Node Vol (m³)</th><th>Flood (m³)</th><th>Status</th></tr><tr><td>30 minute summer</td><td>MH01 - Flow Control</td><td>23</td><td>71.555</td><td>0.380</td><td>7.1</td><td>0.4302</td><td>0.0000</td><td rowspan="2">SURCHARGED</td></tr><tr><td>60 minute summer</td><td>Outfall</td><td>39</td><td>70.471</td><td>0.039</td><td>4.8</td><td>0.0000</td><td>0.0000</td></tr><tr><td>30 minute summer</td><td>Tank</td><td>21</td><td>71.549</td><td>0.049</td><td>12.3</td><td>3.7808</td><td>0.0000</td><td>OK</td></tr><tr><td>60 minute summer</td><td>MH02</td><td>40</td><td>70.616</td><td>0.041</td><td>4.8</td><td>0.0464</td><td>0.0000</td><td>OK</td></tr><tr><td>15 minute summer</td><td>Inlet 1</td><td>10</td><td>71.760</td><td>0.060</td><td>5.2</td><td>0.0675</td><td>0.0000</td><td>OK</td></tr><tr><td>15 minute summer</td><td>Inlet 2</td><td>10</td><td>71.744</td><td>0.044</td><td>3.4</td><td>0.0495</td><td>0.0000</td><td>OK</td></tr><tr><td>15 minute summer</td><td>Inlet 3</td><td>10</td><td>71.754</td><td>0.054</td><td>5.2</td><td>0.0607</td><td>0.0000</td><td>OK</td></tr><tr><td></td><td>REF1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>REF2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> <table><tr><th>Link Event (Outflow)</th><th>US Node</th><th>Link</th><th>DS Node</th><th>Outflow (l/s)</th><th>Velocity (m/s)</th><th>Flow/Cap</th><th>Link Vol (m³)</th><th>Discharge Vol (m³)</th></tr><tr><td>30 minute summer</td><td>MH01 - Flow Control</td><td>1.002</td><td>MH02</td><td></td><td>4.8</td><td>1.037</td><td>0.066</td><td>0.0677</td></tr><tr><td>30 minute summer</td><td>Tank</td><td>1.001</td><td>MH01 - Flow Control</td><td></td><td>7.1</td><td>0.377</td><td>0.105</td><td>0.4454</td></tr><tr><td>60 minute summer</td><td>MH02</td><td>1.003</td><td>Outfall</td><td></td><td>4.8</td><td>1.018</td><td>0.066</td><td>0.0339</td></tr><tr><td>15 minute summer</td><td>Inlet 1</td><td>1.000</td><td>Tank</td><td></td><td>5.2</td><td>1.231</td><td>0.277</td><td>0.0859</td></tr><tr><td>15 minute summer</td><td>Inlet 2</td><td>2.000</td><td>Tank</td><td></td><td>3.4</td><td>1.096</td><td>0.162</td><td>0.0539</td></tr><tr><td>15 minute summer</td><td>Inlet 3</td><td>3.000</td><td>Tank</td><td></td><td>5.2</td><td>1.374</td><td>0.225</td><td>0.0518</td></tr></table>										Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status	30 minute summer	MH01 - Flow Control	23	71.555	0.380	7.1	0.4302	0.0000	SURCHARGED	60 minute summer	Outfall	39	70.471	0.039	4.8	0.0000	0.0000	30 minute summer	Tank	21	71.549	0.049	12.3	3.7808	0.0000	OK	60 minute summer	MH02	40	70.616	0.041	4.8	0.0464	0.0000	OK	15 minute summer	Inlet 1	10	71.760	0.060	5.2	0.0675	0.0000	OK	15 minute summer	Inlet 2	10	71.744	0.044	3.4	0.0495	0.0000	OK	15 minute summer	Inlet 3	10	71.754	0.054	5.2	0.0607	0.0000	OK		REF1									REF2								Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)	30 minute summer	MH01 - Flow Control	1.002	MH02		4.8	1.037	0.066	0.0677	30 minute summer	Tank	1.001	MH01 - Flow Control		7.1	0.377	0.105	0.4454	60 minute summer	MH02	1.003	Outfall		4.8	1.018	0.066	0.0339	15 minute summer	Inlet 1	1.000	Tank		5.2	1.231	0.277	0.0859	15 minute summer	Inlet 2	2.000	Tank		3.4	1.096	0.162	0.0539	15 minute summer	Inlet 3	3.000	Tank		5.2	1.374	0.225	0.0518
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Appendix E

Exceedance Plan



Notes:
Rainwater in roof catchments to be captured by gullies and Rainwater Downpipes. All drop points to be routed towards attenuation tank for controlled discharge to the outfall.

Key:

Exceedance overland flow:

Channel Drain:

Site Boundary:

CD

