



DRAINAGE STRATEGY REPORT

PROPOSED RESIDENTIAL DEVELOPMENT

Church Avenue

Middleton

Rochdale

M24 2RB

Author:

Daniel Slattery

Client:

Harrison Construction Ltd

Doc Ref:

rep-tjba-HCL-church ave-DSR-031225.docx

Revision	Date	Reason
0	Dec 2025	Original to address planning condition.
1	Feb 2026	Updated to address LLFA.

T J Booth Associates.

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1 Introduction.

1.1 Purpose of Assessment.

To ensure drainage strategy from the proposed development is in accordance with standard guidance.

The Site will be assessed in accordance with the national drainage hierarchy for surface water disposal & exceedance characteristics, also considering the proposed end adopters and their requirements.

Regarding Site assessment, this report will appraise the existing and local drainage infrastructure, assess the suitability of the proposed development, giving recommendations for drainage design & management, specifically for approval of the LLFA/EA/sewerage undertakers, as applicable.

Drainage from new developments is to be designed to follow the national drainage hierarchy for surface water discharge to the following networks in order of preference:

- infiltration.
- Watercourse.
- surface water sewer.
- combined sewer.

Flow rates (existing & proposed) are to be estimated for approval using the following methodology:

- Development should aim to deliver greenfield runoff on greenfield sites up to a 100yr rainfall event, considering climate change.
- Development should aim for a minimum reduction in surface water runoff rates of 50% for Brownfield sites on a 1yr rainfall event.
- Development should be designed so that there is no flooding to the development in a 30yr event, and so that there is no property flooding in a 100yr event considering climate change.

2 Site Proposals.

See Location Plan in Appendix showing the area features.

The application is for the development of 2No. semi-detached dwellings on a plot of land on Church Avenue.

The dwellings will front onto Church Street, with driveways accessed immediately from the road, and soft landscaped gardens to the rear. Areas are as follows:

Roof area (impermeable)	200sqm (total 2 properties).
External hardstanding (permeable)	170sqm (total 2 properties).
Soft landscaping (permeable)	205sqm (total 2 properties).

Refer to Proposed Plan in appendix.

2.1 Derivation of Data, Surveys and Models.

2.1.1 Existing and proposed topography.

A topographic survey has previously been undertaken.

Northwest corner:	c133.40m aOD
Northeast corner:	c133.66m aOD
Southeast corner:	c133.20m aOD
Southwest corner:	c133.10m aOD

2.1.2 Site Investigation & Soakaway Test.

Site investigations undertaken 14.08.2024 revealed glacial boulder CLAY on the Church Street site, refer to separate report ref: rep-tjba-harrison-church ave-phs1_2_3env-rev0; and trial hole logs in the Appendix.

A further trial hole (TH3) was excavated for the purposes of infiltration testing, and the following strata was recorded:

TH3 GL: 133.30m aOD

0 – 400	Dark brown sandy gravelly silt (topsoil) MADE GROUND. Gravel is fine brick, coal, slate, ash.
400 – 850	Firm to stiff orange/brown CLAY.
850 – 1250	Medium dense orange/brown slightly gravelly very clayey SAND.
1250 – 1400	Very stiff red sandy CLAY.

Soakaway test results were calculated to obtain an infiltration rate coefficient for the subsoils, refer to calculation in the Appendix.

The rate of infiltration was very slow, with nominally 50mm infiltrating over a 4 hour period, and so was stopped. Infiltration rates of 10^{-6} are generally the cut off for point for infiltration, especially on smaller sites. The subsequent infiltration rate was calculated at 3.2×10^{-6} .

Excavations on the Church Street Site have been ongoing and have revealed stiff clay down to approximately 3-3.5m deep, refer to photos in Appendix.

2.1.3 BGS Geology.

BGS borehole records were obtained which show a borehole approximately 25-30m northeast of the site, sunk to 142m, and with the following well reference data:

- Reference: SD80NE3.
- Name: SLATTOCKS 1 ST JOHNS CHURCH.
- Water well reference: SD80/114.

At <u>Slattocks No.1 Borehole.</u>		Grid Ref. <u>10</u>					
Town or Village <u>Middleton</u> County <u>Lancs.</u> Six-inch quarter sheet <u>88 SE.E.</u>							
Exact site _____		(A rough sketch-map or a tracing from a map is very desirable)					
_____ in parish of _____							
Level of ground surface above sea-level (O.D.) _____ ft. If well starts below ground surface, state how far _____ ft.							
Shaft _____ ft., diameter _____ ft. Bore _____ ft. Diameter of bore: at top _____ ins.; at bottom _____ ins.							
Details of permanent lining tubes (internal diameters preferred) _____							
Water struck at depths of (feet) _____							
Rest-level of water ^{below} top of well _____ feet. Suction at _____ feet. Yield on _____ hours' test _____ days' test							
_____ gallons per _____ (with pump of capacity _____ g.p.h.); depressing water level to _____ feet below top. Time of recovery _____ hrs. Amount normally pumped daily _____ g.p.h. for _____ hours.							
Quality (attach copy of analysis if available) _____							
Sunk by _____ for Mr. _____ Date of well <u>1913</u>							
Information from <u>Chamber Colliery Co. Ltd.</u>							
For Survey use only). GEOLOGICAL CLASSIFICATION.	NATURE OF STRATA (and any additional remarks).	THICKNESS		DEPTH		T/m	D/m
		Feet.	Inches.	Feet.	Inches.		
Soil		1	6	1	6		0.45
Boulder Clay		38	6	40	-		12.19
Sand		12	-	52	-		15.84

The borehole recorded boulder clay local to the site nominally 12m thick.

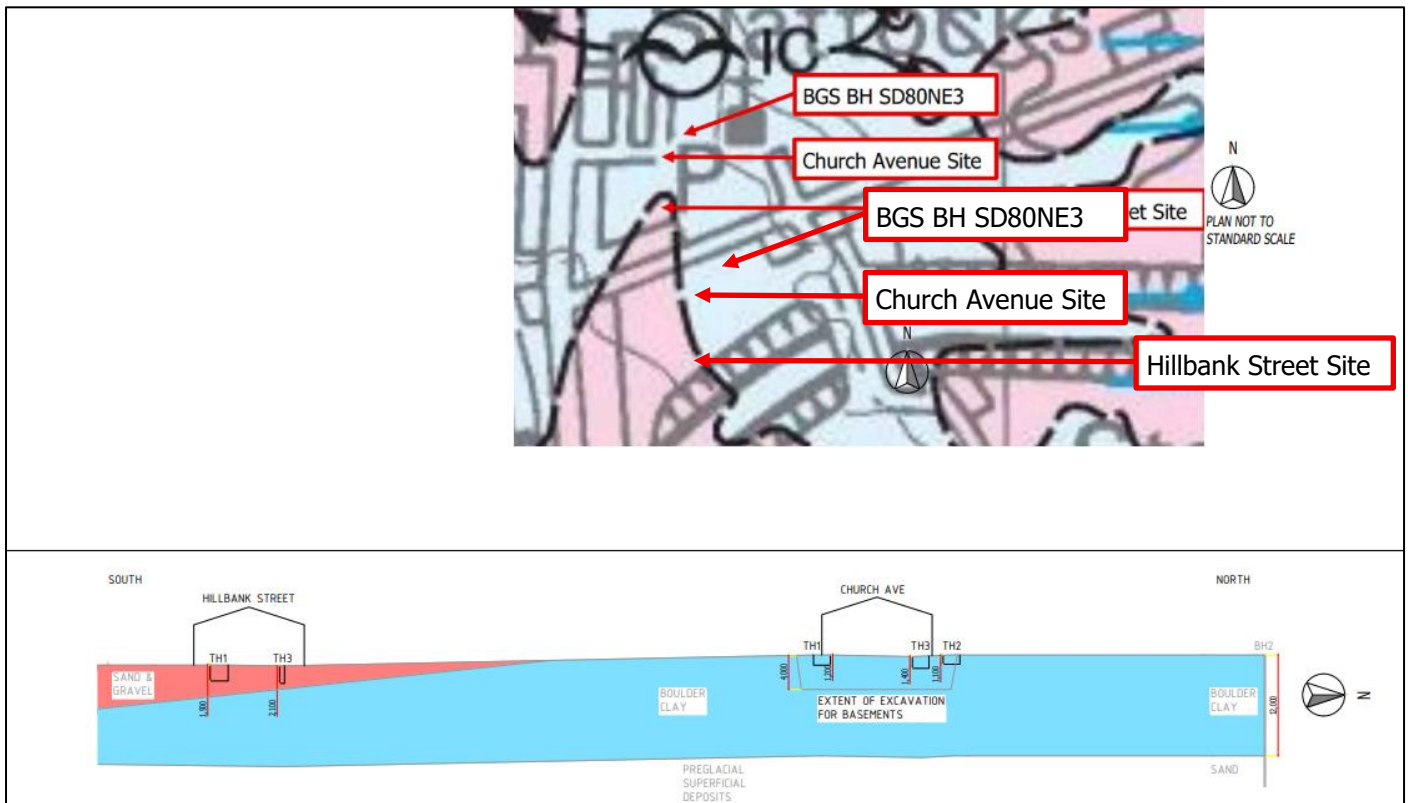
BGS maps show the Church Avenue site to be in an area covered with glacial clay deposits, which are generally impermeable and do not offer suitable infiltration rates for SUDS infiltration techniques.

The site is underlain by approx 12m of glacial clay with preglacial sand beneath. The site is directly in the middle of the preglacial path of the Roch, in an ancient and infilled river valley.

The sand & gravel noted to the south around Hillbank Street is not formed by a lense within the clay, but from glaciofluvial sheet deposits, ie meltwater outwash found at the front and margins of retreating glaciers.

Thus, there is no sand & gravel deposits expected to underlie the site at attainable depth which would provide a suitable medium for efficient infiltration systems such as soakaways.

A plan and section showing the geology of the area is illustrated below, taken from the BGS map, the BGS borehole data, and the site investigations taken to date:

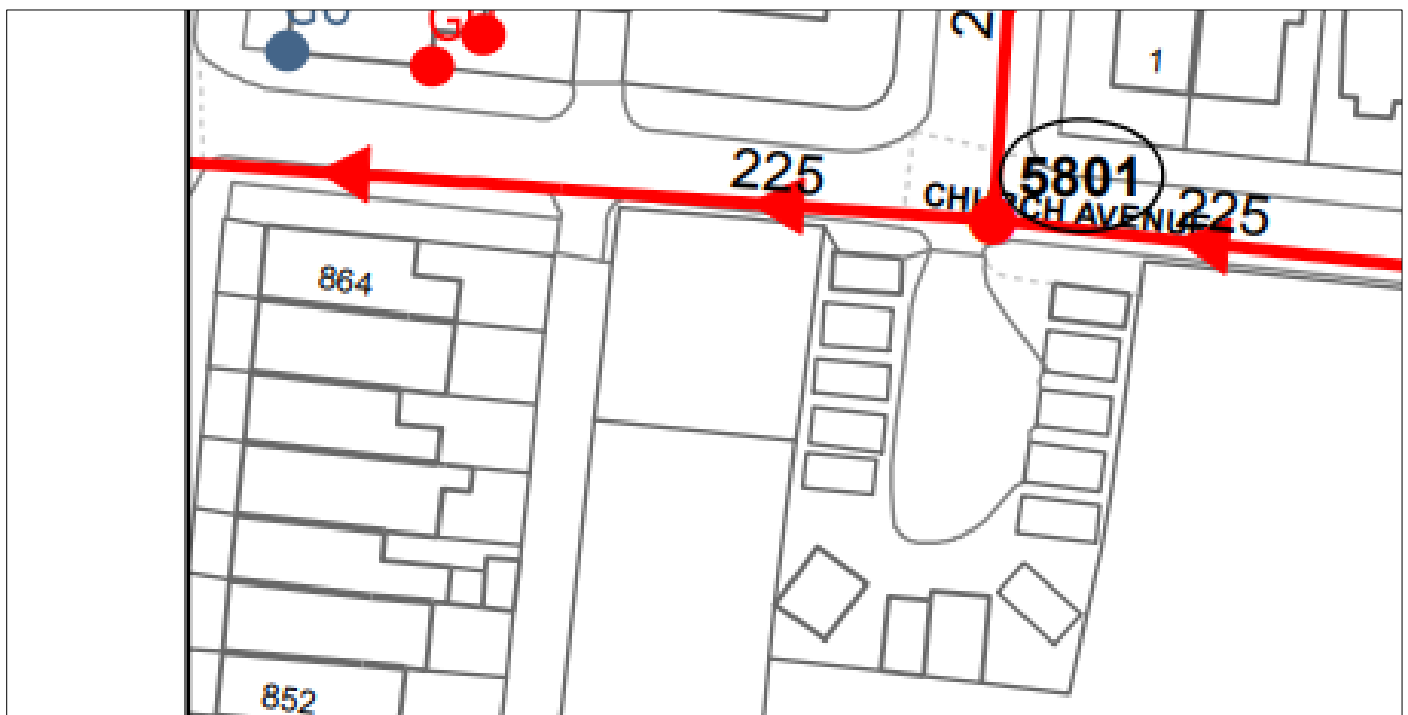


2.1.4 Drainage Surveys.

No previous onsite drainage.

No survey undertaken.

2.1.5 Sewer Undertaker Records.



There is a 225dia combined within Church Avenue.

3 Drainage Strategy.

3.1 Existing Site rainfall & drainage systems.

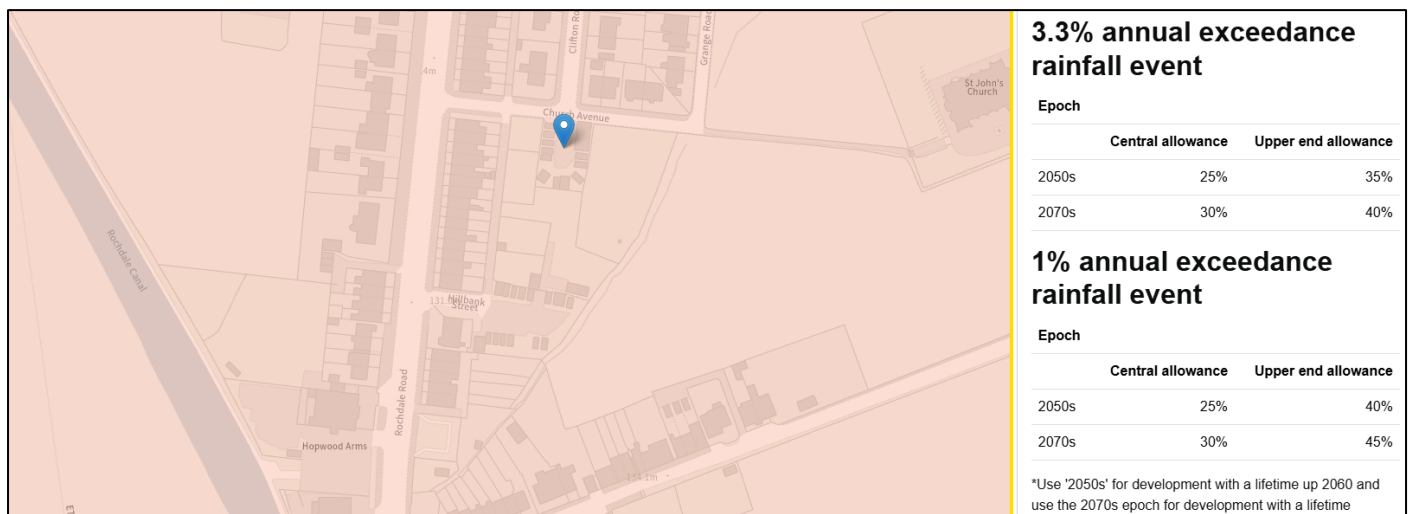
The site is considered greenfield for the purposes of the assessment.

Local rainfall characteristics are as follows:

SAAR:	1076mm
M5-60 rainfall depth:	20mm
'r' ratio M5-60 / M5-2day:	0.3
Hydrological region:	10

3.2 Rainfall Climate Change Impacts.

Climate change allowances to peak rainfall intensity are given nationally across the whole of England, based upon river management catchment areas. Refer to graphic inset:



Given the proposed residential end use, the 2070s epoch is considered suitable for climate change estimation cross referenced with the upper end allowance potential; which suggests the following climate change estimations to be used:

30yr rainfalls +40% climate change allowance.

100yr rainfalls +45% climate change allowance.

3.3 Proposed Surface Water Drainage.

Refer to separate drainage plan, ref: dwg-tjba-HCL-church ave-drainage plan & details-rev1.

3.3.1 Infiltration.

The local geology & borehole data indicates approximately 12m of glacial clay underlies the site.

Site investigations have been undertaken which prove stiff CLAY to 4m.

Infiltration tests have been undertaken in the glacial clay strata and found to be unsuitable for soakaways. Slow rates of 3.2×10^{-6} have been identified.

Roof areas will thus overload the soil and will need to be discharged by another method.

However, the clay does provide a degree of slow infiltration, and permeable paving for external area will be suitable for with subbase storage. Refer to total site permeable paving calculation in the appendix for subbase depth check.

3.3.2 Watercourse.

There are no watercourses adjacent to the site, nor within a suitable distance for connection.

3.3.3 SW Sewer.

No surface water sewers identified in the local area.

3.3.4 Combined Sewer.

The only suitable discharge method for surface water from roof areas is the combined sewer, after other methods have proven not to be feasible.

However, to reduce overall surface water volume from the site entering the public sewer, the following mitigation has been provided:

- Rainwater harvesting tanks to each property resulting in a minimum 2300l tank to each property.
- Permeable paving to all external areas.

3.3.4.1 Rainwater harvesting.

Rainwater harvesting (non potable) has been provided to each property to lower the surface water volume entering the sewer, and to ease burden on water supplies. The tanks have been designed as follows, resulting in 2300l per property:

Rainwater Harvesting Spreadsheet					
Client:	Harrison Construction Ltd.				
Job:	Church Ave, Slattocks, Rochdale				
Date:	19.02.2026				
CIRIA REPORT C753 SUDS MANUAL					
TABLE 11.4. RUNOFF COEFFICIENTS FOR RWH YIELD ANALYSIS (from BS8515:2009+A12013)			TABLE 11.5. RUNOFF COEFFICIENTS WITH INITIAL LOSSES FOR RWH YIELD ANALYSIS (from BS8515:2009+A12013)		
surface type	runoff coefficient		surface type	runoff coefficient	depression storage loss (mm)
pitched roof with profiled metal sheeting	0.95		pitched roof with profiled metal sheeting	1	0.2
pitched roof with tiles	0.9		pitched roof with tiles	1	0.4
flat roof without gravel	0.8		flat roof without gravel	0.95	1
flate roof with gravel	0.6		flate roof with gravel	0.95	2
green roof intensive	0.3		green roof intensive	0.8	2.0-6.0
green roof extensive	0.6		green roof extensive	0.8	2.0-4.0
permeable paving (conc blocks)	0.6		permeable paving (conc blocks)	0.9	4
road/pavement	0.75		road/pavement	0.9	1.5
hydraulic filter efficiency		0.9	use unless you have manufacturer approved efficiency coefficient		
THE INTERMEDIATE METHOD: WATER SUPPLY ONLY					
The intermediate method is based on calculating the lesser of 5% of the annual runoff yield and 5% of the annual property demand.					
The 5% represents approx 18 days of supply/demand to ensure a conservative estimate of storage available due to variability in rainfall/demand.					
BOX 11.2. RUNOFF YIELD CALCULATION					
YR = A x e x AAR x n x 0.05					
runoff volume (yield)	=	YR	4357.8	l	
collecting runoff area	=	A	100	m2	
runoff (yield) coefficient	=	e	0.9	dimensionless	
average annual rainfall depth	=	AAR	1076	mm	
hydraulic filter efficiency (ratio)	=	n	0.9	dimensionless	
YR = [AAR - (150 x ds)] x e2 x n x A x 0.05 (alternative method accounting for no of rainfall events/yr & initial losses)					
runoff volume (yield)	=	YR	4572	l	
depression storage	=	ds	0.4	mm	
runoff (yield) coefficient (after depression storage filled)	=	e2	1	dimensionless	
BOX 11.3. NON-POTABLE WATER DEMAND CALCULATION					
DN = Pd x n x 365 x 0.05					
total annual property demand for non-potable water	=	DN	2281.25	l	
daily demand per person	=	Pd	25	l	
number of occupants in the property	=	n	5		
STORAGE REQUIRED FOR WATER SUPPLY ONLY		=	2281.3	l	

3.3.4.2 Peak flow rates.

Due to the reduction in surface area and associated runoff to the public sewer, the peak flow rates are low from the proposed roof areas, and are now below the minimum flow rate United Utilities specify into the public sewer. This flow rate will be lowered even further by the capacity of the harvesting system.

The following calculation refers to the total roof area discharge to the combined system:

MODIFIED RATIONAL METHOD					
Client:	Harrison Construction Ltd.				
Site:	Church Ave, Slattocks, Rochdale.				
PEAK RUNOFF RATE ESTIMATION					
in accordance with CIRIA C753, pgs 519-520, EQ. 24.5					
modified rational method		$Q = 2.78 C i A$	return period (Tr)	rainfall mintensity (mm/hr)	runoff rate (l/s)
site area:	200	sqm	1yr	19.10	1.06
	0.02	Ha	30yr	47.10	2.62
volumetric runoff coefficient Cv:	1		100yr	61.40	3.41
dimensionless routing coefficient Cr:	1		30yr+40%	65.94	3.67
runoff coefficient C (Cv x Cr):	1		100yr+45%	89.03	4.95
rainfall intensity assumptions:					
1yr rainfall	19.1	mm/hr	synthetic 1yr TEDDS calculation		
30yr rainfall	47.1	mm/hr	constant lower intensity estimation, CIRIA C753		
100yr rainfall	61.4	mm/hr	constant upper intensity estimation, CIRIA C753		
development type	residential	enter commercial/aggricultural or residential			
30yr rainfall climate change allowance	40	%	0.4	ratio	
100yr rainfall climate change allowance	45	%	0.45	ratio	

3.4 Proposed Foul Water Drainage.

It is proposed to connect foul drainage to the 225dia sewer in Church Avenue. SW and foul flows will be kept separate on site and combined in the last manhole prior to connection.

3.5 Adoption.

The drainage systems drainage will remain private.

3.6 Maintenance.

Maintenance of suds will be private.

4 Conclusion & Residual risks.

This report should be suitable for LPA & UU approval.

Signed.....  .

D.S. Slattery BSc (Hons).

T J Booth Associates.

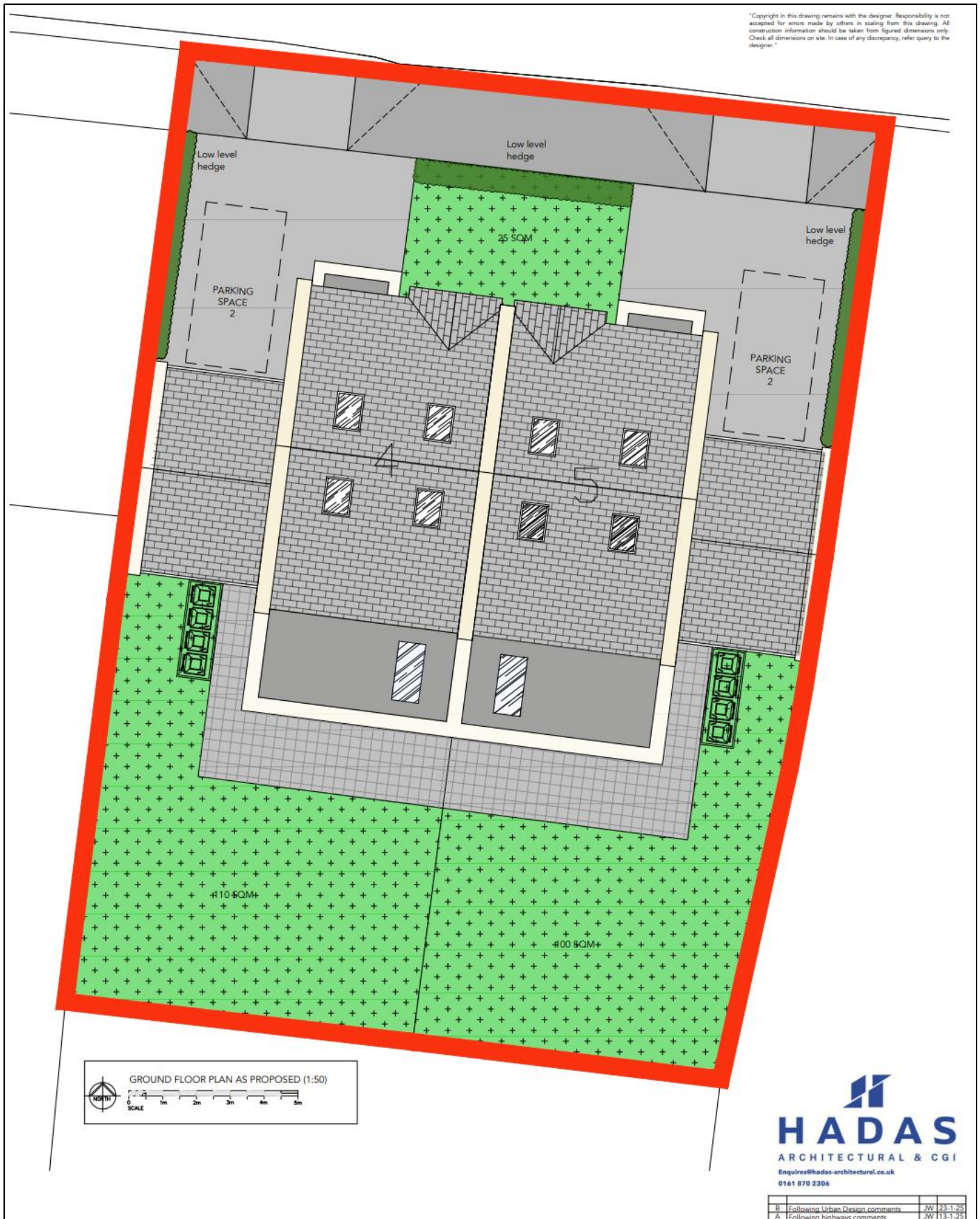
Authorised...  .

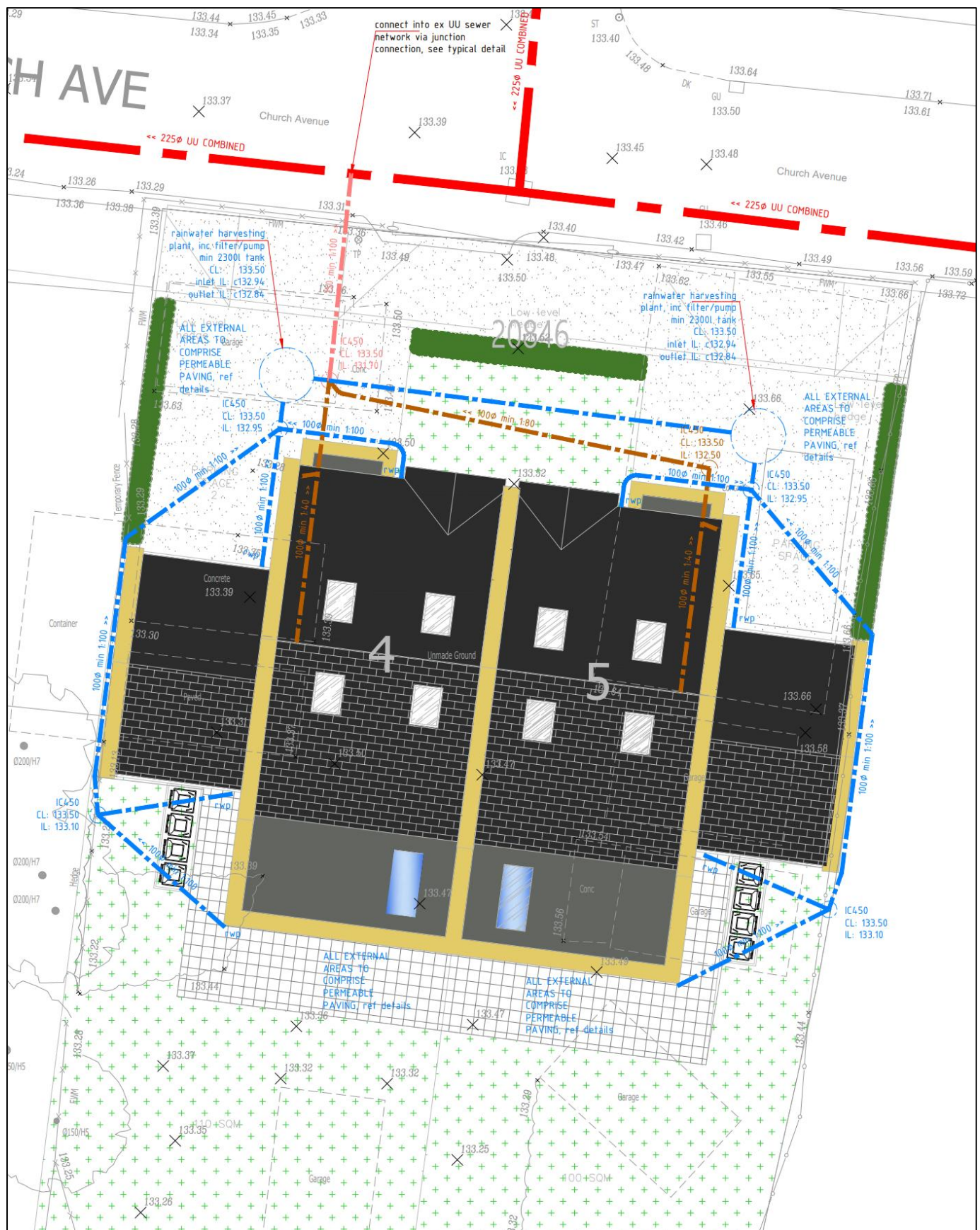
T J Booth BSc (Hons), C. Eng. C. Env. MICE.

T J Booth Associates.

5 Appendix.**5.1 Location Plan.**

5.2 Proposed Site Plan.



5.3 Proposed Drainage Plan (Excerpt).

5.4 Trial Hole Plan & Logs.



SITE INVESTIGATION NOTES:

THs1-2 trial holes tjba 27.08.2024
 S1-2 soil samples tjba 27.08.2024
 TH3 trial hole/infiltration test tjba 27.06.2025

T J BOOTH ASSOCIATES

20A Eastgate Street
 Rochdale
 Lancashire
 OL16 1DH
 Tel: 01706 868288

CONSULTING CIVIL & GEOTECHNICAL ENGINEERS

Harrison Construction Ltd / Church Ave, Middleton

SITE INVESTIGATION PLAN

AMENDMENTS/ ISSUES			
1	SW infiltration test hole TH3	jun 2025	ds
0	original	aug 2024	ds
REVISION	REASON/ CHANGE	DATE	BY

FILE NAME: dwg-tjba-hillbank st & church ave-170725

SCALE: 1 : 250 @ A4

TRIAL PIT LOG

Trial pit reference TH1

Sheet 1 of 1

Water	Reduced Level (m)	Legend	Depth (m)	Description
	100.00			
	99.60	X X X X	(0.40) 0.40	MADE GROUND: dark brown-black SAND & GRAVEL. Gravel is ash, brick, stone, slate & macadam. (S1)
	99.40	- - -	0.60	Firm dark brown slightly sandy slightly gravelly CLAY
	99.10	X X X X	(0.30) 0.90	Firm light brown-grey mottled very sandy slightly gravelly CLAY. (CS1)
	98.80	X o X o o X o X	(0.30) 1.20	Very stiff orange-brown/grey mottled slightly gravelly CLAY. Occasional cobbles & fine gravel of reworked coal. (CS2)
				Trial pit ends

Not shown to scale

Additional notes: No groundwater.



TRIAL PIT LOG

Trial pit reference TH2

Sheet 1 of 1

Water	Reduced Level (m)	Legend	Depth (m)	Description
	100.00			
	99.80	X X X X	(0.20) 0.20	Made ground: dark brown-black SAND & GRAVEL. Gravel is ash, brick, stone, slate & macadam. (S2)
	99.65	- - -	0.35	Firm to stiff dark brown CLAY
		- : - : - : : - : - : - - : - : - : : - : - : -	(0.75)	Stiff light brown slightly sandy CLAY
	98.90	: - : - : -	1.10	
				Trial pit ends

Not shown to scale

Additional notes: No groundwater.





Site dig to approx 4m.

5.5 Infiltration Calculations.

soakaway test

as per BRE Digest 365

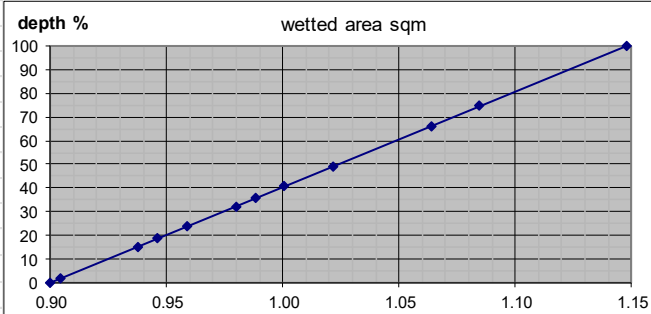
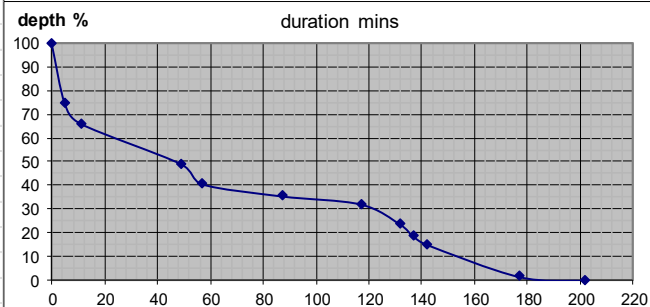
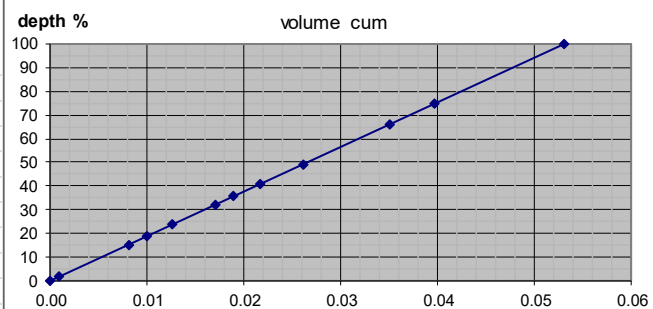
client Harrison Construction
project Church Ave
locn TH3
date 27.06.2025

provide a clean vertical sided pit or trench

pit length	1.5 m
pit width	0.6 m
pit depth b GL	1.4 m
pit equiv dia	0.3 m
pit base area	0.9 sqm

TEST	DATE	INFILTRATION RATE m/s
TEST 1	23rd oct 07	3.2E-06
TEST 2	24th oct 07	#DIV/0!
TEST 3	25th oct 07	#DIV/0!
Design infiltration rate		#DIV/0!

test 1		23rd oct 07							
		duration	depth from GL	depth from base	depth from wt	% depth	wetted area	volume	
hr	min	mins	m	m	m		sqm	cu m	
11	33	0	1.04	0.36	0.059	100	1.15	0.05	
11	38	5	1.055	0.345	0.044	75	1.08	0.04	
11	44	11	1.06	0.34	0.039	66	1.06	0.04	
12	22	49	1.07	0.33	0.029	49	1.02	0.03	
12	30	57	1.075	0.325	0.024	41	1.00	0.02	
13	0	87	1.078	0.322	0.021	36	0.99	0.02	
13	30	117	1.08	0.32	0.019	32	0.98	0.02	
13	45	132	1.085	0.315	0.014	24	0.96	0.01	
13	50	137	1.088	0.312	0.011	19	0.95	0.01	
13	55	142	1.09	0.31	0.009	15	0.94	0.01	
14	30	177	1.098	0.302	0.001	2	0.90	0.00	
14	55	202	1.099	0.301	0	0	0.90	0.00	



volume @ 75% depth	V75	0.04	cu m
volume @ 25% depth	V25	0.014	cu m
time @ 75% depth	t75	4	mins
time @ 25% depth	t25	135	mins
pit surface area @ 50% depth	Ap50	1.025	sq m
infiltration rate	f	3.2E-06	m/s

5.6 Microdrainage Calculations (Permeable Paving).

T J Booth Associates			Page 1			
104 Yorkshire St Rochdale Lancashire OL16 1JY		tot extnl perm surfaces harrison construction church street slatlocks				
Date feb 2026 - rev0 File CALC-T~2.SRC		Designed By ds Checked By				
Micro Drainage		Source Control W.10.4				
Summary of Results for 100 year Return Period (+45%)						
Half Drain Time : 303 minutes						
Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m³)	Status
15 Summer	0.3	0.3	133.3027	0.0528	3.1	FLOOD RISK
30 Summer	0.3	0.3	133.3268	0.0768	4.5	FLOOD RISK
60 Summer	0.3	0.3	133.3522	0.1023	6.0	FLOOD RISK
120 Summer	0.3	0.3	133.3752	0.1253	7.4	FLOOD RISK
180 Summer	0.3	0.3	133.3842	0.1343	7.9	FLOOD RISK
240 Summer	0.3	0.3	133.3882	0.1383	8.2	FLOOD RISK
360 Summer	0.3	0.3	133.3923	0.1423	8.4	FLOOD RISK
480 Summer	0.3	0.3	133.3938	0.1438	8.5	FLOOD RISK
600 Summer	0.3	0.3	133.3932	0.1433	8.5	FLOOD RISK
720 Summer	0.3	0.3	133.3918	0.1418	8.4	FLOOD RISK
960 Summer	0.3	0.3	133.3867	0.1368	8.1	FLOOD RISK
1440 Summer	0.3	0.3	133.3732	0.1233	7.3	FLOOD RISK
2160 Summer	0.3	0.3	133.3517	0.1018	6.0	FLOOD RISK
2880 Summer	0.3	0.3	133.3333	0.0833	4.9	FLOOD RISK
4320 Summer	0.3	0.3	133.3073	0.0572	3.4	FLOOD RISK
5760 Summer	0.3	0.3	133.2962	0.0462	2.7	O K
7200 Summer	0.2	0.2	133.2903	0.0402	2.4	O K
8640 Summer	0.2	0.2	133.2858	0.0357	2.1	O K
10080 Summer	0.2	0.2	133.2823	0.0322	1.9	O K
15 Winter	0.3	0.3	133.3112	0.0613	3.6	FLOOD RISK
30 Winter	0.3	0.3	133.3383	0.0883	5.2	FLOOD RISK
60 Winter	0.3	0.3	133.3672	0.1173	6.9	FLOOD RISK
120 Winter	0.3	0.3	133.3938	0.1438	8.5	FLOOD RISK
180 Winter	0.3	0.3	133.4048	0.1547	9.2	FLOOD RISK
240 Winter	0.3	0.3	133.4102	0.1602	9.5	FLOOD RISK
360 Winter	0.3	0.3	133.4142	0.1642	9.7	FLOOD RISK
480 Winter	0.3	0.3	133.4142	0.1642	9.7	FLOOD RISK
600 Winter	0.3	0.3	133.4122	0.1622	9.6	FLOOD RISK
720 Winter	0.3	0.3	133.4093	0.1593	9.4	FLOOD RISK
Storm Duration (mins)	Rain (mm/hr)		Time-Peak (mins)			
15 Summer	89.23		18			
30 Summer	61.54		33			
60 Summer	40.51		62			
120 Summer	25.63		122			
180 Summer	19.23		180			
240 Summer	15.63		230			
360 Summer	11.65		288			
480 Summer	9.44		352			
600 Summer	8.01		420			
720 Summer	7.00		490			
960 Summer	5.65		626			
1440 Summer	4.17		894			
2160 Summer	3.07		1276			
2880 Summer	2.46		1644			
4320 Summer	1.81		2332			
5760 Summer	1.45		3000			
7200 Summer	1.23		3744			
8640 Summer	1.07		4416			
10080 Summer	0.95		5144			
15 Winter	89.23		18			
30 Winter	61.54		32			
60 Winter	40.51		62			
120 Winter	25.63		120			
180 Winter	19.23		176			
240 Winter	15.63		232			
360 Winter	11.65		336			
480 Winter	9.44		378			
600 Winter	8.01		456			
720 Winter	7.00		534			
(c)1982-2006 Micro Drainage						

T J Booth Associates

104 Yorkshire St
Rochdale
Lancashire OL16 1JY

Date feb 2026 - rev0

File CALC-T~2.SRC

Micro Drainage

tot extnl perm surfaces
harrison construction
church street slattocks

Designed By ds

Checked By

Source Control W.10.4

Page 2



Summary of Results for 100 year Return Period (+45%)

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m³)	Status
960 Winter	0.3	0.3	133.4003	0.1503	8.9	FLOOD RISK
1440 Winter	0.3	0.3	133.3783	0.1283	7.6	FLOOD RISK
2160 Winter	0.3	0.3	133.3448	0.0948	5.6	FLOOD RISK
2880 Winter	0.3	0.3	133.3183	0.0683	4.0	FLOOD RISK
4320 Winter	0.2	0.2	133.2948	0.0447	2.7	O K
5760 Winter	0.2	0.2	133.2867	0.0367	2.2	O K
7200 Winter	0.2	0.2	133.2813	0.0312	1.8	O K
8640 Winter	0.1	0.1	133.2773	0.0272	1.6	O K
10080 Winter	0.1	0.1	133.2742	0.0242	1.4	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
960 Winter	5.65	684
1440 Winter	4.17	968
2160 Winter	3.07	1360
2880 Winter	2.46	1700
4320 Winter	1.81	2332
5760 Winter	1.45	3008
7200 Winter	1.23	3744
8640 Winter	1.07	4488
10080 Winter	0.95	5152

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104 Yorkshire St
Rochdale
Lancashire OL16 1JY

tot extnl perm surfaces
harrison construction
church street slattocks

Date feb 2026 - rev0
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Rainfall Details

Region	ENG+WAL	Cv (Summer)	0.750	Summer Storms	Yes
Return Period (years)	100	Cv (Winter)	0.840	Winter Storms	Yes
M5-60 (mm)	20.000	Shortest Storm (mins)	15	Climate Change %	+45
Ratio-R	0.300	Longest Storm (mins)	10080		

Time / Area Diagram

Total Area (ha) = 0.017

Time	(mins)	Area
from:	to:	(ha)
0	4	0.017

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Porous Car Park Details

Infil Coef - Base (m/hr)	0.011520	Invert Level (m)	133.250
Membrane Percolation (mm/hr)	1000	Cover Level (m)	133.500
Safety Factor	2.0	Slope (1:x)	0.0
Porosity	0.35	Max Percolation (l/s)	46.9
Length (m)	13.0	Depression Storage (mm)	5
Width (m)	13.0	Evaporation (mm/day)	3

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5.7 UU Plan.

