



SIMON DENT ASSOCIATES

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Consulting Engineers to the Civil and Water Industry

Civil – Infrastructure – Flood Risk – Building Drainage -Public Health

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1593_251010

10TH OCTOBER 2025

Mr Paul Burgess

Lewis & Co
2 Port Hall Road, Brighton, BN1 5PD

BY EMAIL ONLY

Dear Paul

1593 - 203 JUNCTION ROAD BURGESS HILL RH15 0NX

Please see attached our Infiltration Testing Summary for your issue to the planners in response to their email dated 2nd October 2025.

I do note there is a typo on the drawings which we indicate the rate as 1.35×10^{-5} m/s whereas calculation indicated this as 1.27 but the error makes little difference in the storm water strategy. I have altered the main drawing to suit this which is also attached and perhaps you can relay this to the planning officer.

If you have any queries, please contact me on 0754 658 3150.

Kind regards,

Simon Dent
For Simon Dent Associates

FOR 201 JUNCTION ROAD BURGESS HILL WEST SUSSEX RH15 0NX

BRE 365 soakaway testing was requested by SDA to be carried out for the site. The client carried these out with SDA present partly. The test results were provided for two differing locations as shown on the test pit plan below.



Each pit was excavated to 2.0m x 1.0m x 1.5m with the sides holding firm throughout.

Testing was carried out in November 2019 within two pits within.

No groundwater was encountered during the tests which were carried out in November 2019.

Each pit was filled and emptied three times (albeit starting depths reduced due to time taken on the initial test) over the consecutive days (due to the time taken to empty) with the average result used with a factor of safety to determined new soakaway and drainage blanket sizing.

Initially depths were taken at 10 min increments but subsequent recording were taken on the hour due to time taken. A one-day limit was placed on each test.

Where the test does not fully drain, tests results are established using the water level drop from 75% to 25% of the actual drained depth as is permitted in the BRE 365 test. Test locations are in the location at which the design required at the time.



Fig 1 - Soakaway test pits in 2019


Results

The client was provided with the forms to fill in the SDA test record depths for the given time and infiltration results established therefrom. The test results are shown attached with the results summary below with the resultant chosen design infiltration rate.

Pit and Test No.	Test result
Pit 1 Test 1	1.60×10^{-5} m/s
Pit 1 Test 2	0.89×10^{-5} m/s
Pit 1 Test 3	0.96×10^{-5} m/s
Pit 2 Test 1	1.48×10^{-5} m/s
Pit 2 Test 2	0.89×10^{-5} m/s
Pit 2 Test 3	1.83×10^{-5} m/s

With the resultant test rates, the average of the six was taken resulting in the design figure of 1.27×10^{-5} m/s.

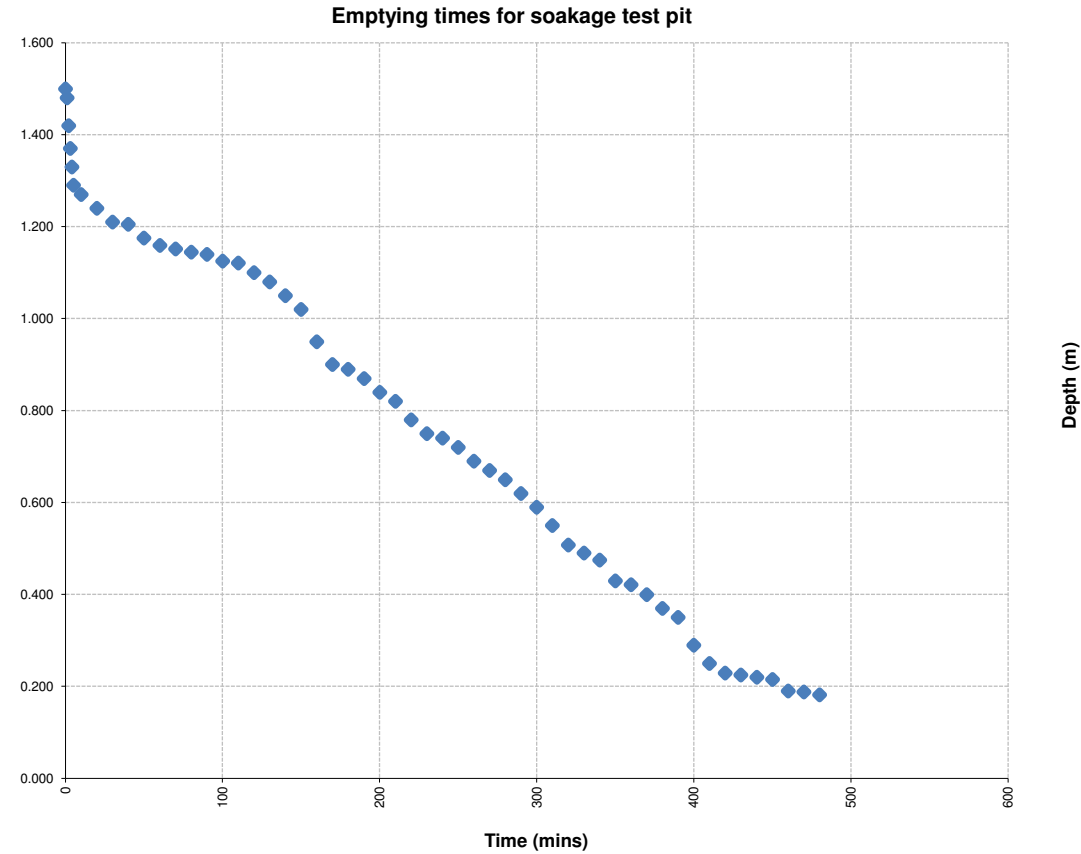
This rate has been factored by 1.5 for design purposes.

 <div style="display: inline-block; vertical-align: middle;"> <h1 style="margin: 0;">SIMON DENT ASSOCIATES</h1> </div>		14 Sullington Way Shoreham-By-Sea West Sussex BN43 6PJ t 0754 658 3150 e simondent@live.co.uk	
Project Title:	203 Junction Road Burgess Hill - PIT No. 1 - Test 1	No.:	1593
Infiltration test and rate calculation			

1. Permeability rate calculations				2. Test Outflow results		3. Infiltration coefficient (q) (m/h)	
Test pit L:	2.00	Tot vol.:	3	a _{sq} (sq.m):	4.50	Rate (q) provided by SI=	
Test pit W:	1.00	a _{p50} :	6.5	Inflow (cu.m):	#REF!	Calculated Soil Rate (f)=	0.05793
Test pit D:	1.50	V _{p75-25} :	1.318	Outflow(cu.m):	1.50		
Free vol (%):	100	t _{p75-25} :	210	Storage(cu.m):	#REF!		
Effective depth:		1.318					
Infiltration rate (f):		1.609E-05					

Log of falling head test

Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth
5	1290	105		205		305		405	
10	1270	110	1121	210	820	310	550	410	250
15		115		215		315		415	
20	1240	120	1100	220	780	320	508	420	229
25		125		225		325		425	
30	1210	130	1080	230	750	330	490	430	225
35		135		235		335		435	
40	1205	140	1050	240	740	340	475	440	220
45		145		245		345		445	
50	1175	150	1020	250	720	350	430	450	215
55		155		255		355		455	
60	1159	160	950	260	690	360	421	460	190
65		165		265		365		465	
70	1152	170	900	270	670	370	400	470	188
75		175		275		375		475	
80	1145	180	890	280	650	380	370	480	182
85		185		285		385		485	
90	1140	190	870	290	620	390	350	490	
95		195		295		395		495	
100	1125	200	840	300	590	400	290	500	





Project Title:

203 Junction Road Burgess Hill - PIT No. 1 - Test 2

No.:

1593

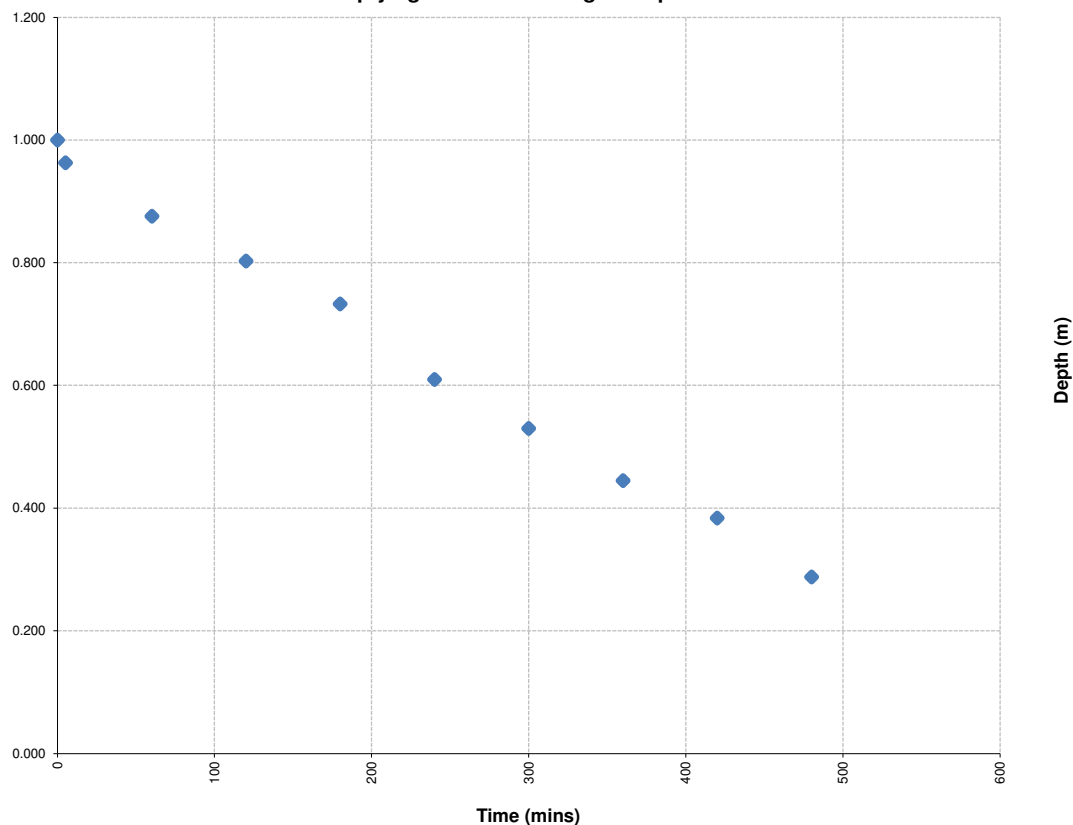
Infiltration test and rate calculation

1. Permeability rate calculations				2. Test Outflow results		3. Infiltration coefficient (q) (m/h)	
Test pit L:	2.00	Tot vol.:	3	a _{sq} (sq.m):	4.50	Rate (q) provided by SI=	
Test pit W:	1.00	a _{p50} :	6.5	Inflow (cu.m):	#REF!	Calculated Soil Rate (f)=	0.03206
Test pit D:	1.50	V _{p75-25} :	0.712	Outflow (cu.m):	1.50		
Free vol (%):	100	t _{p75-25} :	205	Storage (cu.m):	#REF!		
Effective depth:							
Infiltration rate (f):							

Log of falling head test

Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth
5	963	105		205		305		405	
10		110		210		310		410	
15		115		215		315		415	
20		120	803	220		320		420	384
25		125		225		325		425	
30		130		230		330		430	
35		135		235		335		435	
40		140		240	610	340		440	
45		145		245		345		445	
50		150		250		350		450	
55		155		255		355		455	
60	876	160		260		360	445	460	
65		165		265		365		465	
70		170		270		370		470	
75		175		275		375		475	
80		180	733	280		380		480	288
85		185		285		385		485	
90		190		290		390		490	
95		195		295		395		495	
100		200		300	530	400		500	

Emptying times for soakage test pit





Project Title:

203 Junction Road Burgess Hill - PIT No. 1 - Test 3

No.:

1593

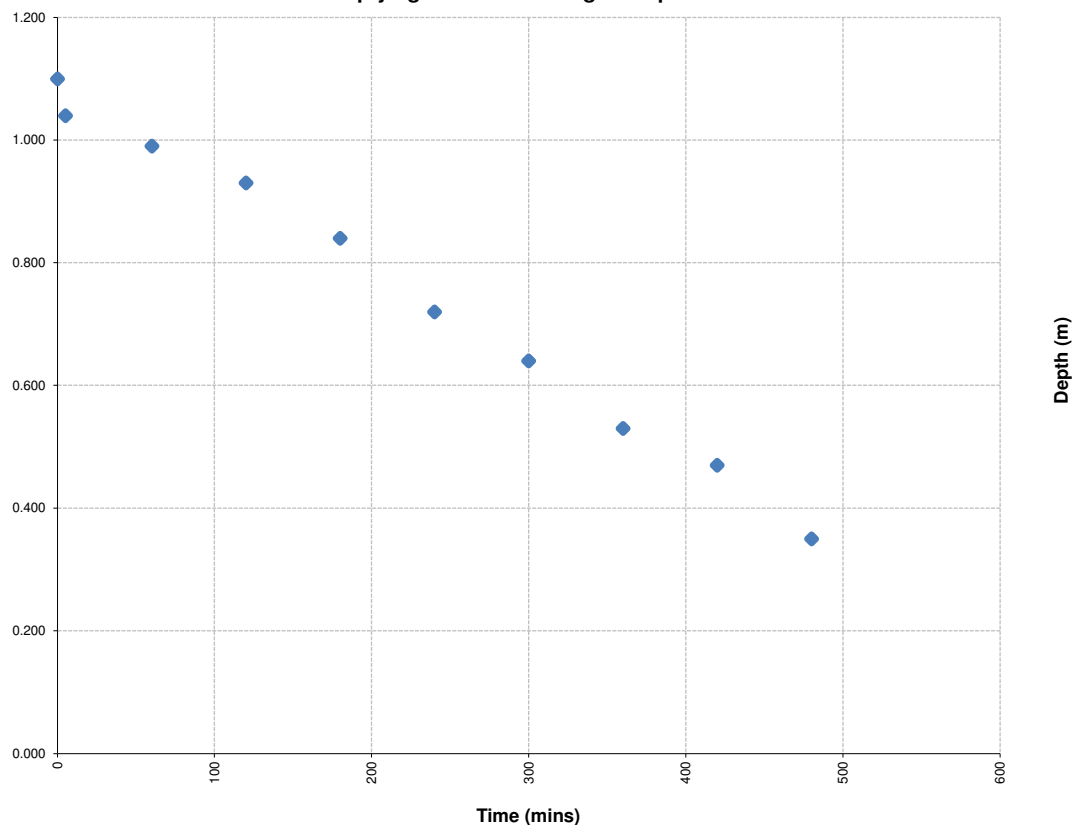
Infiltration test and rate calculation

1. Permeability rate calculations			2. Test Outflow results		3. Infiltration coefficient (q) (m/h)	
Test pit L:	2.00	Tot vol.:	3	a ₅₀ (sq.m):	4.50	Rate (q) provided by SI=
Test pit W:	1.00	a _{p50} :	6.5	Inflow (cu.m):	#REF!	Calculated Soil Rate (f)=
Test pit D:	1.50	V _{p75-25} :	0.75	Outflow (cu.m):	1.50	0.03462
Free vol (%):	100	t _{p75-25} :	200	Storage (cu.m):	#REF!	
Effective depth:		0.750				
Infiltration rate (f):		9.615E-06				

Log of falling head test

Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth
5	1040	105		205		305		405	
10		110		210		310		410	
15		115		215		315		415	
20		120	930	220		320		420	470
25		125		225		325		425	
30		130		230		330		430	
35		135		235		335		435	
40		140		240	720	340		440	
45		145		245		345		445	
50		150		250		350		450	
55		155		255		355		455	
60	990	160		260		360	530	460	
65		165		265		365		465	
70		170		270		370		470	
75		175		275		375		475	
80		180	840	280		380		480	350
85		185		285		385		485	
90		190		290		390		490	
95		195		295		395		495	
100		200		300	640	400		500	

Emptying times for soakage test pit





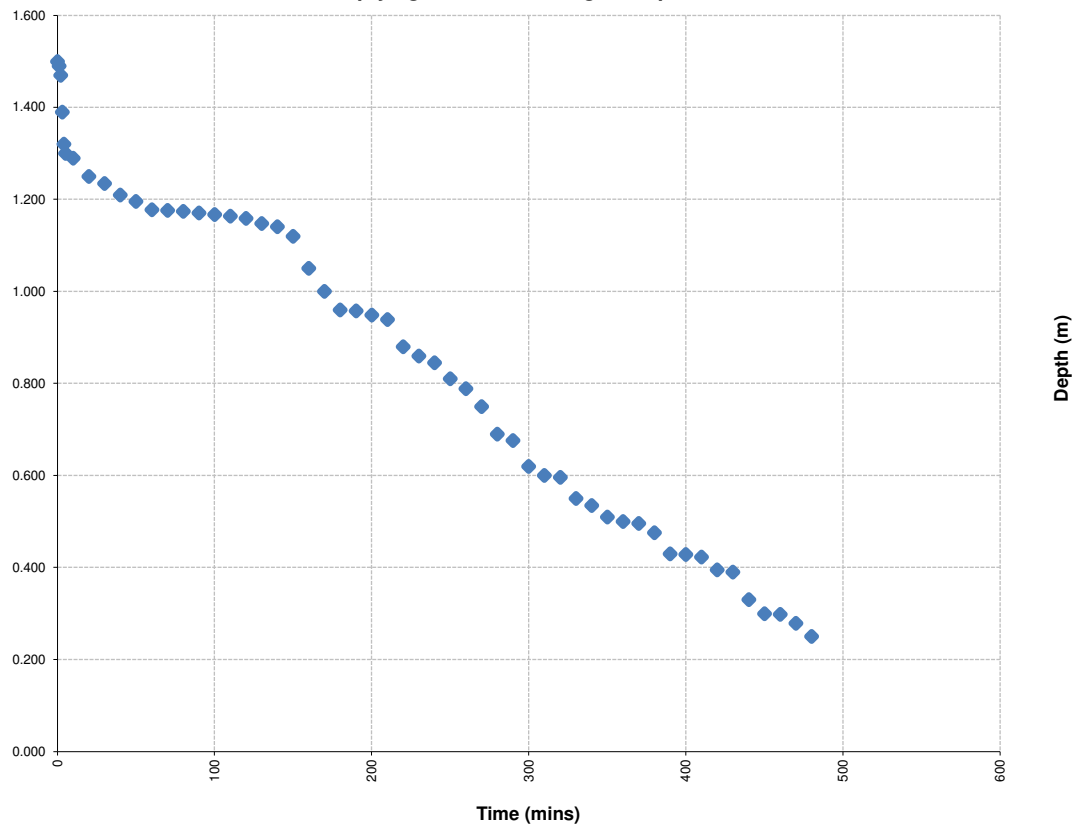
Project Title:	203 Junction Road Burgess Hill - PIT No. 2 - Test 1	No.:	1593
Infiltration test and rate calculation			

1. Permeability rate calculations		2. Test Outflow results		3. Infiltration coefficient (q) (m/h)	
Test pit L:	2.00	Tot vol.:	3	a _{sq} (sq.m):	4.50
Test pit W:	1.00	a _{p50} :	6.5	Inflow (cu.m):	#REF!
Test pit D:	1.50	V _{p75-25} :	1.218	Outflow (cu.m):	1.50
Free vol (%):	100	t _{p75-25} :	210	Storage (cu.m):	#REF!
Effective depth:		1.218		Rate (q) provided by SI=	
Infiltration rate (f):		1.487E-05		Calculated Soil Rate (f)=	0.05354

Log of falling head test

Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth
5	1300	105		205		305		405	
10	1290	110	1164	210	939	310	600	410	423
15		115		215		315		415	
20	1250	120	1159	220	880	320	596	420	395
25		125		225		325		425	
30	1235	130	1148	230	860	330	550	430	390
35		135		235		335		435	
40	1210	140	1141	240	845	340	535	440	330
45		145		245		345		445	
50	1196	150	1120	250	810	350	510	450	300
55		155		255		355		455	
60	1179	160	1050	260	789	360	500	460	298
65		165		265		365		465	
70	1176	170	1000	270	750	370	496	470	279
75		175		275		375		475	
80	1174	180	960	280	690	380	476	480	250
85		185		285		385		485	
90	1171	190	958	290	676	390	430	490	
95		195		295		395		495	
100	1167	200	949	300	620	400	429	500	

Emptying times for soakage test pit





Project Title:

203 Junction Road Burgess Hill - PIT No. 2 - Test 2

No.:

1593

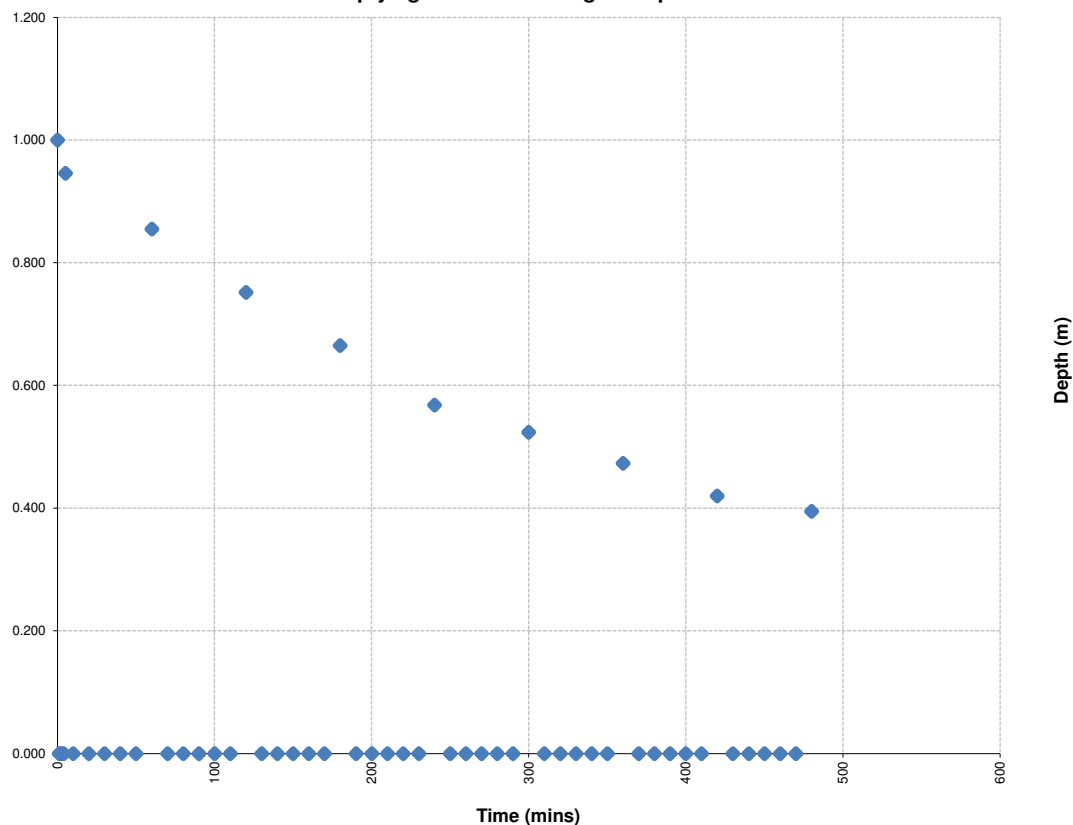
Infiltration test and rate calculation

1. Permeability rate calculations				2. Test Outflow results		3. Infiltration coefficient (q) (m/h)	
Test pit L:	2.00	Tot vol.:	3	a _{sq} (sq.m):	4.50	Rate (q) provided by SI=	
Test pit W:	1.00	a _{p50} :	6.5	Inflow (cu.m):	#REF!	Calculated Soil Rate (f)=	0.03206
Test pit D:	1.50	V _{p75-25} :	0.712	Outflow (cu.m):	1.50		
Free vol (%):	100	t _{p75-25} :	205	Storage (cu.m):	#REF!		
Effective depth:			0.712				
Infiltration rate (f):			8.906E-06				

Log of falling head test

Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth
5	963	105		205		305		405	
10		110		210		310		410	
15		115		215		315		415	
20		120	803	220		320		420	384
25		125		225		325		425	
30		130		230		330		430	
35		135		235		335		435	
40		140		240	610	340		440	
45		145		245		345		445	
50		150		250		350		450	
55		155		255		355		455	
60	876	160		260		360	445	460	
65		165		265		365		465	
70		170		270		370		470	
75		175		275		375		475	
80		180	733	280		380		480	288
85		185		285		385		485	
90		190		290		390		490	
95		195		295		395		495	
100		200		300	530	400		500	

Emptying times for soakage test pit





Project Title:

203 Junction Road Burgess Hill - PIT No. 2 - Test 3

No.:

1593

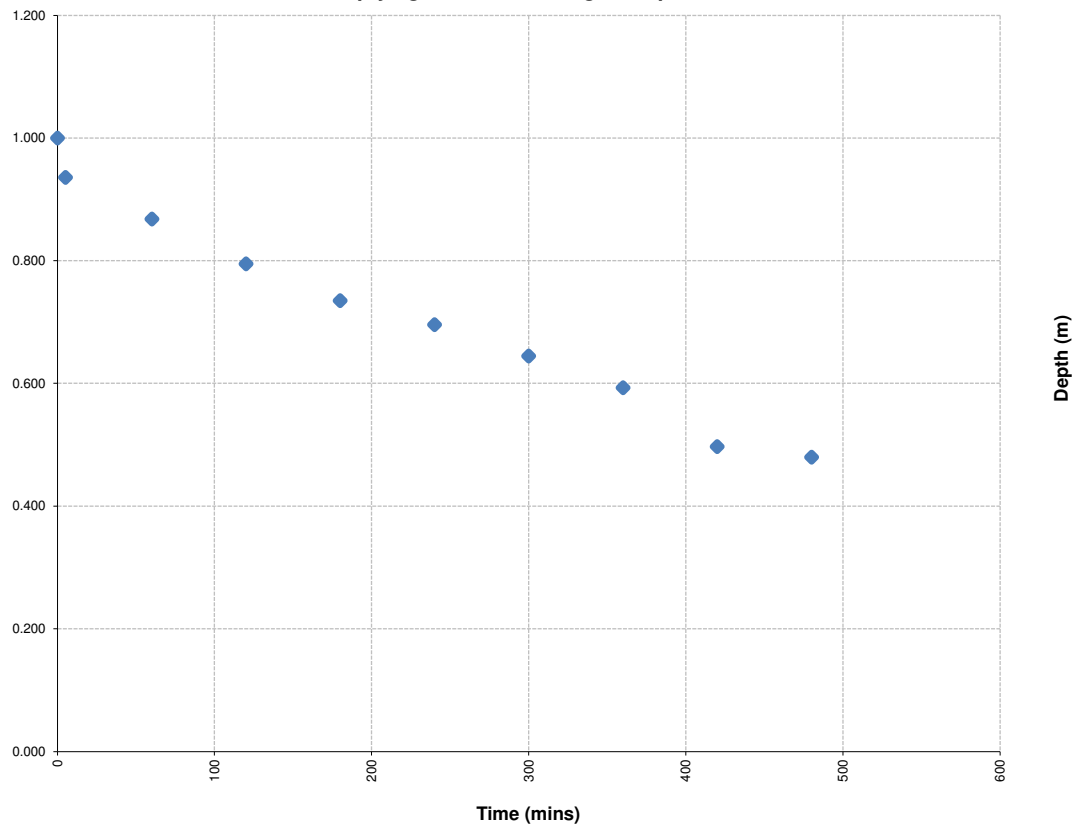
Infiltration test and rate calculation

1. Permeability rate calculations			2. Test Outflow results		3. Infiltration coefficient (q) (m/h)	
Test pit L:	2.00	Tot vol.:	3	a _{sq} (sq.m):	4.50	Rate (q) provided by SI=
Test pit W:	1.00	a _{p50} :	6.5	Inflow (cu.m):	#REF!	Calculated Soil Rate (f)=
Test pit D:	1.50	V _{p75-25} :	1.5	Outflow (cu.m):	1.50	0.06593
Free vol (%):	100	t _{p75-25} :	210	Storage (cu.m):	#REF!	
Effective depth:		1.500				
Infiltration rate (f):		1.832E-05				

Log of falling head test

Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth
5	1040	105		205		305		405	
10		110		210		310		410	
15		115		215		315		415	
20		120	930	220		320		420	470
25		125		225		325		425	
30		130		230		330		430	
35		135		235		335		435	
40		140		240	720	340		440	
45		145		245		345		445	
50		150		250		350		450	
55		155		255		355		455	
60	990	160		260		360	530	460	
65		165		265		365		465	
70		170		270		370		470	
75		175		275		375		475	
80		180	840	280		380		480	350
85		185		285		385		485	
90		190		290		390		490	
95		195		295		395		495	
100		200		300	640	400		500	

Emptying times for soakage test pit



FOUL & STORM WATER DESIGN - DRAINAGE STRATEGY

GENERAL - The site was previously occupied by a large house built in

STORM WATER - The existing site is a brown field site being previously occupied and measures some 0.11 ha in area. It is located in flood zone 1 area for fluvial flooding and storm water flooding. No flood risk assessment was required for this project.

The proposed site offer the following areas:-

Site boundary area - 2200 sq.m
Roofs - (5 x 78 sq.m) = 390 sq.m
External permeable road - 368 sq.m

The existing ground offers good porosity tests which were carried out by the client offering an average design rate of 1.27 x 10⁻⁵ m/s with a factor of safety of 1.5 to offers a required infiltration pavement depth of 240mm solution beneath the private road using an open graded asphalt and infiltration gravel blanket to discharge the site storm water. The CBR value will determine if a further capping layer is required.

This road pavement will also receive the rainwater flows from the roof rainwater butts and threshold drainage channels. Flow from the water butts allow roof water to then enter a catch/silt pit which provides settlement. The outlet pipe then connects to the piped below ground system to the final infiltration soakaway beneath the private road. The road surface will be open graded asphalt and this will need to be kept clean to ensure waterways are maintained.

The road infiltration storage volume is flat at finished and formation levels thus ensuring that water retention is maximised in the volume available with no high areas of pavement.

Around the houses is provided an infiltration permeable pavement which drains itself to the ground - No additional flows from roofs or other areas are added to this, therefore there is no concentration of flows - the pavement drains only its own area.

All infiltration volumes have been designed to achieve sufficient storage for a 100 year +40% climate change storm.

The attenuated storage will infiltrate to the ground and it is important to note that the construction requires a geotextile beneath to separate formation and stone layers - Refer to SDA detail no.

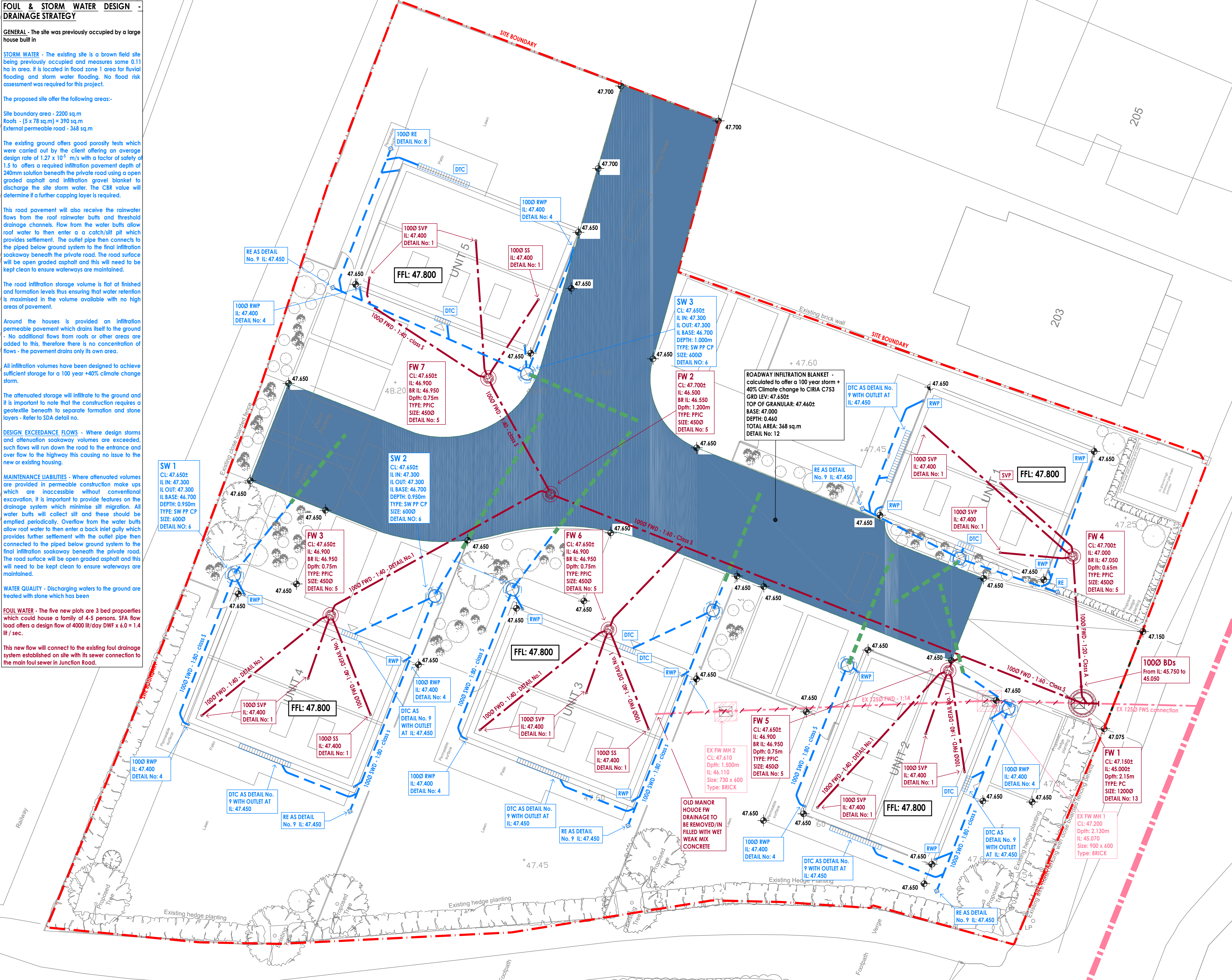
DESIGN EXCEEDANCE FLOWS - Where design storms and attenuation soakaway volumes are exceeded, such flows will run down the road to the entrance and over flow to the highway this causing no issue to the new or existing housing.

MAINTENANCE LIABILITIES - Where attenuated volumes are provided in permeable construction make ups which are inaccessible without conventional excavation, it is important to provide features on the drainage system which minimise silt migration. All water butts will collect silt and these should be emptied periodically. Overflow from the water butts allow roof water to then enter a back inlet gully which provides further settlement with the outlet pipe then connected to the piped below ground system to the final infiltration soakaway beneath the private road. The road surface will be open graded asphalt and this will need to be kept clean to ensure waterways are maintained.

WATER QUALITY - Discharging waters to the ground are treated with stone which has been

FOUL WATER - The five new plots are 3 bed properties which could house a family of 4-5 persons. SFA flow load offers a design flow of 4000 ltr/day DWF x 6.0 = 1.4 ltr / sec.

This new flow will connect to the existing foul drainage system established on site with its sewer connection to the main foul sewer in Junction Road.



ABBREVIATIONS / LEGEND

AAV	AIR ADMITTANCE VALVE
AC	ACCESS CHAMBER
ACC	ACCESS
ASAC	ASBESTOS CEMENT
AFFL	ABOVE FINISHED FLOOR LEVEL
BD	BACKDROP
BE	BLANDED END
BIG	BACK INLET GULLY
BGL	BELOW GROUND LEVEL
BR	BRANCH
BSSL	BELOW SLAB SOFFIT LEVEL
CE	CLEANING EYE
CI	CAST IRON
CL	COVER LEVEL
CON	CONCRETE
CP	CATCHPIT
DC	DRAINAGE CHANNEL
DCO	DRAINAGE CHANNEL OUTLET
DI	DRAIN LINER
DTC	DRAINAGE THRESHOLD CHANNEL
DP	DRAIN POINT
FA	FROM ABOVE
FB	FROM BELOW
FC	FLEXIBLE CONNECTION
FAI	FRESH AIR INLET
FWD	FOUL WATER DRAIN
FWG	FOUL WATER GULLY
FWS	FOUL WATER SEWER
GL	GROUND LEVEL
GT	GREASE TRAP
HL	HIGH LEVEL
IC	INSPECTION CHAMBER
IL	INVERT LEVEL
IT	INTERCEPTING TRAP
LL	LOW LEVEL
LWG	LIGHTWELL GULLY
MH	MANHOLE
ML	MID LEVEL
OD	OVERDRAIN
OTG	OPEN TOP GULLY
OTBIG	OPEN TOP BACK INLET GULLY
PAL	PATCH LINER
PE	POLYETHYLENE
PF	PITCH FIBRE
PM	PUMP MAIN
PP	POLYPROPYLENE
PPAC	POLYPROPYLENE AC
PPIC	POLYPROPYLENE IC
PCC	PRECAST CONCRETE
PS	PIPE RESHAPE
PVC	POLYVINYL CHLORIDE
RE	RODDING EYE
RG	ROAD GULLY
ROC	ROOT CUT
RWH	RAINWATER HARVESTING
RWP	RAINWATER PIPE
SP	SOIL PIPE
SHG	SHOWER GULLY
STBIG	SEALED TOP BACK INLET GULLY
STP	SEWAGE TREATMENT PLANT
SUDS	SUSTAINABLE DRAINAGE SYSTEMS
SVP	SOIL VENT PIPE
SS	STUB STACK
SWD	STORM WATER DRAIN
SWS	STORM WATER SEWER
SWTD	STORM WATER TREATMENT DEVICE
TA	TO ABOVE
TB	TO BELOW
TBC	TO BE CONFIRMED
TD	TO DRAIN
UB	URNAL BOWL
UD	UNDERDRAIN
UTL	UNABLE TO LIFT
UTT	UNABLE TO TRACE
UTS	UNABLE TO SURVEY
VC	VITRIFIED CLAYWARE
VTA	VENT TO ATMOSPHERE
WC	WATER CLOSET
WHB	WASH HAND BASIN
WG	WASTE GULLY
WP	WASTE PIPE
WVP	WASTE VENT PIPE
YG	YARD GULLY

THIS DRAWING IS SUBJECT TO:-

- EXISTING FOUNDATIONS
- APPROVAL BY THE PLANNERS
- APPROVAL BY BUILDING CONTROL

P5	Porosity rate typo corrected.	10.10.2025	SAD
P4	Drainage altered to suit 5 nr house application.	22.08.2025	SAD
P3	PLANNING ISSUE	11.12.2019	SAD
P2	Soakaways removed and drainage altered to suit the 10m restriction distance by Network Rail.	25.10.2019	SAD
P1	PRELIMINARY ISSUE	11.10.2019	SAD
Rev	Description	Date	By

CLIENT:

Mrs K Safronova

PROJECT:

201 Junction Road Burgess Hill
West Sussex RH15 0NU

TITLE:

Site Plan - Proposed Foul
and Storm Water Drainage

SCALE:

GA 1:100 @ A1
GA 1:200 @ A3

DRAWING STATUS:

FOR PLANNING

JOB No:

1593

DWG No & Rev:

100 P5

SIMON DENT ASSOCIATES



Public Health, Civil and Water Consulting Engineers

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