



SIMON DENT ASSOCIATES

Hove – East Sussex
Gosport - Hampshire

Consulting Engineers to the Civil and Water Industry

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

simondent@live.co.uk
0754 658 3150

25065_260113

13TH JANUARY 2026

Mr John Hudson

Boxall Ward
Unit9, Annington Commercial Centre
Annington Road
Steyping BN44 3WA

BY EMAIL ONLY

Dear John

25065 - THE LODGE 10 HIGHFIELDS BRIGHTON ROAD WARNINGLID RH17 5SY

Please see attached our Infiltration and drainage field testing summary with the test results provided by yourselves and resultant calculated rates. Also attached at the rear are the new geocrate soakaway calculations and drainage field length calculation.

Finally, we attach our drainage drawing 100 indicating the site drainage along with the MSDC prof forma drainage tech summary all for your issue to the MSDC planners.

I trust this helps

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

Kind regards,

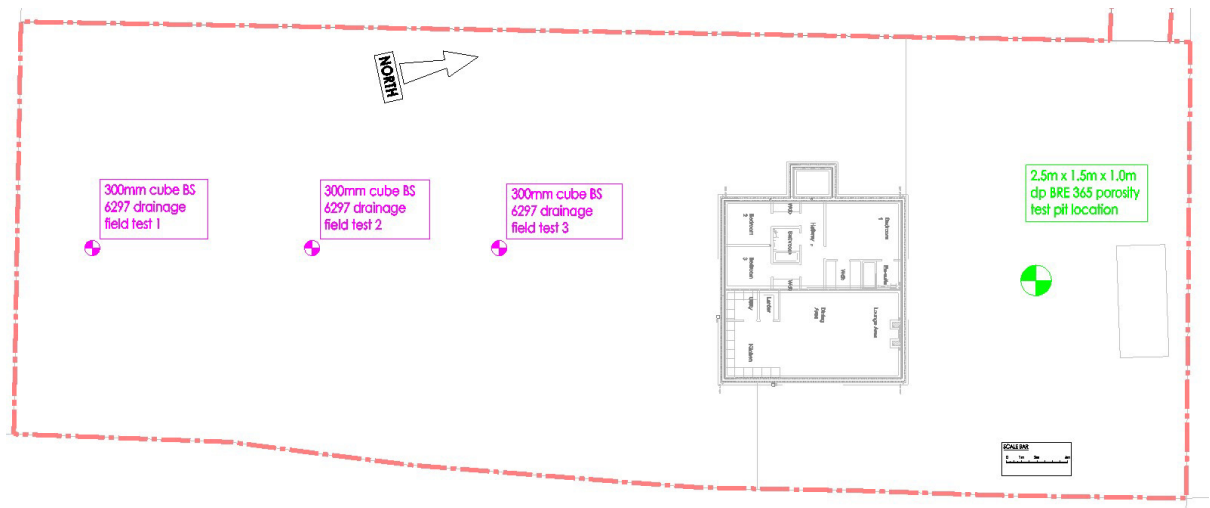
Simon Dent
For Simon Dent Associates

BRE 365 INFILTRATION AND BS 6297 DRAINAGE FIELD TESTING SUMMARY

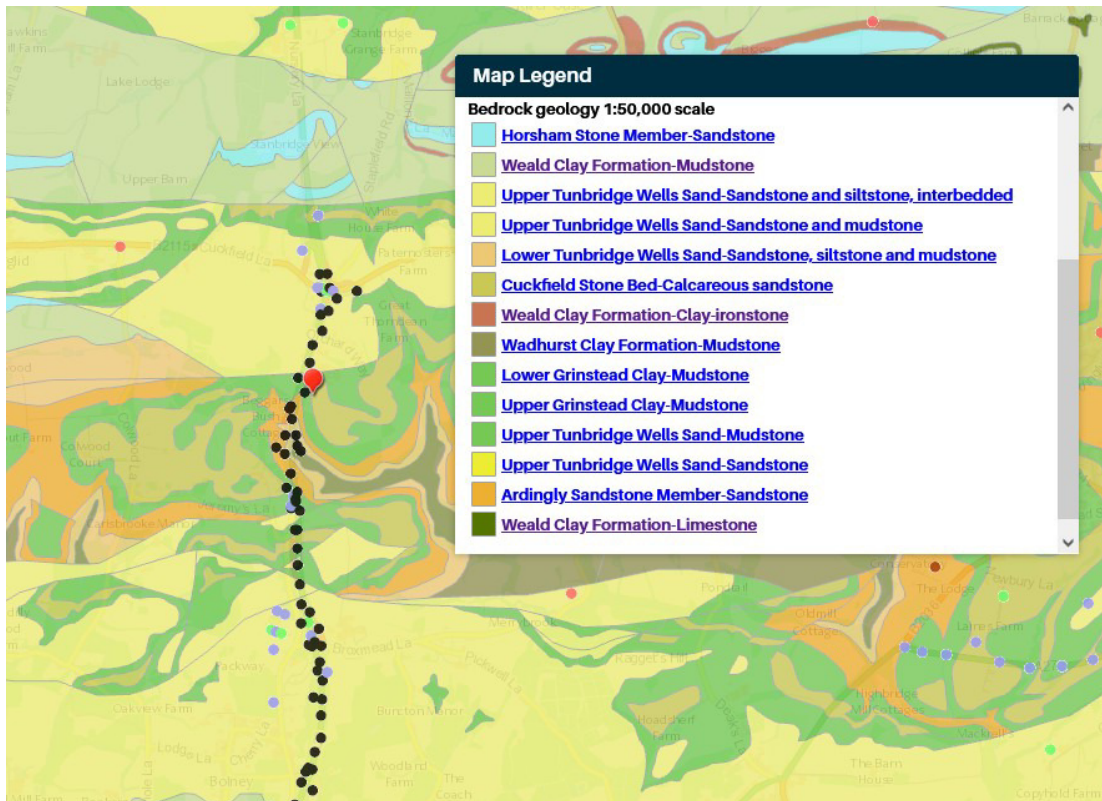
FOR THE LODGE 10 HIGHFIELDS BRIGHTON ROAD WARNINGLID RH17 5SY

BRE 365 Testing

BRE 365 soakaway testing was requested by SDA to be carried out for the site. The client carried these out and provided the results for three tests within the single test location chosen and shown on the test pit plan below.



The British Geological Society (BGS) website indicated the likelihood of sand and mudstones in the vicinity with little superficial deposits overlain.



The pit was excavated to 2.5m x 1.5m x 1.0m with the sides holding firm throughout.

Testing was carried out in November 2025 and the results shown at the rear of this summary.

No groundwater was encountered during the tests.

Each pit was filled and emptied three times (albeit starting depths reduced due to time taken on the initial test) with the test record taken during the working day. A one-day limit was placed on each test. In all cases the pit did not drain in the time available and the calculations use the effective depth accordingly to establish the f rate.

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.

Bre 365 Site 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	$1.247 \times 10^{-5} \text{ m/s}$
Pit 1 Test 2	$1.168 \times 10^{-5} \text{ m/s}$
Pit 1 Test 3	$1.028 \times 10^{-5} \text{ m/s}$

With the resultant test rates, the average of the six was taken resulting in the design figure of $1.148 \times 10^{-5} \text{ m/s}$.

This rate has been factored by 1.5 for design purposes.

BS 6297 Drainage field Test Summary

The standard requires a stepped trial test hole where the field pipe is likely to be more than 300 below the ground. Three test holes of 300 x 300 x 300mm deep were dug as shown in the trial hole drawing above.

All three tests were completed in the day and results indicated at the rear of this summary indicate an average V_p rate of 29s/mm for the drainage field and so requiring a total length of 38m of 100mm perforated pipe in granular trench.



Project Title: The Lodge Brighton Road Warringlid

No.: 25065

BRE 365 Infiltration test and rate calculation

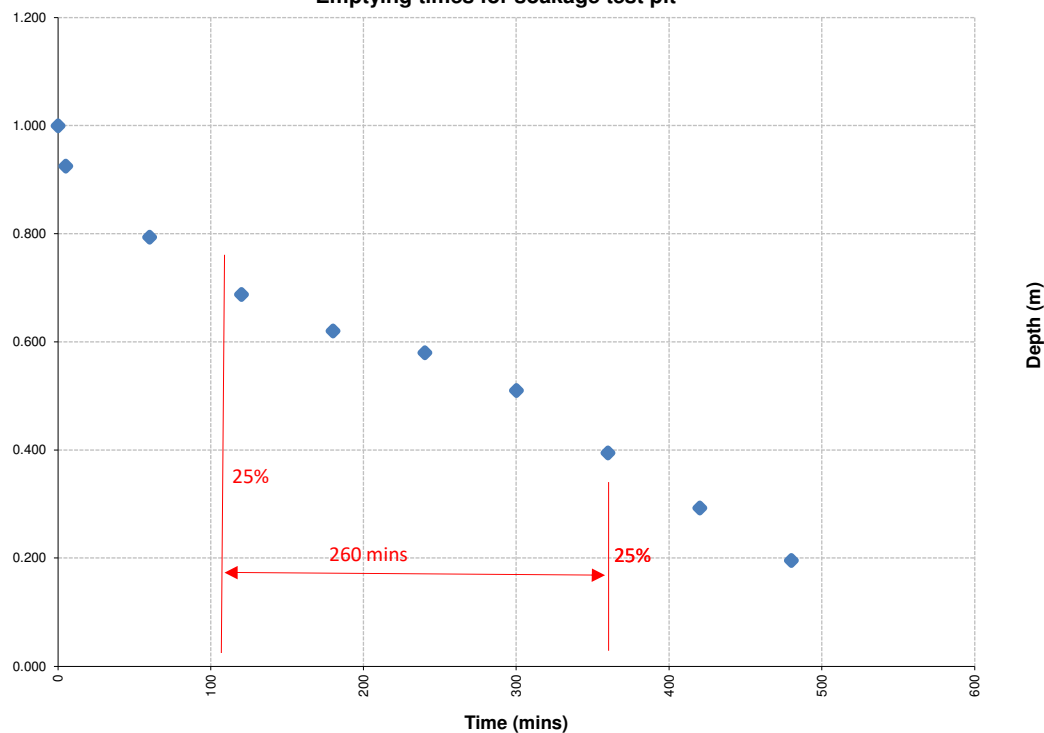
1. Permeability rate calculations		2. Test Outflow results		3. Infiltration coefficient (q) (m/h)	
Test pit L:	2.50	Tot vol.:	3.75	Q_{50} (sq.m):	4.00
Test pit W:	1.50	Q_{p50} :	7.75	Inflow (cu.m):	#REF!
Test pit D:	1.00	V_{p75-25} :	1.5075	Outflow (cu.m):	1.50
Free vol (%):	100	t_{p75-25} :	260	Storage (cu.m):	#REF!
Effective depth:	0.804			Rate (q) provided by SI=	
Infiltration rate (f):	1.247E-05			Calculated Soil Rate (f)=	0.04489

Note: tests carried out over max of working day.

Log of falling head test

Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth
5	0.925	105		205		305		405	
10		110		210		310		410	
15		115		215		315		415	
20		120	0.688	220		320		420	0.293
25		125		225		325		425	
30		130		230		330		430	
35		135		235		335		435	
40		140		240	0.58	340		440	
45		145		245		345		445	
50		150		250		350		450	
55		155		255		355		455	
60	0.794	160		260		360	0.395	460	
65		165		265		365		465	
70		170		270		370		470	
75		175		275		375		475	
80		180	0.62	280		380		480	0.196
85		185		285		385		485	
90		190		290		390		490	
95		195		295		395		495	
100		200		300	0.51	400		500	

Emptying times for soakage test pit





Project Title: The Lodge Brighton Road Warninglid

No.: 25065

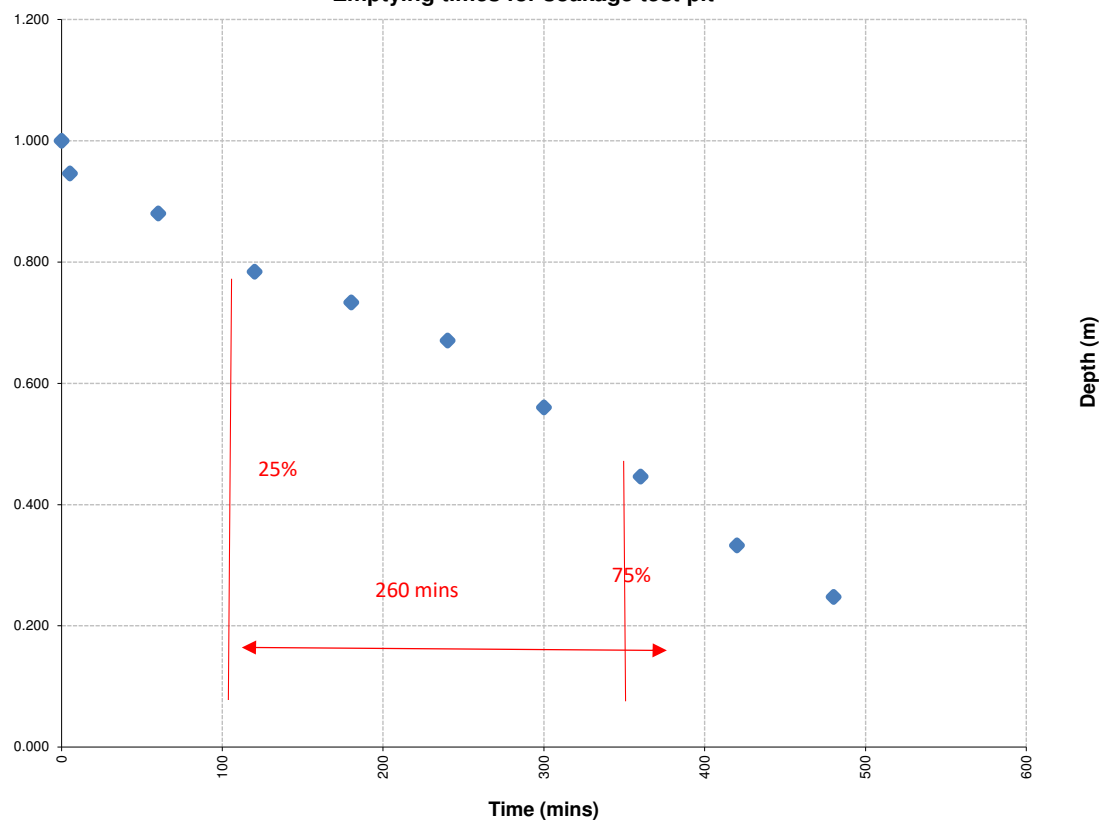
BRE 365 Infiltration test and rate calculation

1. Permeability rate calculations				2. Test Outflow results		3. Infiltration coefficient (q) (m/h)	
Test pit L:	2.50	Tot vol.:	3.75	Q ₅₀ (sq.m):	4.00	Rate (q) provided by SI=	
Test pit W:	1.50	Q _{p50} :	7.75	Inflow (cu.m):	#REF!	Calculated Soil Rate (f)=	0.04204
Test pit D:	1.00	V _{p75-25} :	1.411875	Outflow (cu.m):	1.50		
Free vol (%)	100	t _{p75-25} :	260	Storage(cu.m):	#REF!		
Effective depth:			0.753				
Infiltration rate (f):			1.168E-05	Note: tests carried out over max of working day.			

Log of falling head test

Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth
5	0.946	105		205		305		405	
10		110		210		310		410	
15		115		215		315		415	
20		120	0.784	220		320		420	0.332
25		125		225		325		425	
30		130		230		330		430	
35		135		235		335		435	
40		140		240	0.67	340		440	
45		145		245		345		445	
50		150		250		350		450	
55		155		255		355		455	
60	0.88	160		260		360	0.446	460	
65		165		265		365		465	
70		170		270		370		470	
75		175		275		375		475	
80		180	0.733	280		380		480	0.247
85		185		285		385		485	
90		190		290		390		490	
95		195		295		395		495	
100		200		300	0.56	400		500	

Emptying times for soakage test pit





Project Title:

The Lodge Brighton Road Warninglid

No.:

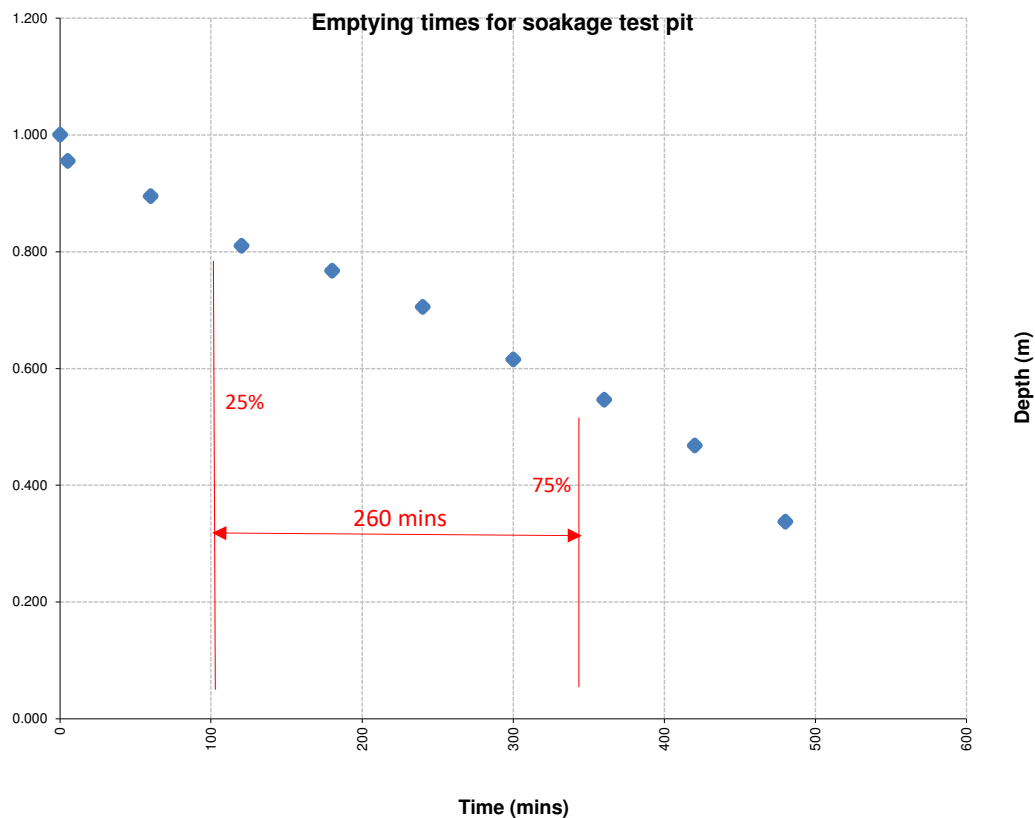
250965

BRE 365 Infiltration test and rate calculation

1. Permeability rate calculations			2. Test Outflow results			3. Infiltration coefficient (q) (m/h)	
Test pit L:	2.50	Tot vol.:	3.75	Q_{50} (sq.m):	4.00	Rate (q) provided by SI=	
Test pit W:	1.50	Q_{p50} :	7.75	Inflow (cu.m):	#REF!	Calculated Soil Rate (f)=	0.03702
Test pit D:	1.00	V_{p75-25} :	1.243125	Outflow(cu.m):	1.50		
Free vol (%)	100	t_{p75-25} :	260	Storage(cu.m):	#REF!		
Effective depth:			0.663				
Infiltration rate (f):			1.028E-05	Note: tests carried out over max of working day.			

Log of falling head test

Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth
5	0.955	105		205		305		405	
10		110		210		310		410	
15		115		215		315		415	
20		120	0.81	220		320		420	0.468
25		125		225		325		425	
30		130		230		330		430	
35		135		235		335		435	
40		140		240	0.705	340		440	
45		145		245		345		445	
50		150		250		350		450	
55		155		255		355		455	
60	0.895	160		260		360	0.546	460	
65		165		265		365		465	
70		170		270		370		470	
75		175		275		375		475	
80		180	0.767	280		380		480	0.337
85		185		285		385		485	
90		190		290		390		490	
95		195		295		395		495	
100		200		300	0.644	400		500	





BS 6297 TESTING FOR REQUIRED DRAINAGE FIELD PIPE LENGTHS

Project The Lodge Brighton Road Warninglid
Job no. 25065
Date Jan-26
By: SAD

Hole No.	Test Date	Test No.	Start Time	Finish Time	Elapsed time			Vp (s/min)
					Hours/Mins	Minutes	Seconds	Seconds divided by 150mm
1	06/11/2025	1	08:30:00	09:28:00	00:58:00	58	3480	23.2
	06/11/2025	2	11:30:00	12:38:00	01:08:00	68	4080	27.2
	06/11/2025	3	15:40:00	16:55:00	01:15:00	75	4500	30
Average Vp for Hole 1								27
2	06/11/2025	1	08:35:00	09:45:00	01:10:00	70	4200	28
	06/11/2025	2	11:30:00	12:57:00	01:27:00	87	5220	34.8
	06/11/2025	3	15:50:00	17:25:00	01:35:00	95	5700	38
Average Vp for Hole 2								34
2	06/11/2025	1	08:40:00	09:42:00	01:02:00	62	3720	24.8
	06/11/2025	2	11:30:00	12:37:00	01:07:00	67	4020	26.8
	06/11/2025	3	15:45:00	16:47:00	01:02:00	62	3720	24.8
Average Vp for Hole 2								25

Trench width (m): 0.6 Metres
Population (no. of persons): 4 Persons
Calculated Vp: 29 s/mm
Length of drain run required: 38 Metres

For alternative lengths using various persons and Vp rates

Overall Length of 100mm perforated pipe required (m) for number of persons

mins	Vp (s/mm)	4	6	12	18	25	40
20	8	11	16	32	48	67	107
30	12	16	24	48	72	100	160
40	16	21	32	64	96	133	213
60	24	32	48	96	144	200	320
120	48	64	96	192	288	400	640
180	72	96	144	288	432	600	960
		0					
100	40	53	80	160	240	333	533

General Drainage Requirement Guidance

Mid Sussex District Council's flood risk and drainage requirements are based on relevant national and local policies and guidance.

Surface Water Drainage

Finalised detailed surface water drainage design is required to be submitted and approved prior to construction starting on site. The design should be based on the [Environment Agency's latest climate change allowances](#) and follow the latest [West Sussex Lead Local Flood Authority Policy for the Management of Surface Water](#).

The use of pumped surface water drainage is not considered to be sustainable and therefore would not be considered an appropriate means of managing surface water as part of a development.

The locating of attenuation, detention, or infiltration devices (including permeable surfacing) within flood extents is not acceptable, this includes areas of increased surface water flood risk.

Table 1 overleaf sets out a list of information the detailed surface water drainage design should include. Developers are encouraged to complete the table and provide as a cover page to future drainage design submissions.

Foul Water Drainage

Finalised detailed foul water drainage design is required to be submitted and approved prior to construction starting on site. The use of public foul sewer connection should always be prioritised over non-mains drainage options.

The use of non-mains foul drainage should consider the latest [Environment Agency's General Binding Rules](#).

The Environment Agency have advised that any existing septic tank foul drainage systems that are found to not comply with the latest Binding Rules will need to be replaced or upgraded.

Table 2 overleaf sets out a list of information the detailed foul water drainage design should include. Developers are encouraged to complete the table and provide as a cover page to future drainage design submissions.

Detailed drainage design technical summary

Table 1: Detailed drainage design summary – surface water

Requirement	Information	Location of information / drawing number
For all designs		
Greenfield runoff rate details for the area to be drained (using FEH or a similar approved method)	Refer infiltration rates	Refer SDA dwg 100
On-site infiltration test results	Refer infiltration rate report	Refer infiltration rate report
Plans / details of areas to be drained based on finalised development plans	Refer SDA drawing 100	Refer SDA drawing 100
Calculations showing the system has been designed to cater for the 1 in 30 with climate change and 1 in 100 with climate change storm events	Calculations for soakaway size are based on FEH 22 data with peak volume shown at 100 year + 45% CC event.	SDA Calculations pack v1
Calculations should use a CV value of 1.0		
Detailed drainage plans, including invert levels and pipe diameters, showing entire drainage system	Refer SDA drawings 100 and 200	
Maintenance and management plan ¹	SDA indicate maintenance procedures and periods on drawings	
For soakaways		
Sizing calculations (to cater for 6-hour, 1 in 100-year plus climate change event)		SDA Calcs pack v1
Half drain time (<24 hours)		
Construction details		SDA drawing 200
For discharge to watercourse		
Discharge rate (1 in 1 or QBar Greenfield rate for drained area) ²	n/a	
Outfall location and construction details		
Attenuation sizing calculations (to cater for 1 in 100-year plus climate change event ³)		
For discharge to sewer		
Discharge rates (restricted to 1 in 1 or QBar Greenfield rate for drained area unless otherwise agreed with sewerage provider)	n/a	
Discharge location and manhole number		
Outline approval from sewerage provider in relation to connection, discharge rate and connection location ⁴		
Attenuation sizing calculations (to cater for 1 in 100-year plus climate change event ⁵)		

¹ The scale of this document should reflect the scale of the development and the complexity of the drainage system.

² If the 1 in 1 or QBar Greenfield runoff rate cannot be achieved, then evidence into why a higher discharge rate has been proposed should be provided as part of the detailed design. Due to improvements in drainage systems the 2l/s minimum will not be accepted without justification.

³ If system does not attenuate up to the 1 in 100-year with climate change event, then evidence that the system shall not increase flood risk on or off site shall be required.

⁴ Formal approval via S106 etc is not required.

⁵ If system does not attenuate up to the 1 in 100-year with climate change event, then evidence that the system shall not increase flood risk on or off site shall be required.

Table 2: Detailed drainage design requirements – foul water

Requirement	Summary	Location of information / drawing number
<i>For all designs</i>		
Plans showing entire drainage system, including invert levels, pipe diameters, falls and outfall/connection location Drainage systems should be located within land under the control of the applicant		All shown upon SDA drawings 100 and 200 within the curtilage of the applicant.
Foul flow calculations and confirmation proposed system is sized appropriately	Sewage treatment plant sized for min 6 persons	
<i>For connection to main foul sewer</i>		
Discharge location and manhole number		
Evidence of communication with Water Authority regarding connection ⁶		
<i>For non-mains system with drainage field</i>		
Evidence of permeability (infiltration) test results specific to treated effluent drainage fields	Infiltration Vp rate testing to BS 6297 provided showing Vp of 28	Refer SDA drawings 100 and 200
Evidence that either: a) The system meets latest General Binding Rules, or b) An Environmental Permit application is to be submitted	System meets general binding rules	
<i>For non-mains system with discharge to open water</i>		
Evidence that either: a) The system meets latest General Binding Rules, or b) An Environmental Permit application is to be submitted		
Outfall location and construction details		

⁶ Formal approval via S106 etc is not required.



SIMON DENT ASSOCIATES

at Hove
and Gosport

t 0754 658 3150
e simondent@live.co.uk

HORIZONTAL SOAKAWAY CALCULATIONS CIRIA C753 - EQ 25.4 - using FEH 22 rainfall data

PROJECT TITLE:	The Lodge Warringlid RH		JOB No:	25065
SOAKAWAY NO.:	SA1	LOCATION:	Rear garden	DATE: Dec-25

1. FEH Rainfall data		2. Design Inflow		3. Test rate calculations		4. Design Outflow results	
Event:	100 year	Roof (m ²):	160	Test pit L:	2.50	Tot vol.:	3.75
CC %	1.45	Driveway (m ²):	0	Test pit W:	1.50	q _{p50} :	7.75
Index:	10	Paths/patios (m ²):	0	Test pit D:	1.00	V _{p75-25} :	1.5075
		Total Area (sq.m):	160	Free vol (%):	100	t _{p75-25} :	282.5
						Effective depth:	0.804
						Infiltration rate (f) (m/s):	1.148E-05

5. Infiltration system data					6. Infiltration coefficient (q) (m/h)		7. FOS
Length (m):	7.000	Width (m):	4.000	q value (m/h):	0.028	Rate (q) provided by SI:	1.5
stimated depth (d):	0.500	Inlet IL:	9.350	Min IL base:	9.045	Calculated Soil Rate (f):	0.041313
Free vol (%):	96	diam inlet:	0.100	Top of s/away:	9.485		

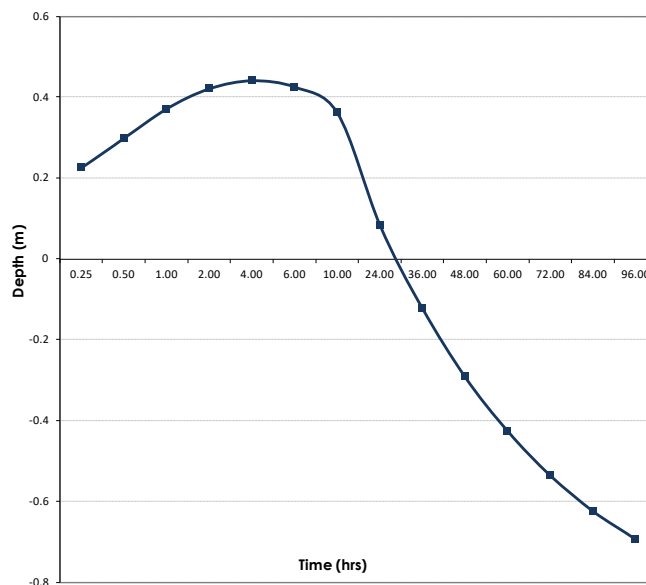
Summary of designer's sizes for chosen D min duration for 100 year storm							
L	W	d	Ab	Ad	P	R	n
7.00	4.00	0.500	28.00	160.00	22.00	5.71	0.96

Soakaway calculations are based on BRE 365 infiltration results and the calculated method shown in CIRIA document C697 & C753 and uses FEH 22 rainfall data. The rainfall depths are factored by the climate change growth factor chosen. The porosity rate is further factored for safety to suit risk from long term siting. Always refer to the project construction detail sheets 200 or 201 for the soakaway or permeable pavement make-up and the main general arrangement (GA) showing the size, levels and position of the soakaway.

Calculations used are derived from CIRIA document C753 - SUDS manual Eq 25.4

D (Hrs)	mm	i (m/h)	a	b	h _{max}
0.25	27.05	0.1569	-40.16	0.022542	0.2257
0.50	36.37	0.1055	-26.58	0.022542	0.2979
1.00	46.78	0.0678	-16.64	0.022542	0.3709
2.00	56.52	0.0410	-9.55	0.022542	0.4209
4.00	66.65	0.0242	-5.11	0.022542	0.4403
6.00	72.56	0.0175	-3.36	0.022542	0.4248
10.00	80.05	0.0116	-1.79	0.022542	0.3617
24.00	92.26	0.0056	-0.20	0.022542	0.0832
36.00	98.80	0.0040	0.22	0.022542	-0.1233
48.00	104.26	0.0031	0.44	0.022542	-0.2916
60.00	109.20	0.0026	0.58	0.022542	-0.4270
72.00	113.80	0.0023	0.67	0.022542	-0.5358
84.00	118.16	0.0020	0.73	0.022542	-0.6236
96.00	122.36	0.0018	0.78	0.022542	-0.6946

MAX HEIGHT (H_{max}): 0.4403



Time to empty	
H _{max} :	0.4403
R:	5.71
Time to empty (hrs):	23
Recalculated q (m/h):	q OK
Equivalent f rate:	#VALUE!
EMPTY TIME IS SATISFACTORY	