



**Land at Greenmans Lane
Off Sodam Lane
Dauntsey
SN15 4HN**

Surface Water Drainage Strategy

**S25-148/SWDS
March 2025**

Prepared by :

**Southwest Environmental Limited
80-83 Long Lane
London
EC1A 9ET**

On behalf of :

**Frank Lee
Purdy's Farm
Wood Lane
Braydon**





1.0 Introduction

This document sets out the informational requirements of drainage related conditions for planning application 21/01600/FUL. Change of use from agricultural to Equestrian with stables and barn. Land at Greenmans Lane, Off Sodam Lane, Dauntsey, SN15 4HN

2.1 Below are set out the informational requirement of Condition 4

*“Calculations and drawings for the drainage system design showing designated **holding areas** and conveyance routes based on no flooding on site for a **1 in 30 year** rainfall event.”*

Holding areas (in the form of crate soak-away) and **conveyance routes** (in form of pipes) are shown on drawing No. 03 (Block Plan - Rand Consultancy & Planning).

We have provided calculations to show attenuation volume for 1:100 + 45% CC rainfall event in **Appendix 1**. This will also contain the lesser event of **1:30 year**. We have modelled for 1:1, 1:50 and 1:100 with climate change allowances. You can see that 1:100 represents worst case.

“Calculations and drawings for the drainage system design showing designated holding areas and conveyance routes based on no flooding on site for a 1 in 100 year plus climate change rainfall event in respect to a building (including basement) or utility plant susceptible to water within the development.”

Drawings are provided in **Appendix 1**. Calculations in **Appendix 2**.

“Calculations which demonstrate that the required 20% betterment against greenfield rates has been achieved for all storm events between the 1 in 1 year and the 1 in 100 year return period storm events.”

We have provided green field run-off rates, and shown how these will be maintained with betterment post development.

“A clearly labelled drainage layout plan showing the pipe networks and any attenuation ponds. The plan should show any pipe node numbers referred to within the drainage calculations.”

We have provided various plans in **Appendix 1**.

“A plan showing the cross sections and design of any attenuation pond and its components”

2.2 Below are set out the informational requirement of Condition 7

“No development shall commence on site until the applicant has shown overland exceedance routes on the drainage plan for flows in excess of the 1 in 100 year plus climate change (40%) rainfall event.”

The drainage design is for a 1:100 + 45% event as such there will be no exceedance in the above event.



3.0 Certification

For the avoidance of doubt, the parties hereby expressly agree that the Consultant takes no liability for and gives not warranty against actual flood, sewage or water damage of The Client's property in relation to the performance of the service.

This report gives estimates of likely flows, but does not accept liability associated for the use of these figures in the construction of sewers or drains. Options appraisals are given as example only. Responsibility for design / services and resulting levels of performance rests with the client and or developer.

This report is produced for the sole use of the Client, and no responsibility of any kind, whether for negligence or otherwise, can be accepted for any Third Party who may rely upon it.

The conclusions and recommendations given in this report are based on our understanding of the future plans for the site.

The scope of this Foul and Surface Water Drainage Strategy was discussed and agreed with the Client. No responsibility is accepted for conditions not encountered, which are outside of the agreed scope of work.



Appendix 1

Plans

LIDAR
Approx. Built Area in Dash

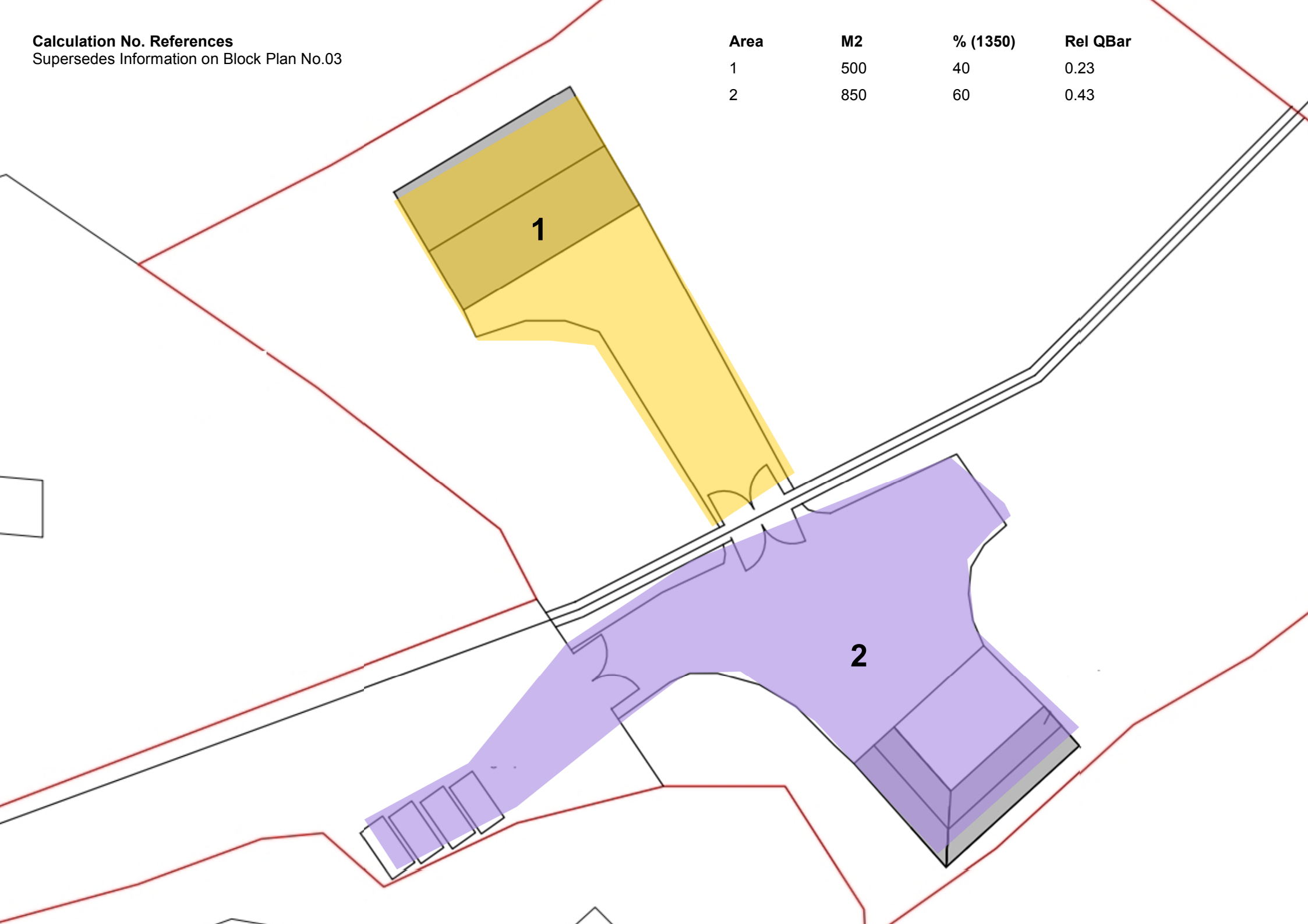


Modified Areas
Supersedes Information on Block Plan No.03

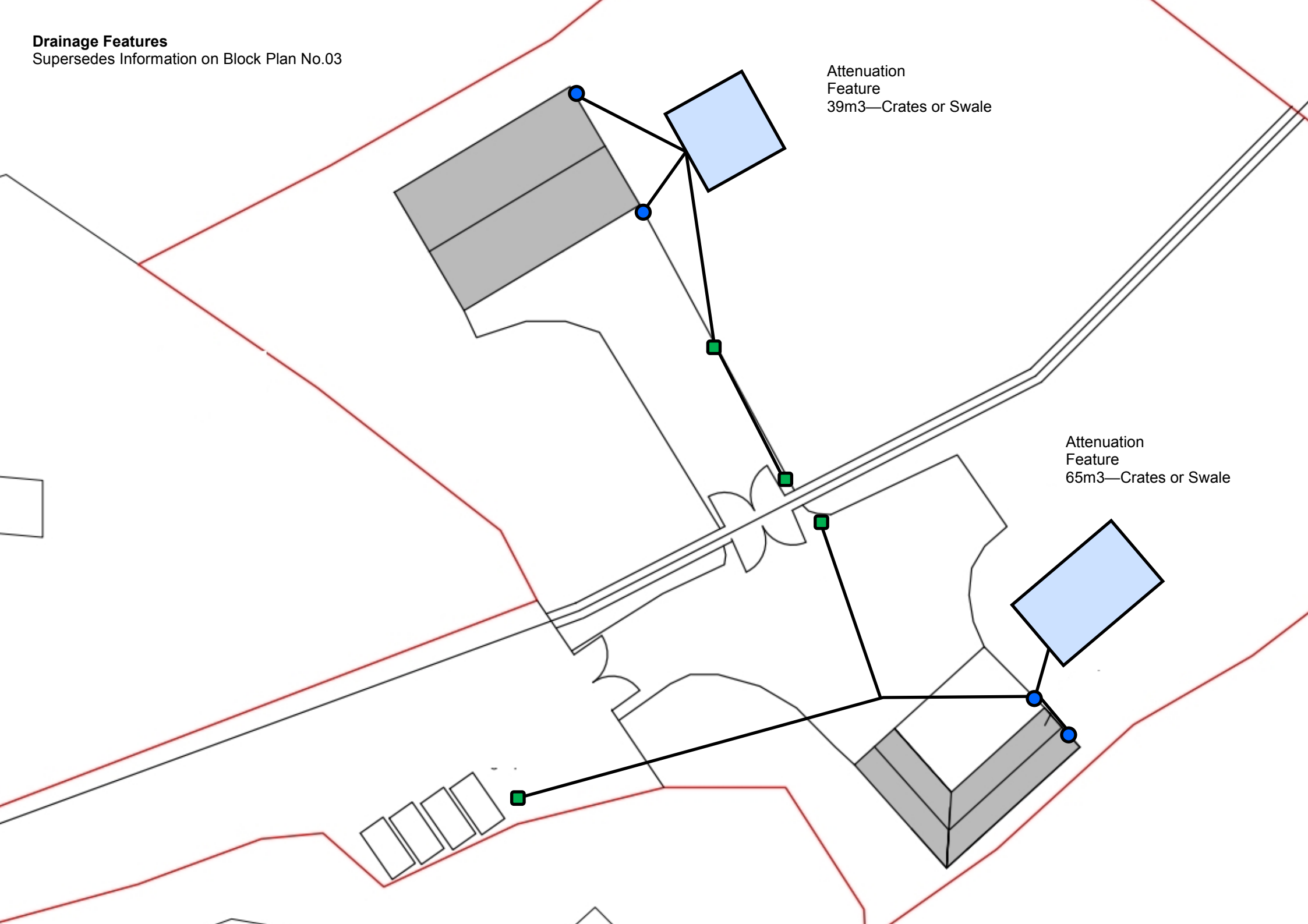


Calculation No. References
Supersedes Information on Block Plan No.03

Area	M2	% (1350)	Rel QBar
1	500	40	0.23
2	850	60	0.43



Drainage Features
Supersedes Information on Block Plan No.03



Attenuation
Feature
39m3—Crates or Swale

Attenuation
Feature
65m3—Crates or Swale

Greenfield runoff

Method

i

Greenfield runoff method

Method

i

IH124

▼

IH124

SAAR (mm)

i

My value

950

mm

Map value

How should SPR be derived?

i

WRAP soil type

▼

WRAP soil type

i

3

▼

SPR

i

0.37



0.37

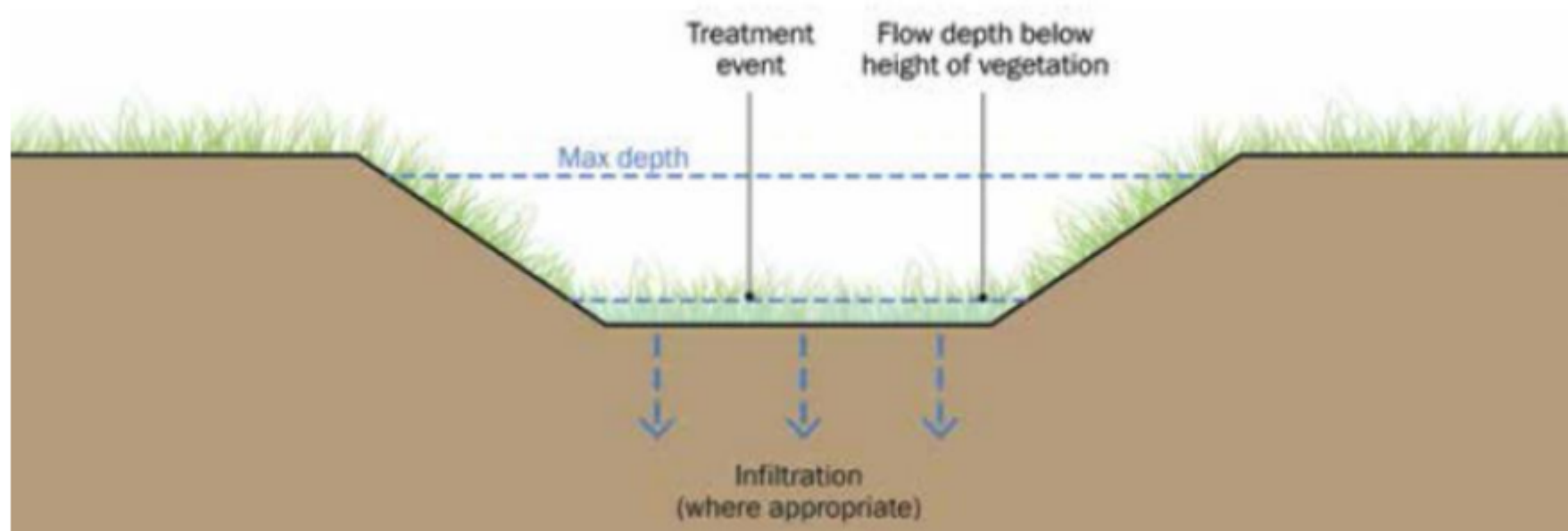
QBar (IH124) (l/s)

i

0.57

l/s

Swale Cross Section



Note: Crate soak-always may be used as an alternative provide the stated attenuation volumes are included .



Appendix 2

Calculations

**Southwest Environmental Limited**80-83 Long Lane
London
EC1A 9ETRevision: **1.00**Job No: **S25-148** Page: **C/01**Section: **Greenmans Lane - Area 2**Prepared By: **WT** Date: **19/03/2025****GENERAL DATA**site location: **England and Wales**60 min rainfall depth of 5 year return period 'R' [mm] = **20**M5-60 to M5-2d rainfall ratio 'r' = **3.50**proposed discharge rate 'v₁' [litre/s] = **0.43**proposed discharge rate 'v₂' [litre/s] =allowance for climate change: **45%****SUMMARY OF CALCULATIONS**required storage volume for discharge rate 'v₁' = **64.91** m³required storage volume for discharge rate 'v₂' = m³**AREA DATA**impermeability [%] effective area [m²]impermeable area 'A₁' [m²] = **850**

100.00 850

landscaping and/or green roof area 'A₂' [m²] = **0**

20.00 0

other partially permeable area 'A₃' [m²] = **0**

20.00 0

AREA DRAINED TO ATTENUATION TANK = 850 m²**REQUIRED STORAGE VOLUME PER RAINFALL DURATION FOR DISCHARGE RATE v₁**

rainfall duration [min]	rainfall factor Z1	M5-D rainfalls [mm]	M1-D			M50-D			M100-D			outflow from attenuation tank [m ³]	required storage [m ³]
			Z2	rainfalls [mm]	inflow [m ³]	Z2	rainfalls [mm]	inflow [m ³]	Z2	rainfalls [mm]	inflow [m ³]		
5	0.39	7.80	0.61	6.95	5.91	1.61	18.21	15.48	1.86	21.00	17.85	0.13	17.73
10	0.54	10.80	0.61	9.58	8.14	1.66	25.96	22.07	1.92	30.11	25.59	0.26	25.34
15	0.65	13.00	0.62	11.61	9.87	1.68	31.67	26.92	1.96	36.91	31.37	0.39	30.99
30	0.82	16.40	0.63	14.88	12.65	1.71	40.63	34.53	2.00	47.59	40.45	0.77	39.68
60	1.00	20.00	0.64	18.56	15.78	1.73	50.17	42.64	2.03	58.87	50.04	1.55	48.49
120	1.19	23.80	0.66	22.61	19.22	1.72	59.44	50.52	2.01	69.53	59.10	3.10	56.01
240	1.38	27.60	0.67	26.83	22.80	1.71	68.42	58.16	1.99	79.61	67.67	6.19	61.47
360	1.51	30.20	0.68	29.79	25.33	1.70	74.39	63.23	1.97	86.20	73.27	9.29	63.98
600	1.68	33.60	0.69	33.48	28.46	1.68	81.77	69.51	1.94	94.58	80.39	15.48	64.91
1440	2.03	40.60	0.70	41.28	35.09	1.64	96.33	81.88	1.89	110.98	94.33	37.15	57.18

* Z2 is a growth factor from M5 rainfalls

REQUIRED STORAGE VOLUME PER RAINFALL DURATION FOR DISCHARGE RATE v₂

rainfall duration [min]	rainfall factor Z1	M5-D rainfalls [mm]	ignore			ignore			M100-D			outflow from attenuation tank [m ³]	required storage [m ³]
			Z2	rainfalls [mm]	inflow [m ³]	Z2	rainfalls [mm]	inflow [m ³]	Z2	rainfalls [mm]	inflow [m ³]		
5	0.39	7.80											
10	0.54	10.80											
15	0.65	13.00											
30	0.82	16.40											
60	1.00	20.00											
120	1.19	23.80											
240	1.38	27.60											
360	1.51	30.20											
600	1.68	33.60											
1440	2.03	40.60											

* Z2 is a growth factor from M5 rainfalls

**Southwest Environmental Limited**80-83 Long Lane
London
EC1A 9ETRevision: **1.00**Job No: **S25-148** Page: **C/01**Section: **Greenmans Lane - Area 1**Prepared By: **WT** Date: **19/03/2025****GENERAL DATA**site location: **England and Wales**60 min rainfall depth of 5 year return period 'R' [mm] = **20**M5-60 to M5-2d rainfall ratio 'r' = **3.50**proposed discharge rate 'v₁' [litre/s] = **0.23**proposed discharge rate 'v₂' [litre/s] =allowance for climate change: **45%****SUMMARY OF CALCULATIONS**required storage volume for discharge rate 'v₁' = **39.01** m³required storage volume for discharge rate 'v₂' = m³**AREA DATA**impermeability [%] effective area [m²]impermeable area 'A₁' [m²] = **500**

100.00 500

landscaping and/or green roof area 'A₂' [m²] = **0**

20.00 0

other partially permeable area 'A₃' [m²] = **0**

20.00 0

AREA DRAINED TO ATTENUATION TANK = 500 m²**REQUIRED STORAGE VOLUME PER RAINFALL DURATION FOR DISCHARGE RATE v₁**

rainfall duration [min]	rainfall factor Z1	M5-D rainfalls [mm]	M1-D			M50-D			M100-D			outflow from attenuation tank [m ³]	required storage [m ³]
			Z2	rainfalls [mm]	inflow [m ³]	Z2	rainfalls [mm]	inflow [m ³]	Z2	rainfalls [mm]	inflow [m ³]		
5	0.39	7.80	0.61	6.95	3.47	1.61	18.21	9.11	1.86	21.00	10.50	0.07	10.43
10	0.54	10.80	0.61	9.58	4.79	1.66	25.96	12.98	1.92	30.11	15.06	0.14	14.92
15	0.65	13.00	0.62	11.61	5.81	1.68	31.67	15.83	1.96	36.91	18.45	0.21	18.25
30	0.82	16.40	0.63	14.88	7.44	1.71	40.63	20.31	2.00	47.59	23.79	0.41	23.38
60	1.00	20.00	0.64	18.56	9.28	1.73	50.17	25.09	2.03	58.87	29.44	0.83	28.61
120	1.19	23.80	0.66	22.61	11.31	1.72	59.44	29.72	2.01	69.53	34.77	1.66	33.11
240	1.38	27.60	0.67	26.83	13.41	1.71	68.42	34.21	1.99	79.61	39.80	3.31	36.49
360	1.51	30.20	0.68	29.79	14.90	1.70	74.39	37.20	1.97	86.20	43.10	4.97	38.13
600	1.68	33.60	0.69	33.48	16.74	1.68	81.77	40.89	1.94	94.58	47.29	8.28	39.01
1440	2.03	40.60	0.70	41.28	20.64	1.64	96.33	48.17	1.89	110.98	55.49	19.87	35.62

* Z2 is a growth factor from M5 rainfalls

REQUIRED STORAGE VOLUME PER RAINFALL DURATION FOR DISCHARGE RATE v₂

rainfall duration [min]	rainfall factor Z1	M5-D rainfalls [mm]	ignore			ignore			M100-D			outflow from attenuation tank [m ³]	required storage [m ³]
			Z2	rainfalls [mm]	inflow [m ³]	Z2	rainfalls [mm]	inflow [m ³]	Z2	rainfalls [mm]	inflow [m ³]		
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