



17 March 2026

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FAO: Gary Chandler

Ref: 24188

Barn Conversion at Gibbeshaven Farm, Furnace Farm Road, Felbridge

Dear Sirs

Further to your email of 13th March 2026. We understand the permeability test pits in the base of the access holes were 0.3m x 0.3m x 0.3m and the water depth observations recorded the time taken to drop from 225mm depth (75% full) to 75mm (25%) full. The tests therefore accord with the provisions of both BS6297 and BRE365.

For drainage fields BS6297 directs that the average Vp value shall be used in determining the size of drainage fields.

We were provided with the following test results with hole Vp averages of 38.66, 50.66 and 33.33 giving an overall soils average of 44.33 secs/mm. The drainage field was then sized accordingly.

HOLE REFERENCE							
D1-At proposed site of drainage field. Depth at bottom of proposed invert 600mm							
D2-At proposed site of sewage treatment plant. Depth at bottom of proposed plant 2200mm							
D3-Adjacent to the new electricity sub station. Depth at bottom of proposed invert 600mm							
Refer to drawing attached for clarity							
RESULTS	1.35 -WET HOLE	TIME (MINS)	TIME (MINS)	TIME (MINS)	AVERAGE	VP	
D1	DONE	90	100	100	96.66	38.66	
D2	DONE	120	130	130	126.66	50.66	
D3	DONE	80	80	90	83.33	33.33	
TESTS ALL CARRIED OUT DURING APRIL 2025-A VERY DRY MONTH							
OBVIOUSLY THE TRIALS WERE NOT MONITORED MINUTE BY MINUTE SO DRAINAGE TIME ESTIMATED BETWEEN CHECKING							

Of the 9 tests undertaken the slowest was 130 minutes (ie 7,800 secs) to drain 75% to 25% of $(0.3 \times 0.3 \times 0.3)\text{m}^3$ ie 0.0135m^3 for a BRE365 a_{p50} value of $\{(0.3+0.3+0.3+0.3) \times 0.5 \times 0.3\} + \{0.3 \times 0.3\}$ ie $0.18+0.09 = 0.27\text{m}^2$. The associated BRE365 $f_{\min}$ soil infiltration rate is $0.0135/(7,800 \times 0.27) = 1.7 \times 10^{-6} \text{ m/sec}$.

The soakaway calculation and drawing have been revised to match the requested $f_{\min}$ test value.

Yours Sincerely,

Aqua Callidus Consulting Ltd

Andy Traves

Enc. ACC241888-01-A
Soakaway calculations



Gibbshaven Farmhouse

Furnace Farm Road

The Croft

Rev.	Amendment	Date	Original Sheet Size A1 (841 x 594) 0 10 mm 50 </	
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Project No.: 24188
Project Title: Gibbeshaven barn

Drainage blanket/CGA pavement or 2D planar infiltration (R156)

Site Location: Felbridge Catchment ID: rof
r = 0.35 (range 0.12 to 0.45)
Drained Area = 260 m² Infiltration Area = 38 m²
Design storm 1 in = 30 year
Runoff volume uplift = 45 % for climate change
Urban Creep allowance = 10 % uplift to Drained Area

Site Considerations

Where determined, what is the depth to highest seasonal groundwater level (GWL) from surface: 5.00 m
Is the infiltration far enough from drainage mounds/fields or other soakaways etc to avoid impact? Yes
What Source Protection Zone (SPZ) is the proposed soakaway located in? None
What is known and proposed about potential contaminated ground on the site? EA/LPA accept infiltration

Technical Assessment

Consequence of failure = 1-No inconvenience
Measured Soil Filtration Rate = 1.70E-06 m/s
Design Soil Filtration Rate = 1.13E-06 m/s
Storage media thickness = 1.200 m
Effective net porosity = 95 %
Depth of cover over media = 0.15 m

Storm Duration	5 min	10 min	15 min	30 min	1 hr	2 hr	4 hr	6 hr	10 hr	24 hr
(secs)	300	600	900	1800	3600	7200	14400	21600	36000	86400
r= 0.35 Value Z1	0.36	0.51	0.62	0.79	1.00	1.22	1.50	1.69	1.95	2.48
Rainfall M5 (mm)	7.1	10.1	12.3	15.7	20.0	24.5	29.9	33.8	38.9	49.6
M30/M5 gf Value Z2	1.45	1.49	1.51	1.53	1.54	1.53	1.51	1.49	1.47	1.41
Rainfall M100 (mm)	10.3	15.1	18.6	24.1	30.8	37.5	45.2	50.4	57.0	70.0
With CC & UC uplift (mm)	16.0	23.4	28.8	37.3	47.7	58.0	70.1	78.1	88.4	108.6
RUNOFF (m ³)	4.17	6.09	7.50	9.71	12.41	15.09	18.22	20.31	22.99	28.22
Infilt capacity (m ³)	0.01	0.03	0.04	0.08	0.16	0.31	0.62	0.93	1.55	3.72
INFILTRATED (m ³)	0.01	0.03	0.04	0.08	0.16	0.31	0.62	0.93	1.55	3.72
Req'd STORAGE (m ³)	4.15	6.06	7.46	9.63	12.26	14.78	17.60	19.38	21.44	24.50
	pass	pass	pass	pass	pass	pass	pass	pass	pass	pass

TOTAL STORAGE AVAILABLE 43.32 m³
M₃₀ 24hr x catchment x+10%UC +45%CC 117 mm 50% M30 volume 15.2 m³ half drain time 95 hr
uplift storage requirement by 50% M30 in mitigation Adjusted req'd STORAGE (m³) 39.7

Overall Assessment

Media base elevation above seasonal high GWL 3.65 m meets GP3
Does the soakaway provide sufficient storage? Yes pass