

Project: Development at 9 Orchardstown Villas, Dublin 14
Soakaway Design to (BRE Digest 365)

GMF STRUCTURAL DESIGN

Revision: A

Drwg ref.	Made by	Checked	Date
C-01	GF	GF	06-21

Description	Value	Unit
Standard Average Annual Rainfall (SAAR)	825	mm
Storm Return Period	10	years
Total Impervious Area	22.50	sqm
Infiltration Rate	3.70E-05	m/s

Infiltration Test Results

Description	Value	Unit
V ₁₅₋₂₅	1.066	m ³
Q ₁₅₋₂₅	2.52	m ³
t ₁₅₋₂₅	180.00	min
Soil infiltration rate (i)	3.70E-05	m/s

Trial Hole Info

Description	Value	Unit
Length	1.2	m
Width	0.6	m
Depth	1.2	m
Effective Depth	1.0	m

Proposed Soakaway Design

Description	Value	Unit
Length	2.400	m
Width	1.000	m
Depth	1.200	m
Effective Depth	1.000	m

Duration D	Rainfall R	Rainfall Intensity	Inflow Q	Effective Volume V _{eff}	Surface Area A _{eff}	Infiltration Rate	Outflow Q	Soakaway Volume V _s
(min)	(mm)	(mm/h)	(m ³)	(m ³)	(m ²)	(m/s)	(m ³)	(m ³)
15	11.3	45.2	1.376	1.44	4.06	3.70E-05	0.36	1.243
30	14.9	29.8	1.816	1.44	4.06	3.70E-05	0.272	1.566
60	19.1	19.1	2.320	1.44	4.06	3.70E-05	0.164	1.786
120	24	12.0	2.928	1.44	4.06	3.70E-05	0.088	1.840
180	27.5	9.2	3.385	1.44	4.06	3.70E-05	0.057	1.723
240	31	7.6	3.782	1.44	4.06	3.70E-05	0.037	1.606
360	36	6.0	4.392	1.44	4.06	3.70E-05	0.024	1.436
480	40.5	5.1	4.941	1.44	4.06	3.70E-05	0.016	1.269
720	45	3.8	5.490	1.44	4.06	3.70E-05	0.009	1.038
1080	50	2.8	6.100	1.44	4.06	3.70E-05	0.005	0.692
1440	55	2.1	6.710	1.44	4.06	3.70E-05	0.003	0.346

Soakaway Volume required 1.840 m³

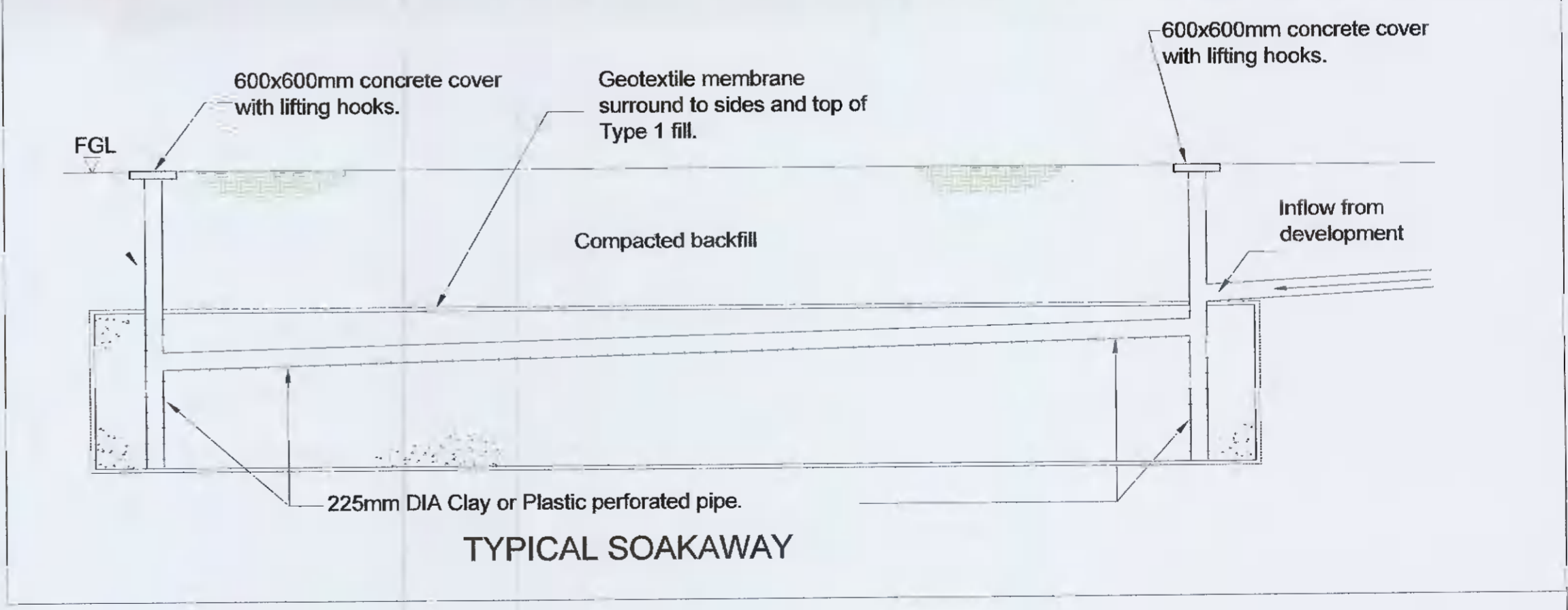
Time of Emptying half storage Volume 1.69 hrs < 24 hrs so satisfies BRE 365 requirements

Notes

- All calculations in accordance to "BRE Digest 365 September 1981" with Minor Revisions 2003
- Infiltration rate taken from site tests on 8th April by GMF Structural Design Limited
- Materials used for soakaway to have a percentage of voids no less than 63.9%



PERCOLATION TEST UNDERTAKEN 13-10-2021



LEGEND

--- New 150 Ø PVC Drain@1:80

--- Existing Drainage

New Manholes and AJ's depths to be confirmed on site and agreed.

Notes	Project	Proposed New House			
	Client:	Aoife & Colin Stoddart			
Figured dimensions only to be taken from this drawing. All dimensions to be checked on site. This drawing is a copy of an electronic file and is copyright.	Address:	9 Orchardstown Villas, Rathfarnham, Dublin 14			
	Drawing title:	Drainage Plan	20-10-21	A	ADDITIONAL INFO
	Date	Rev.	Comments	Scales	1:125@A2
				Date	OCT.2021
				Drawn	GF
				Drg.no.	C-01

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