

Bond House 9-10,  
Lower Bridge St, Dublin 8.  
D08TH76

T: +353 1 9697881  
E: [Dublin@alantraynor.com](mailto:Dublin@alantraynor.com)  
W: [www.alantraynor.com](http://www.alantraynor.com)

Unit 6, Belturbet Business Park,  
Greeny, Belturbet, Co. Cavan.

T: +353 49 9522236  
E: [info@alantraynor.com](mailto:info@alantraynor.com)  
W: [www.alantraynor.com](http://www.alantraynor.com)



Alan Traynor Consulting Engineers Ltd.



Alan Traynor Consulting Engineers Ltd

## **CAVAN COUNTY COUNCIL**

**PROPOSED DEVELOPMENT AT FAIRYMOUNT CLOSE,  
KINGSCOURT, CO.CAVAN.**

**Foul and Surface Water Calculations & Details**

Foul sewer loadings for Development in Fairymount Close

DATA												SEWER DESIGN										
SEWER REFERENCE		HOUSES			UNITS/HOUSE		UNITS		TOTAL UNITS		TOTAL FLOW		Ks = 1.50									
From Manhole	To Manhole	No.	No.	No.	No.	No.	No.	l/s	l/s	l/s	l/s	Size of drain (mm)	Gradient (1 in x)	Length (m)	Capacity (l/sec)	Pipe full Velocity (m/sec)	Actual Velocity (m/sec)	Half full velocity (m/sec)	Self cleansing at half full	Max Velocity (m/sec)	Depth of flow (mm)	Reserve capacity (l/sec)
1	2	3	4	4	5	5	6	7	42	42	3.267	150	60.0	38.262	20.000	1.132	0.831	1.132	OK	16	17	18
F1	Fext	3	14	14	42	42	42	42	42	42	3.267	150	60.0	38.262	20.000	1.132	0.831	1.132	OK	16	41.016	16.733

Storm sewer loadings for development in Fairymount Close

DATA		STORM WATER FLOW Modified Rational Method				SEWER DESIGN Ks = 0.60																								
SEWER REFERENCE		Roofs/yards		Impervious Area		Rainfall : I (mm/hr)		Storm Water Flow $Q=Ap^1Cr^*Cv^*2.78$ lit/sec		Size of drain (mm)		Gradient (* in x)		Length (m)		Capacity (l/sec)		Pipe full Velocity (m/sec)		Actual Velocity (m/sec)		Half full velocity (m/sec)		Max Velocity (m/sec)		Depth of flow (mm)		Reserve capacity (l/sec)		
From Manhole	To Manhole	Area A1	Area A2	Area A1	Area A2	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
S1	S2	0.008	0.028	0.036	0.036	50.00	4.55	225	100	13.589	51.94	1.31	0.81	1.31	44.82	47.38														
S2	Sext	0.000	0.000	0.000	0.036	50.00	4.55	225	100	13.581	51.94	1.31	0.81	1.31	44.82	47.38														

# Housing Development Fairymount Close

## Permeable Paving Design Sheet - Catchment Area

Discharge rate	1.00	Litres/Sec
Total Area of Paving	75	Sq. meters
Thickness of storage layer	0.3	Meters
Total catchment area	211	Sq. meters
Void ratio of stone	0.3	
Available storage	7	Cubic meters
Required Storage	4	Cubic meters

Duration	Return Period	Volume of water	Storage capacity	Outflow	Storage required
Mins	100	m3	m3	m3	m3
5	12.7	2.7	7	0.3	2.4
10	17.7	3.7	7	0.6	3.1
15	20.9	4.4	7	0.9	3.5
30	25.8	5.4	7	1.8	3.6
60	31.9	6.7	7	3.6	3.1
120	39.4	8.3	7	7.2	1.1
180	44.6	9.4	7	10.8	0.0
240	48.8	10.3	7	14.4	0.0
360	55.2	11.6	7	21.6	0.0
540	62.5	13.2	7	32.4	0.0
720	68.2	14.4	7	43.2	0.0
1080	77.3	16.3	7	64.8	0.0
1440	84.4	17.8	7	86.4	0.0
2880	95.0	20.0	7	172.8	0.0

Permeable Paving is designed for a 1:100 year storm return period