Mark Byrne Engineering Services

Gormanstown,
Kilcullen,
Co.Kildare.
087 – 6351207
markbyrneengservices@gmail.com

Planning Department
South Dublin County Council
County Hall,
Tallaght,
Dublin 24,
D24 A3XC

Re: Planning Reference: SD22A/0458 – Joseph & Anne Maher

at 44A Dodsborough Road & Meadowview Grove, Lucan, Co. Dublin

Development: Planning Permission for two storey detached 4 bedroom house with bedroom in the attic space to side of existing semi-detached house with connection into existing main foul sewer and upgrading of existing entrance to a combined entrance /driveway to access the proposed house and all associated site development works.

Additional information Point 1. B.

Soakaway Design and Calculations

Appendix A

Re: Planning Reference: SD22A/0458 – Joseph & Anne Maher

at 44A Dodsborough Road & Meadowview Grove, Lucan, Co. Dublin

Soakaway Design and Calculations

Soakaways designed in accordance with BRE Digest 365.

The total impermeable area from which storm water will flow is estimated to be 87m2.

"A" Area 1 – Roof water From proposed House roof = 87 m2

Inflow – outflow < soakaway volume

Rainfall intensity 50mm/60minutes

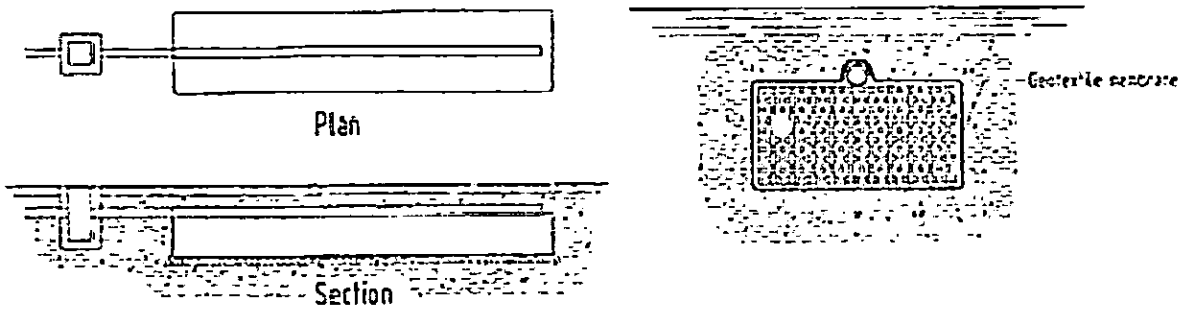
Based on *Bilham Formula / "Rational" Formula*

Soil infiltration rate (f) based on an observed percolation rate of T = 1 minute / 25mm

$$(f) = \frac{up\ 75\% - 25\%}{Ap50\% \times tp\ 75\% - 25\%} = 1.1363 \times 10^{-4}$$

Total impermeable area "A"

Soakway dimension
2m x 2m x2m deep
Inflow at - 0.4m
Effective depth = 2m



Free volume of soakaway fill: 0.35 (35%)

Re: Planning Reference: SD22A/0458 – Joseph & Anne Maher
at 44A Dodsborough Road & Meadowview Grove, Lucan, Co. Dublin

Calculations

Area 1 = Roof water from the proposed extension & flat roof area

Inflow = Area x Rainfall

= 87 m^2 x 0.05m

= 4.35 m^3

Outflow = As 50% (surface area at 50% depth excluding base) x f x duration (60 minutes)

=3m^2 x 1.1363x10^{-4} x 60 x60

=2.1m^3

Soakaway volume = 2m x 2m x 2m x 35% = 2.8m3

Check: 4.35 m^3 – 2.8 m3 = 1.55m^3 less than < 2.1 m^3 soakaway volume