



LEGEND

- Catchment Area 1
- Catchment Area 2
- Car / Van Permeable Paving Areas
- Green roof / grassed landscaped Areas
- Site Development shown in red outline

NOTES

1. Catchment Characteristics:
 - A. Total Site Area = 0.264 Has or 2640m².
 - B. SAAR = 760mm (Met Eireann data).
 - C. Soil (FSR Maps) = Class 4 (0.47).
 - D. M5 - 60 = 15.7mm (Met Eireann data).
 - E. Ratio r = 0.272 (Met Eireann data).

2. Site area catchment calculations:
 Total development site area = 2640m². FSR Soil maps suggest Soil class 4 which indicates high runoff potential or low soil infiltration characteristics. The site is potentially unsuited for infiltration drainage. Greenroof or permeable pavement proposals will be used for interception storage for first flush 5mm rainfall events with flows attenuated and connected to proposed storm network for higher rainfall events. It is proposed therefore to drain off 100% of the site to the proposed surface water / attenuated drainage system.

The drainage catchment will be divided into two areas as follows:
 Area 1 = 990m² which will discharge surface water to attenuation tank 1.
 Area 2 = 1650m² which will discharge surface water to attenuation tank 2.
 NOTE: As per Dun Laoghaire Rathdosn request, small sedum roof areas have been omitted from following calculations.

3. River Water Quality Protection - Criterion 1
 Interception Storage - Criterion 1.1:
 Greater Dublin Strategic Study recommends calculating 80% runoff from hard paved areas and 5mm rainfall for first flush interception.

Proportion of hardstanding Area 1 calculated as follows:
 Area 1 in total = 990m²
 Less car/van parking permeable pavement = 87m²
 Hardstanding Area draining to storm network = 903m²
 Interception volume = 903m² x 0.8 x 0.005 = 3.612 m³
 Area 2 in total = 1650m²
 Less Greenroof areas = 735m²
 Less Grassed landscaped areas = 292m²
 Hardstanding Area draining to storm network = 623m²
 Interception volume = 623m² x 0.8 x 0.005 = 2.492 m³

It is proposed to treat interception storage volumes via separators located near the storm attenuation tanks. Tanks to be sized to meet Criteria 1.2 shown next.

Treatment Volume - Criterion 1.2
 Greater Dublin Strategic Study recommends calculating 80% runoff from hard paved areas and 15mm rainfall. CIRIA 521 recommends equation Vt using the M5 - 60mm rainfall for the site which is 15.7mm. PIMP for site is 58%.

Proportion of hardstanding areas calculated above in section 3. Therefore the treatment volume is calculated as follows:
 Area 1 Treatment Volume = 903m² x 0.8 x 0.015 = 10.8m³
 Area 2 Treatment Volume = 623m² x 0.8 x 0.015 = 7.5m³
 Total Volume required for treatment = 18.3m³.

Alternatively, using CIRIA 521 Equation Vt which is:
 Vt(m³/ha) = 9 x (M5-60) (SOIL/2 + (1-SOIL/2) x PIMP, treatment volume is:
 Treatment Volume for site = 9 x 15.7 (0.47/2 + (1-0.47/2) x 0.58) = 96m³/ha.
 The area of the site is 0.264 has, therefore treatment volume is:

96m³ x 0.264 = 25.34 m³. This is the equivalent of 22mm rainfall compared with the first treatment volume calculation using 15mm.

In this site, it is proposed to use treatment volumes as calculated in the first equation above, which is 18.3m³. It is proposed to use separators 10m³ and 8.2m³ in capacity for interception and treatment volume.

Planning Drawing
 Not for Construction
 This drawing has been issued for information purposes only and must not be used for construction under any circumstances

| Rev. No. | Date | REVISION NOTE | Drn. By | Chkd. By |
|----------|------------|-----------------|---------|----------|
| A | 2019-04-03 | Layout Revision | DF | GL |

| Client | Project | Title | Drn. By | Chkd. By | Apprd. By | Scale | Dwg. No. | Revision |
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| Bartra Property (Eblana) Limited | The Old School House, Eblana Avenue Dun Laoghaire, County Dublin | Contributing Rainfall Catchment Areas to Storm Network System | DF | GL | RF | 1:250 | B098-011 | A |

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