

## Rain

## Rainwater disposal to BRE Digest 365

Job No. 2386 Address: Gladwyn, The Street. East Preston Date: December 2018

|                 |        |          |      |                      |                        |
|-----------------|--------|----------|------|----------------------|------------------------|
| Rainfall ratio  | 0.35   | Rn index | 8    | Annual rainfall      | England SE & central S |
|                 |        |          |      | 2014                 |                        |
| Catchment areas | Length | Width    | Area | 2013                 |                        |
| Roof 1          | 1      | 78       | 78   | 2012                 |                        |
| Roof 2          | 1      | 23.4     | 23   | Average 1961-2010    | 772                    |
| Roof 3          |        |          | 0    |                      |                        |
| Roof 4          |        |          | 0    |                      |                        |
| Surface 1       |        |          | 0    | <b>Total 2014 m3</b> | <b>0</b>               |
| Surface 2       |        |          | 0    | <b>Expected m3</b>   | <b>78</b>              |
| Surface 3       |        |          | 0    | Drain slope 1in?     | 200                    |
| Total area      |        |          | 101  | Roughness factor n   | 0.011                  |

| Duration D | Time  | Z1     | M5-D  | M5    | Z2     | M10-D | Volume | drain rate | drain dia |
|------------|-------|--------|-------|-------|--------|-------|--------|------------|-----------|
| mins       | index | factor | mm    | index | factor | mm    | m3     | l/sec      | mm        |
| 5          | 1     | 0.357  | 7.13  | 1     | 1.20   | 8.58  | 0.87   | 2.9        | 86        |
| 10         | 2     | 0.507  | 10.13 | 2     | 1.22   | 12.37 | 1.25   | 2.09       | 76        |
| 15         | 3     | 0.617  | 12.33 | 2     | 1.23   | 15.16 | 1.54   | 1.71       | 71        |
| 30         | 4     | 0.787  | 15.73 | 3     | 1.24   | 19.51 | 1.98   | 1.1        | 60        |
| 60         | 5     | 1.000  | 20    | 4     | 1.24   | 24.8  | 2.51   | 0.7        | 51        |
| 120        | 6     | 1.223  | 24.47 | 4     | 1.24   | 30.34 | 3.08   | 0.43       | 42        |
| 240        | 7     | 1.497  | 29.93 | 5     | 1.22   | 36.53 | 3.70   | 0.26       | 35        |
| 360        | 8     | 1.690  | 33.8  | 6     | 1.21   | 40.85 | 4.14   | 0.19       | 31        |
| 600        | 9     | 1.947  | 38.93 | 6     | 1.19   | 46.46 | 4.71   | 0.13       | 27        |
| 1440       | 10    | 2.480  | 49.6  | 7     | 1.17   | 58.07 | 5.89   | 0.07       | 21        |

|                     |          |       |           |          |          |
|---------------------|----------|-------|-----------|----------|----------|
| Try Soakaway        | Length l | Depth | eff depth | vol fact | Voleff W |
|                     | 3.5      | 1.6   | 1.2       | 0.95     | 3.99     |
| Infiltration rate f | 3.63E-06 |       |           |          |          |

## Solving for width

| DurationD | lfD60 | dfD60 W | Width m | Store vol | 0.5 empty |
|-----------|-------|---------|---------|-----------|-----------|
| 5         | 0.005 | 0.001   | 0.22    | 0.91      | 7.81      |
| 10        | 0.009 | 0.003   | 0.31    | 1.31      | 10.95     |
| 15        | 0.014 | 0.004   | 0.38    | 1.6       | 13.16     |
| 30        | 0.027 | 0.008   | 0.49    | 2.05      | 16.39     |
| 60        | 0.055 | 0.016   | 0.61    | 2.58      | 19.99     |
| 120       | 0.110 | 0.031   | 0.74    | 3.1       | 23.31     |
| 240       | 0.220 | 0.063   | 0.86    | 3.61      | 26.41     |
| 360       | 0.329 | 0.094   | 0.93    | 3.92      | 28.2      |
| 600       | 0.549 | 0.157   | 1.00    | 4.22      | 29.84     |
| 1440      | 1.317 | 0.376   | 1.05    | 4.4       | 30.83     |

Polystorm Light modular cells are 1x0.5x0.4 volume 0.2m3 21 cells needed