

Cascade Summary of Results for complex celular storage.SRCX

| Upstream Structures | Outflow To | Overflow To |
|---------------------|------------|-------------|
| Trench 3.SRCX       | (None)     | (None)      |
| Trench 2.SRCX       |            |             |
| Trench 1.SRCX       |            |             |
| 11.SRCX             |            |             |
| 12.SRCX             |            |             |
| 13.SRCX             |            |             |
| 8.SRCX              |            |             |
| 14.SRCX             |            |             |
| 15.SRCX             |            |             |
| Trench 4.SRCX       |            |             |
| Trench 5.SRCX       |            |             |
| Trench 6.SRCX       |            |             |
| 1.SRCX              |            |             |
| 2 into 1.SRCX       |            |             |
| 3.SRCX              |            |             |
| 4.SRCX              |            |             |
| 9 into 4.SRCX       |            |             |
| 10 into 4.SRCX      |            |             |
| 5.SRCX              |            |             |
| 6.SRCX              |            |             |
| 7.SRCX              |            |             |
| 16 (direct).SRCX    |            |             |
| 17 (direct).SRCX    |            |             |
| 18 (direct).SRCX    |            |             |
| 19 (direct).SRCX    |            |             |
| 20 (direct).SRCX    |            |             |
| 21 direct.SRCX      |            |             |
| 23 into 21.SRCX     |            |             |
| 24 into 21.SRCX     |            |             |
| 25 into 21.SRCX     |            |             |
| 22 direct.SRCX      |            |             |
| 26 in 22.SRCX       |            |             |
| 27 in 22.SRCX       |            |             |
| 28 into 22.SRCX     |            |             |

Half Drain Time : 645 minutes.

| Storm Event   | Max Level (m) | Max Depth (m) | Max Infiltration (l/s) | Max Overflow (l/s) | Max Σ Outflow (l/s) | Max Volume (m³) | Status |
|---------------|---------------|---------------|------------------------|--------------------|---------------------|-----------------|--------|
| 15 min Summer | 120.986       | 1.386         | 2.9                    | 0.0                | 2.9                 | 92.1            | O K    |

| Storm Event   | Rain (mm/hr) | Flooded Volume (m³) | Overflow Volume (m³) | Time-Peak (mins) |
|---------------|--------------|---------------------|----------------------|------------------|
| 15 min Summer | 124.362      | 0.0                 | 0.0                  | 19               |

Coombe House  
 Coombe Square  
 Thatcham RG19 4JF



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 File System cellular storage...

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Micro Drainage Source Control 2016.1

Cascade Summary of Results for complex celular storage.SRCX

| <b>Storm Event</b> | <b>Max Level (m)</b> | <b>Max Depth (m)</b> | <b>Max Infiltration (l/s)</b> | <b>Max Overflow (l/s)</b> | <b>Max Σ Outflow (l/s)</b> | <b>Max Volume (m³)</b> | <b>Status</b> |
|--------------------|----------------------|----------------------|-------------------------------|---------------------------|----------------------------|------------------------|---------------|
| 30 min Summer      | 121.310              | 1.710                | 3.1                           | 0.0                       | 3.1                        | 121.5                  | O K           |
| 60 min Summer      | 121.527              | 1.927                | 3.1                           | 0.0                       | 3.1                        | 151.1                  | O K           |
| 120 min Summer     | 121.725              | 2.125                | 3.1                           | 0.0                       | 3.1                        | 178.1                  | O K           |
| 180 min Summer     | 121.815              | 2.215                | 3.1                           | 0.0                       | 3.1                        | 190.4                  | O K           |
| 240 min Summer     | 121.858              | 2.258                | 3.1                           | 0.0                       | 3.1                        | 196.2                  | O K           |
| 360 min Summer     | 121.894              | 2.294                | 3.1                           | 0.0                       | 3.1                        | 201.2                  | O K           |
| 480 min Summer     | 121.890              | 2.290                | 3.1                           | 0.0                       | 3.1                        | 200.6                  | O K           |
| 600 min Summer     | 121.871              | 2.271                | 3.1                           | 0.0                       | 3.1                        | 197.9                  | O K           |
| 720 min Summer     | 121.849              | 2.249                | 3.1                           | 0.0                       | 3.1                        | 195.0                  | O K           |
| 960 min Summer     | 121.798              | 2.198                | 3.1                           | 0.0                       | 3.1                        | 188.0                  | O K           |
| 1440 min Summer    | 121.697              | 2.097                | 3.1                           | 0.0                       | 3.1                        | 174.2                  | O K           |
| 2160 min Summer    | 121.562              | 1.962                | 3.1                           | 0.0                       | 3.1                        | 155.8                  | O K           |
| 2880 min Summer    | 121.438              | 1.838                | 3.1                           | 0.0                       | 3.1                        | 138.9                  | O K           |
| 4320 min Summer    | 121.229              | 1.629                | 3.1                           | 0.0                       | 3.1                        | 110.3                  | O K           |
| 5760 min Summer    | 120.950              | 1.350                | 2.9                           | 0.0                       | 2.9                        | 89.8                   | O K           |
| 7200 min Summer    | 120.701              | 1.101                | 2.7                           | 0.0                       | 2.7                        | 73.2                   | O K           |
| 8640 min Summer    | 120.494              | 0.894                | 2.5                           | 0.0                       | 2.5                        | 59.5                   | O K           |
| 10080 min Summer   | 120.321              | 0.721                | 2.4                           | 0.0                       | 2.4                        | 47.9                   | O K           |
| 15 min Winter      | 121.154              | 1.554                | 3.0                           | 0.0                       | 3.0                        | 103.3                  | O K           |
| 30 min Winter      | 121.422              | 1.822                | 3.1                           | 0.0                       | 3.1                        | 136.7                  | O K           |
| 60 min Winter      | 121.669              | 2.069                | 3.1                           | 0.0                       | 3.1                        | 170.4                  | O K           |

| <b>Storm Event</b> | <b>Rain (mm/hr)</b> | <b>Flooded Volume (m³)</b> | <b>Overflow Volume (m³)</b> | <b>Time-Peak (mins)</b> |
|--------------------|---------------------|----------------------------|-----------------------------|-------------------------|
| 30 min Summer      | 82.900              | 0.0                        | 0.0                         | 34                      |
| 60 min Summer      | 52.662              | 0.0                        | 0.0                         | 64                      |
| 120 min Summer     | 32.267              | 0.0                        | 0.0                         | 124                     |
| 180 min Summer     | 23.862              | 0.0                        | 0.0                         | 182                     |
| 240 min Summer     | 19.123              | 0.0                        | 0.0                         | 242                     |
| 360 min Summer     | 14.022              | 0.0                        | 0.0                         | 362                     |
| 480 min Summer     | 11.233              | 0.0                        | 0.0                         | 478                     |
| 600 min Summer     | 9.449               | 0.0                        | 0.0                         | 526                     |
| 720 min Summer     | 8.200               | 0.0                        | 0.0                         | 586                     |
| 960 min Summer     | 6.551               | 0.0                        | 0.0                         | 712                     |
| 1440 min Summer    | 4.765               | 0.0                        | 0.0                         | 982                     |
| 2160 min Summer    | 3.459               | 0.0                        | 0.0                         | 1384                    |
| 2880 min Summer    | 2.753               | 0.0                        | 0.0                         | 1788                    |
| 4320 min Summer    | 1.991               | 0.0                        | 0.0                         | 2548                    |
| 5760 min Summer    | 1.581               | 0.0                        | 0.0                         | 3288                    |
| 7200 min Summer    | 1.321               | 0.0                        | 0.0                         | 4032                    |
| 8640 min Summer    | 1.141               | 0.0                        | 0.0                         | 4760                    |
| 10080 min Summer   | 1.009               | 0.0                        | 0.0                         | 5456                    |
| 15 min Winter      | 124.362             | 0.0                        | 0.0                         | 19                      |
| 30 min Winter      | 82.900              | 0.0                        | 0.0                         | 34                      |
| 60 min Winter      | 52.662              | 0.0                        | 0.0                         | 62                      |

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| Storm Event      | Max Level (m) | Max Depth (m) | Max Infiltration (1/s) | Max Overflow (1/s) | Max Σ Outflow (1/s) | Max Volume (m³) | Status     |
|------------------|---------------|---------------|------------------------|--------------------|---------------------|-----------------|------------|
| 120 min Winter   | 121.899       | 2.299         | 3.1                    | 0.0                | 3.1                 | 201.8           | O K        |
| 180 min Winter   | 122.009       | 2.409         | 3.1                    | 0.0                | 3.1                 | 216.8           | Flood Risk |
| 240 min Winter   | 122.065       | 2.465         | 3.1                    | 0.0                | 3.1                 | 224.5           | Flood Risk |
| 360 min Winter   | 122.124       | 2.524         | 3.1                    | 0.0                | 3.1                 | 232.5           | Flood Risk |
| 480 min Winter   | 122.137       | 2.537         | 3.1                    | 0.0                | 3.1                 | 234.3           | Flood Risk |
| 600 min Winter   | 122.125       | 2.525         | 3.1                    | 0.0                | 3.1                 | 232.7           | Flood Risk |
| 720 min Winter   | 122.098       | 2.498         | 3.1                    | 0.0                | 3.1                 | 229.0           | Flood Risk |
| 960 min Winter   | 122.035       | 2.435         | 3.1                    | 0.0                | 3.1                 | 220.3           | Flood Risk |
| 1440 min Winter  | 121.898       | 2.298         | 3.1                    | 0.0                | 3.1                 | 201.6           | O K        |
| 2160 min Winter  | 121.691       | 2.091         | 3.1                    | 0.0                | 3.1                 | 173.4           | O K        |
| 2880 min Winter  | 121.505       | 1.905         | 3.1                    | 0.0                | 3.1                 | 148.1           | O K        |
| 4320 min Winter  | 121.202       | 1.602         | 3.1                    | 0.0                | 3.1                 | 106.6           | O K        |
| 5760 min Winter  | 120.800       | 1.200         | 2.8                    | 0.0                | 2.8                 | 79.8            | O K        |
| 7200 min Winter  | 120.482       | 0.882         | 2.5                    | 0.0                | 2.5                 | 58.6            | O K        |
| 8640 min Winter  | 120.231       | 0.631         | 2.3                    | 0.0                | 2.3                 | 41.9            | O K        |
| 10080 min Winter | 120.028       | 0.428         | 2.1                    | 0.0                | 2.1                 | 28.5            | O K        |

| Storm Event      | Rain (mm/hr) | Flooded Volume (m³) | Overflow Volume (m³) | Time-Peak (mins) |
|------------------|--------------|---------------------|----------------------|------------------|
| 120 min Winter   | 32.267       | 0.0                 | 0.0                  | 122              |
| 180 min Winter   | 23.862       | 0.0                 | 0.0                  | 180              |
| 240 min Winter   | 19.123       | 0.0                 | 0.0                  | 238              |
| 360 min Winter   | 14.022       | 0.0                 | 0.0                  | 352              |
| 480 min Winter   | 11.233       | 0.0                 | 0.0                  | 464              |
| 600 min Winter   | 9.449        | 0.0                 | 0.0                  | 572              |
| 720 min Winter   | 8.200        | 0.0                 | 0.0                  | 674              |
| 960 min Winter   | 6.551        | 0.0                 | 0.0                  | 762              |
| 1440 min Winter  | 4.765        | 0.0                 | 0.0                  | 1066             |
| 2160 min Winter  | 3.459        | 0.0                 | 0.0                  | 1512             |
| 2880 min Winter  | 2.753        | 0.0                 | 0.0                  | 1928             |
| 4320 min Winter  | 1.991        | 0.0                 | 0.0                  | 2680             |
| 5760 min Winter  | 1.581        | 0.0                 | 0.0                  | 3456             |
| 7200 min Winter  | 1.321        | 0.0                 | 0.0                  | 4184             |
| 8640 min Winter  | 1.141        | 0.0                 | 0.0                  | 4928             |
| 10080 min Winter | 1.009        | 0.0                 | 0.0                  | 5648             |

Coombe House  
Coombe Square  
Thatcham RG19 4JF




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Cascade Rainfall Details for complex celular storage.SRCX

|                       |                   |                       |       |
|-----------------------|-------------------|-----------------------|-------|
| Rainfall Model        | FSR               | Winter Storms         | Yes   |
| Return Period (years) | 100               | Cv (Summer)           | 0.750 |
| Region                | England and Wales | Cv (Winter)           | 0.840 |
| M5-60 (mm)            | 20.000            | Shortest Storm (mins) | 15    |
| Ratio R               | 0.366             | Longest Storm (mins)  | 10080 |
| Summer Storms         | Yes               | Climate Change %      | +30   |

|  |                               |   |
|--|-------------------------------|---|
| Stuart Michael Associates                                |                               | Page 5  |
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| Micro Drainage   | Source Control 2016.1         |   |

Cascade Model Details for complex celular storage.SRCX

Storage is Online Cover Level (m) 122.200

Complex Structure

Cellular Storage

Invert Level (m) 119.600 Safety Factor 2.0  
 Infiltration Coefficient Base (m/hr) 0.18000 Porosity 0.95  
 Infiltration Coefficient Side (m/hr) 0.18000

| Depth (m) | Area (m <sup>2</sup> ) | Inf. Area (m <sup>2</sup> ) | Depth (m) | Area (m <sup>2</sup> ) | Inf. Area (m <sup>2</sup> ) |
|-----------|------------------------|-----------------------------|-----------|------------------------|-----------------------------|
| 0.000     | 70.0                   | 70.0                        | 1.600     | 70.0                   | 123.5                       |

Tank or Pond

Invert Level (m) 121.200

| Depth (m) | Area (m <sup>2</sup> ) | Depth (m) | Area (m <sup>2</sup> ) |
|-----------|------------------------|-----------|------------------------|
| 0.000     | 70.0                   | 1.000     | 70.0                   |

Weir Overflow Control

Discharge Coef 0.544 Width (m) 1.500 Invert Level (m) 122.200