

|                                                                      |                                                |                                                                                     |
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| T J Booth Associates                                                 |                                                | Page 1                                                                              |
| 104 Yorkshire St<br>Rochdale<br>Lancashire OL16 1JY                  | SW attenuation<br>davies<br>bank top farm shop |  |
| Date april 2026 - rev0<br>File calc-tjba-davies-bank top farm sho... | Designed By ds<br>Checked By                   |                                                                                     |
| Micro Drainage                                                       | Source Control W.10.4                          |                                                                                     |

### Summary of Results for 100 year Return Period (+45%)

Half Drain Time : 64 minutes

| Storm<br>Duration<br>(mins) | Maximum<br>Control<br>(l/s) | Maximum<br>Filtration<br>(l/s) | Maximum<br>Outflow<br>(l/s) | Maximum<br>Water Level<br>(m OD) | Maximum<br>Depth<br>(m) | Maximum<br>Volume<br>(m <sup>3</sup> ) | Status |
|-----------------------------|-----------------------------|--------------------------------|-----------------------------|----------------------------------|-------------------------|----------------------------------------|--------|
| 15 Summer                   | 5.0                         | 0.0                            | 5.0                         | 162.4023                         | 0.4622                  | 19.8                                   | O K    |
| 30 Summer                   | 5.0                         | 0.0                            | 5.0                         | 162.5348                         | 0.5948                  | 25.4                                   | O K    |
| 60 Summer                   | 5.0                         | 0.0                            | 5.0                         | 162.6083                         | 0.6683                  | 28.6                                   | O K    |
| 120 Summer                  | 5.0                         | 0.0                            | 5.0                         | 162.6158                         | 0.6758                  | 28.9                                   | O K    |
| 180 Summer                  | 5.0                         | 0.0                            | 5.0                         | 162.5878                         | 0.6478                  | 27.7                                   | O K    |
| 240 Summer                  | 5.0                         | 0.0                            | 5.0                         | 162.5508                         | 0.6108                  | 26.1                                   | O K    |
| 360 Summer                  | 5.0                         | 0.0                            | 5.0                         | 162.4682                         | 0.5282                  | 22.6                                   | O K    |
| 480 Summer                  | 5.0                         | 0.0                            | 5.0                         | 162.3647                         | 0.4247                  | 18.2                                   | O K    |
| 600 Summer                  | 5.0                         | 0.0                            | 5.0                         | 162.2733                         | 0.3332                  | 14.2                                   | O K    |
| 720 Summer                  | 5.0                         | 0.0                            | 5.0                         | 162.1992                         | 0.2592                  | 11.1                                   | O K    |
| 960 Summer                  | 5.0                         | 0.0                            | 5.0                         | 162.0943                         | 0.1542                  | 6.6                                    | O K    |
| 1440 Summer                 | 4.4                         | 0.0                            | 4.4                         | 161.9998                         | 0.0598                  | 2.5                                    | O K    |
| 2160 Summer                 | 3.6                         | 0.0                            | 3.6                         | 161.9413                         | 0.0013                  | 0.0                                    | O K    |
| 2880 Summer                 | 2.9                         | 0.0                            | 2.9                         | 161.9400                         | 0.0000                  | 0.0                                    | O K    |
| 4320 Summer                 | 2.1                         | 0.0                            | 2.1                         | 161.9400                         | 0.0000                  | 0.0                                    | O K    |
| 5760 Summer                 | 1.7                         | 0.0                            | 1.7                         | 161.9400                         | 0.0000                  | 0.0                                    | O K    |
| 7200 Summer                 | 1.5                         | 0.0                            | 1.5                         | 161.9400                         | 0.0000                  | 0.0                                    | O K    |
| 8640 Summer                 | 1.3                         | 0.0                            | 1.3                         | 161.9400                         | 0.0000                  | 0.0                                    | O K    |
| 10080 Summer                | 1.1                         | 0.0                            | 1.1                         | 161.9400                         | 0.0000                  | 0.0                                    | O K    |
| 15 Winter                   | 5.0                         | 0.0                            | 5.0                         | 162.4722                         | 0.5322                  | 22.8                                   | O K    |
| 30 Winter                   | 5.0                         | 0.0                            | 5.0                         | 162.6268                         | 0.6868                  | 29.4                                   | O K    |
| 60 Winter                   | 5.0                         | 0.0                            | 5.0                         | 162.7273                         | 0.7873                  | 33.6                                   | O K    |
| 120 Winter                  | 5.0                         | 0.0                            | 5.0                         | 162.7283                         | 0.7883                  | 33.7                                   | O K    |
| 180 Winter                  | 5.0                         | 0.0                            | 5.0                         | 162.6798                         | 0.7398                  | 31.6                                   | O K    |
| 240 Winter                  | 5.0                         | 0.0                            | 5.0                         | 162.6203                         | 0.6803                  | 29.1                                   | O K    |
| 360 Winter                  | 5.0                         | 0.0                            | 5.0                         | 162.4868                         | 0.5467                  | 23.4                                   | O K    |
| 480 Winter                  | 5.0                         | 0.0                            | 5.0                         | 162.3167                         | 0.3767                  | 16.1                                   | O K    |
| 600 Winter                  | 5.0                         | 0.0                            | 5.0                         | 162.1873                         | 0.2472                  | 10.6                                   | O K    |
| 720 Winter                  | 5.0                         | 0.0                            | 5.0                         | 162.0977                         | 0.1577                  | 6.7                                    | O K    |

| Storm<br>Duration<br>(mins) | Rain<br>(mm/hr) | Time-Peak<br>(mins) |
|-----------------------------|-----------------|---------------------|
| 15 Summer                   | 89.23           | 17                  |
| 30 Summer                   | 61.54           | 31                  |
| 60 Summer                   | 40.51           | 56                  |
| 120 Summer                  | 25.63           | 88                  |
| 180 Summer                  | 19.23           | 124                 |
| 240 Summer                  | 15.63           | 158                 |
| 360 Summer                  | 11.65           | 228                 |
| 480 Summer                  | 9.44            | 290                 |
| 600 Summer                  | 8.01            | 350                 |
| 720 Summer                  | 7.00            | 406                 |
| 960 Summer                  | 5.65            | 520                 |
| 1440 Summer                 | 4.17            | 750                 |
| 2160 Summer                 | 3.07            | 1100                |
| 2880 Summer                 | 2.46            | 0                   |
| 4320 Summer                 | 1.81            | 0                   |
| 5760 Summer                 | 1.45            | 0                   |
| 7200 Summer                 | 1.23            | 0                   |
| 8640 Summer                 | 1.07            | 0                   |
| 10080 Summer                | 0.95            | 0                   |
| 15 Winter                   | 89.23           | 17                  |
| 30 Winter                   | 61.54           | 31                  |
| 60 Winter                   | 40.51           | 58                  |
| 120 Winter                  | 25.63           | 94                  |
| 180 Winter                  | 19.23           | 134                 |
| 240 Winter                  | 15.63           | 172                 |
| 360 Winter                  | 11.65           | 246                 |
| 480 Winter                  | 9.44            | 308                 |
| 600 Winter                  | 8.01            | 362                 |
| 720 Winter                  | 7.00            | 414                 |

|                                                                      |                                                |                                                                                     |
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| Date april 2026 - rev0<br>File calc-tjba-davies-bank top farm sho... | Designed By ds<br>Checked By                   |                                                                                     |
| Micro Drainage                                                       | Source Control W.10.4                          |                                                                                     |

Summary of Results for 100 year Return Period (+45%)

| Storm<br>Duration<br>(mins) | Maximum<br>Control<br>(l/s) | Maximum<br>Filtration<br>(l/s) | Maximum<br>Outflow<br>(l/s) | Maximum<br>Water Level<br>(m OD) | Maximum<br>Depth<br>(m) | Maximum<br>Volume<br>(m³) | Status |
|-----------------------------|-----------------------------|--------------------------------|-----------------------------|----------------------------------|-------------------------|---------------------------|--------|
| 960 Winter                  | 4.5                         | 0.0                            | 4.5                         | 162.0103                         | 0.0703                  | 3.0                       | O K    |
| 1440 Winter                 | 3.6                         | 0.0                            | 3.6                         | 161.9400                         | 0.0000                  | 0.0                       | O K    |
| 2160 Winter                 | 2.6                         | 0.0                            | 2.6                         | 161.9400                         | 0.0000                  | 0.0                       | O K    |
| 2880 Winter                 | 2.1                         | 0.0                            | 2.1                         | 161.9400                         | 0.0000                  | 0.0                       | O K    |
| 4320 Winter                 | 1.5                         | 0.0                            | 1.5                         | 161.9400                         | 0.0000                  | 0.0                       | O K    |
| 5760 Winter                 | 1.2                         | 0.0                            | 1.2                         | 161.9400                         | 0.0000                  | 0.0                       | O K    |
| 7200 Winter                 | 1.0                         | 0.0                            | 1.0                         | 161.9400                         | 0.0000                  | 0.0                       | O K    |
| 8640 Winter                 | 0.9                         | 0.0                            | 0.9                         | 161.9400                         | 0.0000                  | 0.0                       | O K    |
| 10080 Winter                | 0.8                         | 0.0                            | 0.8                         | 161.9400                         | 0.0000                  | 0.0                       | O K    |

| Storm<br>Duration<br>(mins) | Rain<br>(mm/hr) | Time-Peak<br>(mins) |
|-----------------------------|-----------------|---------------------|
| 960 Winter                  | 5.65            | 520                 |
| 1440 Winter                 | 4.17            | 0                   |
| 2160 Winter                 | 3.07            | 0                   |
| 2880 Winter                 | 2.46            | 0                   |
| 4320 Winter                 | 1.81            | 0                   |
| 5760 Winter                 | 1.45            | 0                   |
| 7200 Winter                 | 1.23            | 0                   |
| 8640 Winter                 | 1.07            | 0                   |
| 10080 Winter                | 0.95            | 0                   |

|                                                                      |                                                |                                                                                     |
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| Micro Drainage                                                       | Source Control W.10.4                          |                                                                                     |

Rainfall Details

|                       |         |                       |       |                  |     |
|-----------------------|---------|-----------------------|-------|------------------|-----|
| Region                | ENG+WAL | Cv (Summer)           | 0.750 | Summer Storms    | Yes |
| Return Period (years) | 100     | Cv (Winter)           | 0.840 | Winter Storms    | Yes |
| M5-60 (mm)            | 20.000  | Shortest Storm (mins) | 15    | Climate Change % | +45 |
| Ratio-R               | 0.300   | Longest Storm (mins)  | 10080 |                  |     |

Time / Area Diagram

Total Area (ha) = 0.100

| Time (mins) |     | Area  |
|-------------|-----|-------|
| from:       | to: | (ha)  |
| 0           | 4   | 0.100 |

Cellular Storage Details

Infil Coef - Base (m/hr) 0.000000 Porosity 0.95  
Infil Coef - Sides (m/hr) 0.000000 Invert Level (m) 161.940  
Safety Factor 2.0 Ground Level (m) 163.650

| Depth<br>(m) | Area<br>(m <sup>2</sup> ) | Depth<br>(m) | Area<br>(m <sup>2</sup> ) | Depth<br>(m) | Area<br>(m <sup>2</sup> ) | Depth<br>(m) | Area<br>(m <sup>2</sup> ) | Depth<br>(m) | Area<br>(m <sup>2</sup> ) | Depth<br>(m) | Area<br>(m <sup>2</sup> ) | Depth<br>(m) | Area<br>(m <sup>2</sup> ) |
|--------------|---------------------------|--------------|---------------------------|--------------|---------------------------|--------------|---------------------------|--------------|---------------------------|--------------|---------------------------|--------------|---------------------------|
| 0.00         | 45.0                      | 0.40         | 45.0                      | 0.80         | 45.0                      | 1.20         | 45.0                      | 1.60         | 45.0                      | 2.00         | 45.0                      | 2.40         | 45.0                      |
| 0.10         | 45.0                      | 0.50         | 45.0                      | 0.90         | 45.0                      | 1.30         | 45.0                      | 1.70         | 45.0                      | 2.10         | 45.0                      | 2.50         | 45.0                      |
| 0.20         | 45.0                      | 0.60         | 45.0                      | 1.00         | 45.0                      | 1.40         | 45.0                      | 1.80         | 45.0                      | 2.20         | 45.0                      |              |                           |
| 0.30         | 45.0                      | 0.70         | 45.0                      | 1.10         | 45.0                      | 1.50         | 45.0                      | 1.90         | 45.0                      | 2.30         | 45.0                      |              |                           |

Depth / Flow Outflow Control

Invert Level of Control 161.840

| Depth<br>(m) | Flow<br>(l/s) | Depth<br>(m) | Flow<br>(l/s) | Depth<br>(m) | Flow<br>(l/s) | Depth<br>(m) | Flow<br>(l/s) | Depth<br>(m) | Flow<br>(l/s) | Depth<br>(m) | Flow<br>(l/s) |
|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|
| 0.10         | 3.6           | 0.60         | 4.1           | 1.60         | 6.7           | 2.60         | 8.6           | 5.00         | 11.9          | 7.50         | 14.6          |
| 0.20         | 4.9           | 0.80         | 4.7           | 1.80         | 7.1           | 3.00         | 9.2           | 5.50         | 12.5          | 8.00         | 15.1          |
| 0.30         | 5.0           | 1.00         | 5.2           | 2.00         | 7.5           | 3.50         | 10.0          | 6.00         | 13.0          | 8.50         | 15.5          |
| 0.40         | 4.9           | 1.20         | 5.8           | 2.20         | 7.9           | 4.00         | 10.7          | 6.50         | 13.6          | 9.00         | 16.0          |
| 0.50         | 4.6           | 1.40         | 6.3           | 2.40         | 8.3           | 4.50         | 11.3          | 7.00         | 14.1          | 9.50         | 16.4          |