**APPENDIX D**
**Existing Impermeable Areas Plan**

**NOTES:**

1. THIS DRAWING IS INTENDED TO INDICATE THE EXISTING DRAINED AREAS FROM THE STAR RADCLIFFE ACADEMY DEVELOPMENT. IT IS BASED UPON A REVIEW OF THE TOPOGRAPHICAL SURVEY AND AERIAL IMAGES OF THE SITE.
2. FOR THE TOPOGRAPHICAL SURVEY, REFER TO GREENHATCH DRAWING FS1013-GHG-XX-XX-D-U-0002.
3. EXISTING DISCHARGE RATES GIVEN HAVE BEEN CALCULATED USING MICRODRAINAGE. BROWNFIELD RUN-OFF RATES ARE BASED ON THE HARD PAVED AREAS.

**KEY**

PLANNING BOUNDARY

DEVELOPMENT BOUNDARY
TOTAL AREA: 45620m² (4.562ha)

SOFT LANDSCAPING AREA
TOTAL AREA: 25800m² (2.58ha)

HARD LANDSCAPING AREA
TOTAL AREA: 19820m² (1.982ha)

GREENFIELD RUN-OFF RATES

| EVENT | GREENFIELD RUN-OFF |
|---|---|
| 1:1 | 51.9 l/s |
| 1:2 | 58.8 l/s |
| 1:30 | 91.8 l/s |
| 1:100 | 103.7 l/s |
| $Q_{BAR}$ | 59.7 l/s |

GREENFIELD RUN-OFF CALCULATED IN MICRODRAINAGE USING SOURCE CONTROL

| Rev: | Description: | Date: | By: | Chkd: |
|---|---|---|---|---|
| P02 | COMMENTS INCORPORATED | 08.09.23 | HW | PW |
| P01 | STAGE 3 ISSUE | 10.08.23 | SA | PW |

renaissance

Renaissance Associates Ltd
Carvers Warehouse
77 Dale Street
Manchester
M1 2HG

Project:

STAR RADCLIFFE ACADEMY

Drawing Title:

*EXISTING DRAINED AREAS*

Status:

STAGE 3

| Size: | Date: | Drawn by: | Designed by: | Checked by: |
|---|---|---|---|---|
| A1 | JUN 23 | HW | -- | PW |

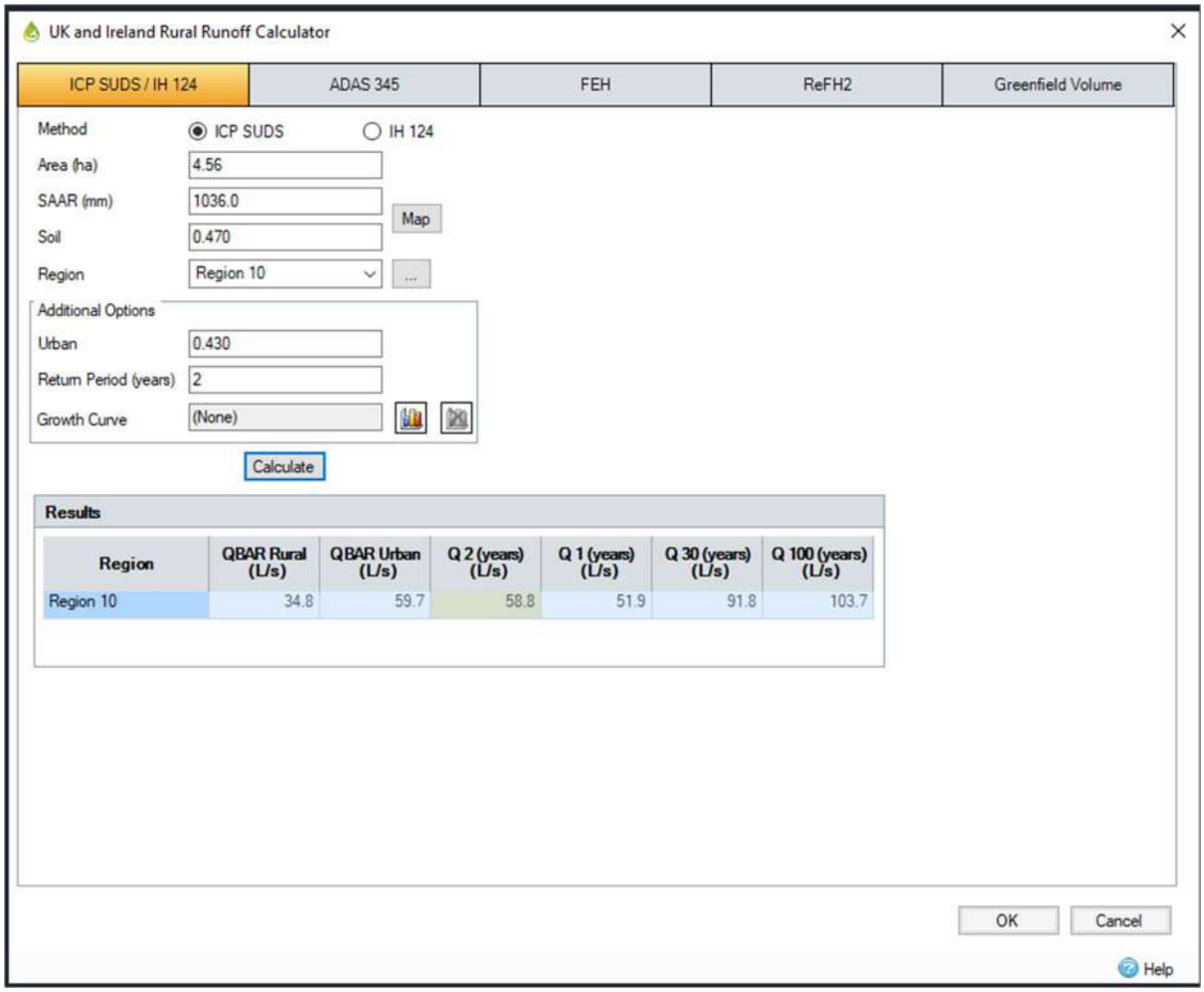
Scale: 1:500 Project No: 2303-02

Project: Originator: Volume: Level: Type: Role: Category/Number: Rev:

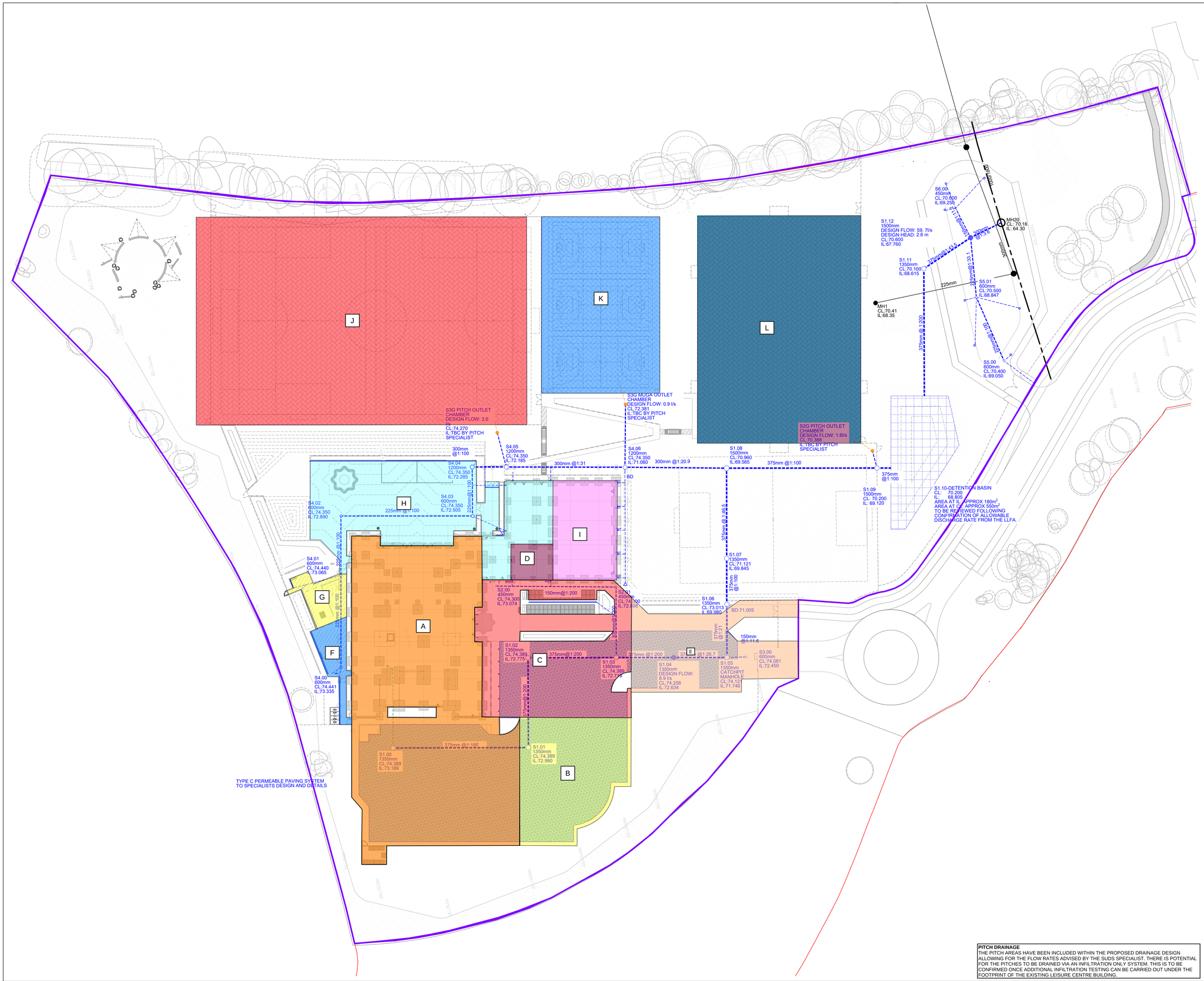
FS1013-REN-EX-00-D-C-5200-P02

This drawing has been prepared for the sole benefit, use and information of the client for the purpose set out in the instructions commissioning it. The liability of **renaissance** in the respect of the information contained in this drawing will not extend to any third party. This document should not be used in whole or part by any third parties without the express written permission of **renaissance**

**APPENDIX E**
**InfoDrainage Greenfield Run-off Rates**


UK and Ireland Rural Runoff Calculator
ICP SUDS / IH 124
ADAS 345
FEH
ReFH2
Greenfield Volume
Method
ICP SUDS
IH 124
Area (ha)
4.56
SAAR (mm)
1036.0
Map
Soil
0.470
Region
Region 10
...
Additional Options
Urban
0.430
Return Period (years)
2
Growth Curve
(None)
Calculate
Results
Region
QBAR Rural (L/s)
QBAR Urban (L/s)
Q 2 (years) (L/s)
Q 1 (years) (L/s)
Q 30 (years) (L/s)
Q 100 (years) (L/s)
Region 10
34.8
59.7
58.8
51.9
91.8
103.7
OK
Cancel
Help

**APPENDIX F**
**Proposed Impermeable Areas Plan**




**NOTES:**

1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH
   - -EXISTING IMPERMEABLE AREA PLAN
   - -PROPOSED BELOW GROUND DRAINAGE DRAWING
   - -MICRODRAINAGE MODEL AND CALCULATION OUTPUTS

PLANNING BOUNDARY

DEVELOPMENT BOUNDARY

| PROPOSED IMPERMEABLE AREA SUMMARY | | |
|---|---|---|
| MANHOLE | HATCH | AREA (ha) |
| S1.00 | A | 0.374 |
| S1.01 | B | 0.105 |
| S1.02 | C | 0.154 |
| S2.00 | D | 0.013 |
| S1.03 | E | 0.102 |
| S4.00 | F | 0.016 |
| S4.01 | G | 0.017 |
| S4.04 | H | 0.161 |
| S4.06 | I | 0.055 |
| S3G PITCH | J | 0.585 |
| S3G MUGA | K | 0.174 |
| S2G PITCH | L | 0.320 |
| S5.00 | M | 0.028 |
| S5.01 | N | 0.063 |
| S6.00 | O | 0.012 |
| | TOTAL | 2.179 |

| SITEWIDE TOTAL AREA | |
|---|---|
| HATCH | AREA (ha) |
| IMPERMEABLE AREA | 2.182 |
| PERMEABLE AREA | 2.380 |
| TOTAL | 4.562 |

**PITCH DRAINAGE**
THE PITCH AREAS HAVE BEEN INCLUDED WITHIN THE PROPOSED DRAINAGE DESIGN ALLOWING FOR THE FLOW RATES ADVISED BY THE SUDS SPECIALIST. THERE IS POTENTIAL FOR THE PITCHES TO BE DRAINED VIA AN INFILTRATION ONLY SYSTEM. THIS IS TO BE CONFIRMED ONCE ADDITIONAL INFILTRATION TESTING CAN BE CARRIED OUT UNDER THE FOOTPRINT OF THE EXISTING LEISURE CENTRE BUILDING.

| Rev: | Description: | Date: | By: | Chkd: |
|---|---|---|---|---|
| P03 | STAGE 4 | 08.12.23 | SA | PW |
| P02 | ISSUED FOR PLANNING | 07.09.23 | HW | PW |
| P01 | STAGE 3 | 10.08.23 | SA | PW |

renaissance
Renaissance Associates Ltd
Carvers Warehouse
77 Dale Street
Manchester
M1 2HG

Project:
STAR RADCLIFFE ACADEMY, BURY

Drawing Title:
*PROPOSED DRAINED AREAS PLAN*

Status:
STAGE 4

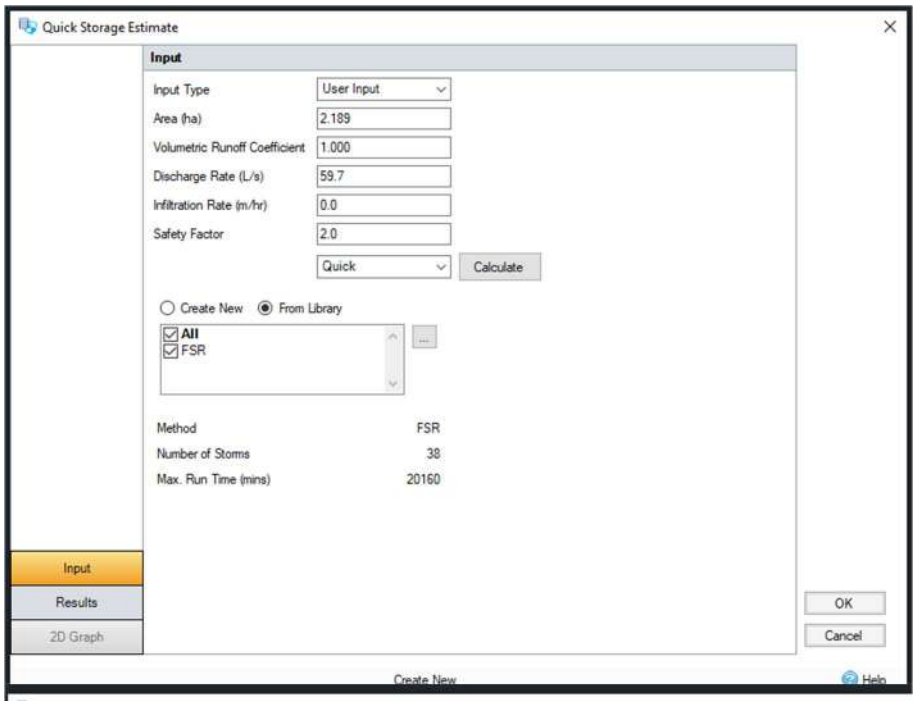
| Size: | Date: | Drawn by: | Designed by: | Checked by: |
|---|---|---|---|---|
| A1 | AUG'23 | SA | SA | PW |

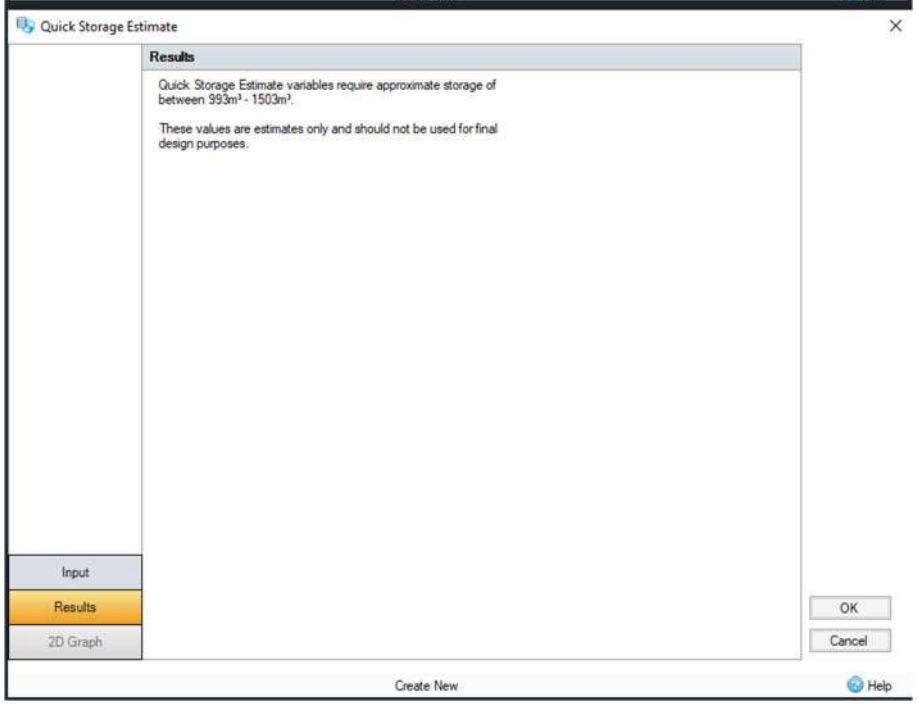
Scale: 1:500 | Project No: 2303-02

Project - Originator - Volume - Level - Type - Role - Number: FS1013-REN-EX-00-D-C-5201 | Revision: P03

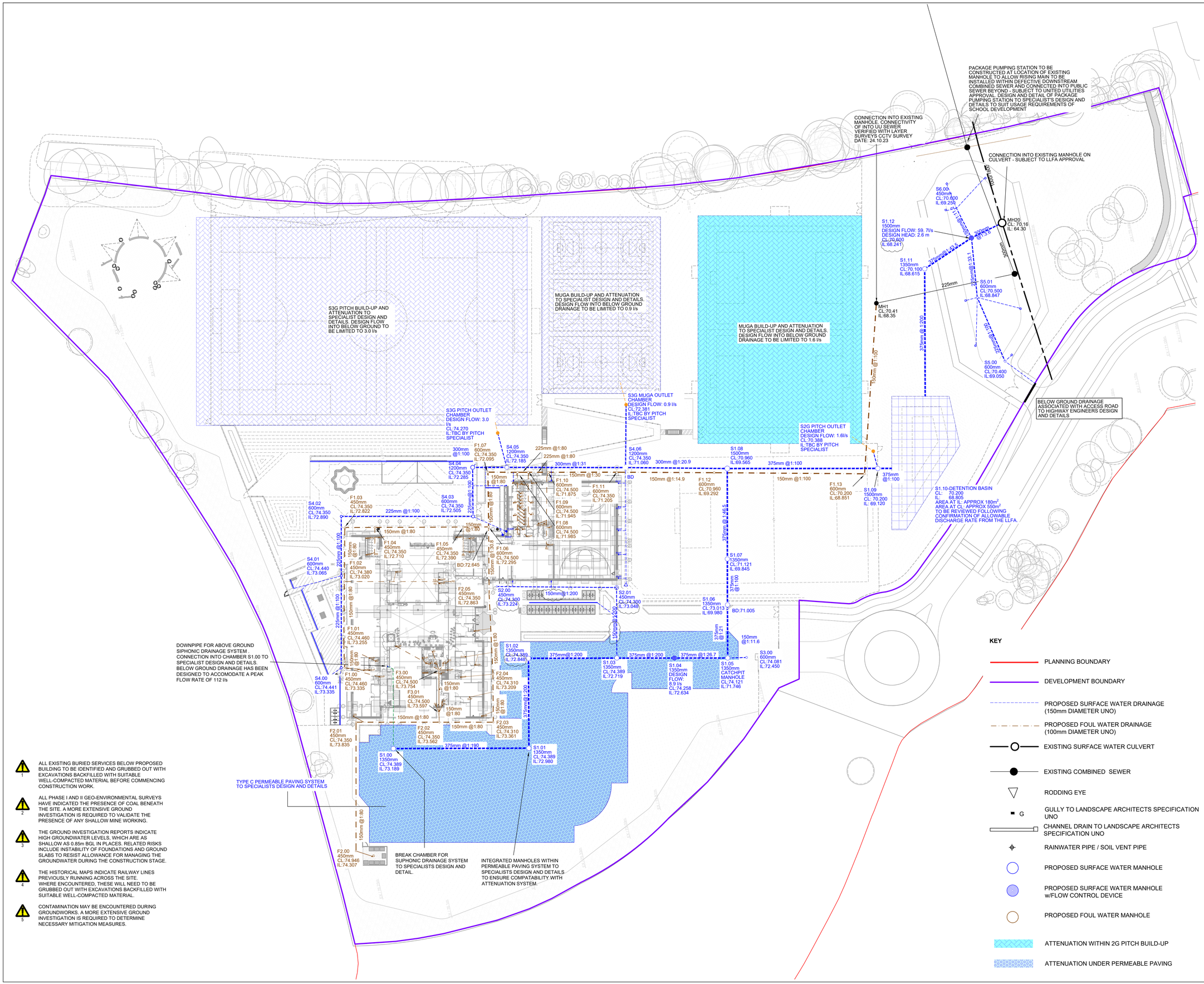
This drawing has been prepared for the sole benefit, use and information of the client for the purpose set out in the instructions commissioning it. The liability of **renaissance** in the respect of the information contained in this drawing will not extend to any third party. This document should not be used in whole or part by any third parties without the express written permission of **renaissance**

**APPENDIX G**
**InfoDrainage Quick Storage Estimate**


Quick Storage Estimate
Input
Input Type
User Input
Area (ha)
2.189
Volumetric Runoff Coefficient
1.000
Discharge Rate (L/s)
59.7
Infiltration Rate (m/hr)
0.0
Safety Factor
2.0
Quick
Calculate
Create New
From Library
All
FSR
Method
FSR
Number of Storms
38
Max. Run Time (mins)
20160
Input
Results
2D Graph
OK
Cancel
Create New
Help


Quick Storage Estimate
Results
Quick Storage Estimate variables require approximate storage of between 993m³ - 1503m³.
These values are estimates only and should not be used for final design purposes.
Input
Results
2D Graph
OK
Cancel
Create New
Help

**APPENDIX H**
**Below Ground Drainage GA**




1. ALL EXISTING BURIED SERVICES BELOW PROPOSED BUILDING TO BE IDENTIFIED AND GRUBBED OUT WITH EXCAVATIONS BACKFILLED WITH SUITABLE WELL-COMPACTED MATERIAL BEFORE COMMENCING CONSTRUCTION WORK.

2. ALL PHASE I AND II GEO-ENVIRONMENTAL SURVEYS HAVE INDICATED THE PRESENCE OF COAL BENEATH THE SITE. A MORE EXTENSIVE GROUND INVESTIGATION IS REQUIRED TO VALIDATE THE PRESENCE OF ANY SHALLOW MINE WORKING.

3. THE GROUND INVESTIGATION REPORTS INDICATE HIGH GROUNDWATER LEVELS, WHICH ARE AS SHALLOW AS 0.85m BGL IN PLACES. RELATED RISKS INCLUDE INSTABILITY OF FOUNDATIONS AND GROUND SLABS TO RESIST ALLOWANCE FOR MANAGING THE GROUNDWATER DURING THE CONSTRUCTION STAGE.

4. THE HISTORICAL MAPS INDICATE RAILWAY LINES PREVIOUSLY RUNNING ACROSS THE SITE. WHERE ENCOUNTERED, THESE WILL NEED TO BE GRUBBED OUT WITH EXCAVATIONS BACKFILLED WITH SUITABLE WELL-COMPACTED MATERIAL.

5. CONTAMINATION MAY BE ENCOUNTERED DURING GROUNDWORKS. A MORE EXTENSIVE GROUND INVESTIGATION IS REQUIRED TO DETERMINE NECESSARY MITIGATION MEASURES.

**NOTES:**

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RENAISSANCE, ARCHITECTS, LANDSCAPE ARCHITECTS AND BUILDING SERVICES ENGINEERS DRAWINGS.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE BELOW GROUND DRAINAGE DETAILS SHOWN ON DRAWING SERIES C-5301 TO C-5304.
3. FOR ALL ABOVE GROUND DRAINAGE AND ASSOCIATED PUMPS REFER TO BUILDING SERVICES AND ARCHITECT'S DRAWINGS.
4. ALL BELOW GROUND DRAINAGE WORKS TO BE IN ACCORDANCE WITH RELEVANT BUILDING REGULATIONS AND SEWER SECTOR GUIDANCE APPENDIX C- DESIGN AND CONSTRUCTION GUIDANCE. IF DISCREPANCIES ARE NOTED BETWEEN SSG AND DRAWINGS THESE SHOULD BE BROUGHT TO THE ATTENTION OF RENAISSANCE FOR REVIEW.
5. RWPs, SVPs, SSs AND FLOOR GULLEYS ARE TO HAVE RODDABLE ACCESS POINTS ABOVE GROUND FLOOR TO BUILDING SERVICES DETAILS.
6. THE CONTRACTOR IS TO UNDERTAKE A FULL CCTV SURVEY AT COMPLETION OF THE PROJECT TO DEMONSTRATE THAT THE DRAINAGE IS CLEAN. ANY DEFECTS ARE TO BE CORRECTED BY THE CONTRACTOR PRIOR TO HANDOVER OF THE SYSTEM TO THE CLIENT.
7. THE CONTRACTOR IS TO KEEP A RECORD SET OF THE AS INSTALLED DRAINAGE ON SITE AND PROVIDE THIS TO RENAISSANCE UPON COMPLETION OF THE WORKS TO ALLOW FOR PRODUCTION OF A 'FINAL CONSTRUCTION' ISSUE DRAWING.
8. DURING THE WORKS ALTERATIONS TO THE DRAINAGE LAYOUT ARE TO BE MARKED UP BY THE CONTRACTOR AND AGREED WITH RENAISSANCE IN WRITING.
9. THE CHAMBER SIZE OF PCC MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTIONS AND BENDS.
10. MANHOLE COVERS ARE TO BE IN ACCORDANCE WITH BS EN 124 FOR THE RATING INDICATED IN THE MANHOLE SCHEDULE. THE CONTRACTOR IS TO SUBMIT DETAILS FOR THE PROPOSED MANHOLE COVERS TO THE ENGINEER AND LANDSCAPE ARCHITECT FOR REVIEW PRIOR TO INSTALLATION.
11. ALL INTERNAL COVERS TO BE RECESSED AND TRIPLE SEALED
12. COVER SLABS MUST CARRY THE BSI KITEMARK. WHERE THE CLEAR OPENING OF THE KITEMARKED PRODUCT IS DIFFERENT TO THAT OF THE COVER AND FRAME, A LOAD BEARING REDUCING SLAB SHOULD BE FITTED ABOVE THE COVER SLAB TO BRING THE SIZE DOWN TO REQUIRED SIZE.
13. ALL SEWERS TO BE BSI KITEMARK (CERTIFIED TO WIS 4-35-01)
14. ALL CONCRETE PIPES TO BE TO ES EN 1916 CLASS 120 (54kN/m).
15. BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENTS OF THE WATER INDUSTRY SPECIFICATION 4-08092 (TABLE A2).
16. IF PLASTIC PIPES ARE TO BE USED THEN THE FOLLOWING MUST APPLY:
    A. BSI KITEMARK (CERTIFIED TO BS EN 13476-1 AND WIS 4-35-01)
    B. PIPES LESS THAN OR EQUAL TO 500mm DIA
    C. BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENTS OF THE WATER INDUSTRY SPECIFICATION 4-08092 (TABLE A2)
17. THE MINIMUM CRUSHING STRENGTH FOR CLAY PIPES SHOULD BE AS FOLLOWS: 100mm DIA. 40kN/m, 150mm DIA. 40kN/m, 225mm DIA. 45kN/m AND 300mm DIA. 72kN/m.
18. THE MINIMUM CRUSHING STRENGTH FOR CONCRETE PIPES SHOULD BE - (CLASS 120 TO EN 1916/BS8911-1 2002). PLASTIC PIPES SHOULD CONFORM TO WIS 4-35-01 AND BS EN13476.
19. SULPHATE RESISTANT CEMENT (C20-DC3) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDING THAT SUCH PRECAUTIONS ARE NOT NECESSARY.
20. SEWER PIPES TO BE LAID IN MAXIMUM 3 METER LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER PIPES, AND THIS IS AGREED BY THE CONTRACTOR WITH THE PIPE MANUFACTURER.
21. ALL FOUL AND SURFACE WATER BELOW GROUND SYTEMS ARE TO BE VENTED WITHIN THE ABOVE GROUND DRAINAGE TO THE BUILDING SERVICES ENGINEERS DETAILS.

**EXTERNAL WORKS SETTING OUT**

FOR PROPOSED SITE LEVELS AND CHANNEL / GULLY LOCATIONS, REFER TO LANDSCAPE ARCHITECT'S DRAWINGS.

**SVP & RWP SETTING OUT**

SVP AND RWP LOCATIONS ARE INDICATIVE. FOR DETAILED SETTING OUT REFER TO ARCHITECTS/ BUILDING SERVICE ENGINEERS DRAWINGS.

ALL CONNECTIONS BETWEEN ABOVE GROUND DRAINAGE AND BELOW GROUND DRAINAGE TO BE SIZED TO SUIT ABOVE GROUND DRAINAGE.

**METROLINK LINE**

ALL DRAINAGE AND SURFACE FINISHES ADJACENT TO THE METROLINK LINE TO THE EAST OF THE SITE ARE TO FALL AWAY FROM THE EMBANKMENT TO PREVENT ANY IMPACTS ON ITS STABILITY.

**PITCH DRAINAGE**

THE PITCH AREAS HAVE BEEN INCLUDED WITHIN THE PROPOSED DRAINAGE DESIGN ALLOWING FOR THE FLOW RATES ADVISED BY THE SUDS SPECIALIST. THERE IS POTENTIAL FOR THE PITCHES TO BE DRAINED V/A AN INFILTRATION ONLY SYSTEM. THIS IS TO BE CONFIRMED ONCE ADDITIONAL INFILTRATION TESTING CAN BE CARRIED OUT UNDER THE FOOTPRINT OF THE EXISTING LEISURE CENTRE BUILDING.

| Rev: | Description: | Date: | By: | Chkd: |
|---|---|---|---|---|
| P04 | MANHOLE INVERT LEVELS UPDATED | 13.12.23 | SA | PW |
| P03 | STAGE 4 ISSUE | 08.12.23 | SA | PW |
| P02 | COMMENTS INCORPORATED | 08.09.23 | HW | PW |
| P01 | STAGE 3 ISSUE | 11.08.23 | SA | PW |

renaissance
Renaissance Associates Ltd
Carvers Warehouse
77 Dale Street
Manchester
M1 2HG

Project:
STAR RADCLIFFE ACADEMY, BURY

Drawing Title:
*BELOW GROUND DRAINAGE PLAN*

Status:
STAGE 4

| Size: | Date: | Drawn by: | Designed by: | Checked by: |
|---|---|---|---|---|
| A1 | DEC 23 | SA | SA | PW |

Scale: 1:500 | Project No: 2303-02

Project – Originator – Volume – Level – Type – Role – Number: FS1013-REN-EX-00-D-C-5210 | Revision: P04

This drawing has been prepared for the sole benefit, use and information of the client for the purpose set out in the instructions commissioning it. The liability of **renaissance** in the respect of the information contained in this drawing will not extend to any third party. This document should not be used in whole or part by any third parties without the express written permission of **renaissance**

**APPENDIX J**
**Proposed Surface Water Micro Drainage Calculations**

## STORM SEWER DESIGN by the Modified Rational Method

### Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

| | | | |
|---|---|---|---|
| Return Period (years) | 100 | PIMP (%) | 100 |
| M5-60 (mm) | 18.000 | Add Flow / Climate Change (%) | 0 |
| Ratio R | 0.360 | Minimum Backdrop Height (m) | 0.200 |
| Maximum Rainfall (mm/hr) | 50 | Maximum Backdrop Height (m) | 1.500 |
| Maximum Time of Concentration (mins) | 30 | Min Design Depth for Optimisation (m) | 1.200 |
| Foul Sewage (l/s/ha) | 0.000 | Min Vel for Auto Design only (m/s) | 1.00 |
| Volumetric Runoff Coeff. | 0.750 | Min Slope for Optimisation (1:X) | 500 |

Designed with Level Soffits

### Time Area Diagram for Storm

| Time (mins) | Area (ha) | Time (mins) | Area (ha) |
|---|---|---|---|
| 0-4 | 0.238 | 4-8 | 0.117 |

Total Area Contributing (ha) = 0.355

Total Pipe Volume (m³) = 46.695

### Network Design Table for Storm

# - Indicates pipe length does not match coordinates

| PN | Length (m) | Fall (m) | Slope (1:X) | I.Area (ha) | T.E. (mins) | Base Flow (l/s) | k (mm) | HYD SECT | DIA (mm) | Section Type | Auto Design |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S1.000 | 39.722 | 0.209 | 190.1 | 0.000 | 5.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| S1.001 | 26.346 | 0.132 | 199.6 | 0.000 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| S1.002 | 25.923 | 0.130 | 199.4 | 0.000 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| S2.000 | 35.107 | 0.176 | 200.0 | 0.000 | 5.00 | 0.0 | 0.600 | o | 150 | Pipe/Conduit | |

### Network Results Table

| PN | Rain (mm/hr) | T.C. (mins) | US/IL (m) | Σ I.Area (ha) | Σ Base Flow (l/s) | Foul (l/s) | Add Flow (l/s) | Vel (m/s) | Cap (l/s) | Flow (l/s) |
|---|---|---|---|---|---|---|---|---|---|---|
| S1.000 | 50.00 | 5.51 | 73.189 | 0.000 | 0.0 | 0.0 | 0.0 | 1.31 | 144.8 | 0.0 |
| S1.001 | 50.00 | 5.85 | 72.980 | 0.000 | 0.0 | 0.0 | 0.0 | 1.28 | 141.2 | 0.0 |
| S1.002 | 50.00 | 6.19 | 72.848 | 0.000 | 0.0 | 0.0 | 0.0 | 1.28 | 141.3 | 0.0 |
| S2.000 | 50.00 | 5.83 | 73.224 | 0.000 | 0.0 | 0.0 | 0.0 | 0.71 | 12.5 | 0.0 |

©1982-2020 Innovyze

## Network Design Table for Storm

| PN | Length (m) | Fall (m) | Slope (1:X) | I.Area (ha) | T.E. (mins) | Base Flow (l/s) | k (mm) | HYD SECT | DIA (mm) | Section Type | Auto Design |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S2.001 | 20.759 | 0.104 | 199.6 | 0.000 | 0.00 | 0.0 | 0.600 | o | 150 | Pipe/Conduit | |
| S1.003 | 16.752 | 0.084 | 199.4 | 0.000 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| S1.004 | 15.740 | 0.589 | 26.7 | 0.000 | 0.00 | 8.9 | 0.600 | o | 375 | Pipe/Conduit | |
| S3.000 | 5.510 | 0.479 | 11.5 | 0.000 | 5.00 | 0.0 | 0.600 | o | 150 | Pipe/Conduit | |
| S1.005 | 15.545 | 0.740 | 21.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| S1.006 | 13.518 | 0.135 | 100.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| S1.007 | 26.528 | 0.282 | 93.9 | 0.000 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| S4.000 | 26.925 | 0.269 | 100.0 | 0.016 | 5.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| S4.001 | 17.422 | 0.174 | 100.0 | 0.017 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| S4.002 | 38.691 | 0.386 | 100.1 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| S4.003 | 14.419 | 0.144 | 100.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| S4.004 | 10.068 | 0.101 | 100.0 | 0.164 | 0.00 | 0.0 | 0.600 | o | 300 | Pipe/Conduit | |
| S5.000 | 10.433 | 0.447 | 23.3 | 0.000 | 5.00 | 3.0 | 0.600 | o | 150 | Pipe/Conduit | |
| S4.005 | 34.806 | 1.123 | 31.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 300 | Pipe/Conduit | |
| S6.000 | 18.415 | 0.145 | 127.0 | 0.000 | 5.00 | 0.9 | 0.600 | o | 225 | Pipe/Conduit | |

## Network Results Table

| PN | Rain (mm/hr) | T.C. (mins) | US/IL (m) | Σ I.Area (ha) | Σ Base Flow (l/s) | Foul (l/s) | Add Flow (l/s) | Vel (m/s) | Cap (l/s) | Flow (l/s) |
|---|---|---|---|---|---|---|---|---|---|---|
| S2.001 | 50.00 | 6.32 | 73.048 | 0.000 | 0.0 | 0.0 | 0.0 | 0.71 | 12.5 | 0.0 |
| S1.003 | 50.00 | 6.53 | 72.718 | 0.000 | 0.0 | 0.0 | 0.0 | 1.28 | 141.3 | 0.0 |
| S1.004 | 50.00 | 6.61 | 72.634 | 0.000 | 8.9 | 0.0 | 0.0 | 3.52 | 388.5 | 8.9 |
| S3.000 | 50.00 | 5.03 | 72.450 | 0.000 | 0.0 | 0.0 | 0.0 | 2.99 | 52.8 | 0.0 |
| S1.005 | 50.00 | 6.67 | 71.746 | 0.000 | 8.9 | 0.0 | 0.0 | 3.97 | 438.4 | 8.9 |
| S1.006 | 50.00 | 6.80 | 69.981 | 0.000 | 8.9 | 0.0 | 0.0 | 1.81 | 200.1 | 8.9 |
| S1.007 | 50.00 | 7.04 | 69.846 | 0.000 | 8.9 | 0.0 | 0.0 | 1.87 | 206.5 | 8.9 |
| S4.000 | 50.00 | 5.34 | 73.335 | 0.016 | 0.0 | 0.0 | 0.0 | 1.31 | 52.0 | 2.2 |
| S4.001 | 50.00 | 5.57 | 73.066 | 0.033 | 0.0 | 0.0 | 0.0 | 1.31 | 52.0 | 4.5 |
| S4.002 | 50.00 | 6.06 | 72.892 | 0.033 | 0.0 | 0.0 | 0.0 | 1.31 | 52.0 | 4.5 |
| S4.003 | 50.00 | 6.24 | 72.505 | 0.033 | 0.0 | 0.0 | 0.0 | 1.31 | 52.0 | 4.5 |
| S4.004 | 50.00 | 6.35 | 72.286 | 0.197 | 0.0 | 0.0 | 0.0 | 1.57 | 111.1 | 26.7 |
| S5.000 | 50.00 | 5.08 | 72.800 | 0.000 | 3.0 | 0.0 | 0.0 | 2.09 | 37.0 | 3.0 |
| S4.005 | 50.00 | 6.55 | 72.185 | 0.197 | 3.0 | 0.0 | 0.0 | 2.83 | 200.3 | 29.7 |
| S6.000 | 50.00 | 5.26 | 71.300 | 0.000 | 0.9 | 0.0 | 0.0 | 1.16 | 46.1 | 0.9 |

©1982-2020 Innovyze

## Network Design Table for Storm

| PN | Length (m) | Fall (m) | Slope (1:X) | I.Area (ha) | T.E. (mins) | Base Flow (l/s) | k (mm) | HYD SECT | DIA (mm) | Section Type | Auto Design |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S4.006 | 29.780 | 1.424 | 20.9 | 0.055 | 0.00 | 0.0 | 0.600 | o | 300 | Pipe/Conduit | |
| S1.008 | 44.158 | 0.442 | 100.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| S1.009 | 16.130 | 0.319 | 50.5 | 0.000 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| S7.000 | 15.803 | 0.105 | 150.0 | 0.000 | 5.00 | 1.6 | 0.600 | o | 150 | Pipe/Conduit | |
| S1.010 | 37.351# | 0.187 | 200.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| S1.011 | 16.322 | 0.375 | 43.5 | 0.000 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| S8.000 | 20.336 | 0.203 | 100.0 | 0.028 | 5.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| S8.001 | 17.578 | 0.531 | 33.1 | 0.063 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| S9.000 | 9.636 | 0.859 | 11.2 | 0.012 | 5.00 | 0.0 | 0.600 | o | 150 | Pipe/Conduit | |
| S1.012 | 10.044 | 2.760 | 3.6 | 0.000 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |

## Network Results Table

| PN | Rain (mm/hr) | T.C. (mins) | US/IL (m) | Σ I.Area (ha) | Σ Base Flow (l/s) | Foul (l/s) | Add Flow (l/s) | Vel (m/s) | Cap (l/s) | Flow (l/s) |
|---|---|---|---|---|---|---|---|---|---|---|
| S4.006 | 50.00 | 6.70 | 71.062 | 0.252 | 3.9 | 0.0 | 0.0 | 3.45 | 244.1 | 38.0 |
| S1.008 | 50.00 | 7.44 | 69.563 | 0.252 | 12.8 | 0.0 | 0.0 | 1.81 | 200.1 | 46.9 |
| S1.009 | 50.00 | 7.55 | 69.122 | 0.252 | 12.8 | 0.0 | 0.0 | 2.55 | 282.1 | 46.9 |
| S7.000 | 50.00 | 5.32 | 69.150 | 0.000 | 1.6 | 0.0 | 0.0 | 0.82 | 14.5 | 1.6 |
| S1.010 | 50.00 | 8.03 | 68.803 | 0.252 | 14.4 | 0.0 | 0.0 | 1.28 | 141.1 | 48.5 |
| S1.011 | 50.00 | 8.13 | 68.616 | 0.252 | 14.4 | 0.0 | 0.0 | 2.75 | 304.2 | 48.5 |
| S8.000 | 50.00 | 5.26 | 69.050 | 0.028 | 0.0 | 0.0 | 0.0 | 1.31 | 52.0 | 3.8 |
| S8.001 | 50.00 | 5.39 | 68.847 | 0.091 | 0.0 | 0.0 | 0.0 | 2.28 | 90.7 | 12.3 |
| S9.000 | 50.00 | 5.05 | 69.250 | 0.012 | 0.0 | 0.0 | 0.0 | 3.03 | 53.5 | 1.6 |
| S1.012 | 50.00 | 8.15 | 68.166 | 0.355 | 14.4 | 0.0 | 0.0 | 9.55 | 1055.1 | 62.5 |

©1982-2020 Innovyze

## Area Summary for Storm

| Pipe Number | PIMP Type | PIMP Name | PIMP (%) | Gross Area (ha) | Imp. Area (ha) | Pipe Total (ha) |
|---|---|---|---|---|---|---|
| 1.000 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 1.001 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 1.002 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 2.000 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 2.001 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 1.003 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 1.004 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 3.000 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 1.005 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 1.006 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 1.007 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 4.000 | - | - | 100 | 0.016 | 0.016 | 0.016 |
| 4.001 | - | - | 100 | 0.017 | 0.017 | 0.017 |
| 4.002 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 4.003 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 4.004 | - | - | 100 | 0.164 | 0.164 | 0.164 |
| 5.000 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 4.005 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 6.000 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 4.006 | - | - | 100 | 0.055 | 0.055 | 0.055 |
| 1.008 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 1.009 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 7.000 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 1.010 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 1.011 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 8.000 | - | - | 100 | 0.028 | 0.028 | 0.028 |
| 8.001 | - | - | 100 | 0.063 | 0.063 | 0.063 |
| 9.000 | - | - | 100 | 0.012 | 0.012 | 0.012 |
| 1.012 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| | | | | Total | Total | Total |
| | | | | 0.355 | 0.355 | 0.355 |

## Free Flowing Outfall Details for Storm

| Outfall Pipe Number | Outfall Name | C. Level (m) | I. Level (m) | Min I. Level (m) | D,L (mm) | W (mm) |
|---|---|---|---|---|---|---|
| S1.012 | S | 70.160 | 65.406 | 0.000 | 0 | 0 |

©1982-2020 Innovyze

## Simulation Criteria for Storm

| | | | |
|---|---|---|---|
| Volumetric Runoff Coeff | 1.000 | Additional Flow - % of Total Flow | 0.000 |
| Areal Reduction Factor | 1.000 | MADD Factor * 10m³/ha Storage | 2.000 |
| Hot Start (mins) | 0 | Inlet Coeffiecient | 0.800 |
| Hot Start Level (mm) | 0 | Flow per Person per Day (l/per/day) | 0.000 |
| Manhole Headloss Coeff (Global) | 0.500 | Run Time (mins) | 60 |
| Foul Sewage per hectare (l/s) | 0.000 | Output Interval (mins) | 1 |

| | | | |
|---|---|---|---|
| Number of Input Hydrographs | 0 | Number of Storage Structures | 1 |
| Number of Online Controls | 1 | Number of Time/Area Diagrams | 0 |
| Number of Offline Controls | 0 | Number of Real Time Controls | 0 |

## Synthetic Rainfall Details

| | | | |
|---|---|---|---|
| Rainfall Model | FSR | Profile Type | Summer |
| Return Period (years) | 100 | Cv (Summer) | 1.000 |
| Region | England and Wales | Cv (Winter) | 0.840 |
| M5-60 (mm) | 18.000 | Storm Duration (mins) | 30 |
| Ratio R | 0.360 | | |

©1982-2020 Innovyze

## Online Controls for Storm

### Hydro-Brake® Optimum Manhole: S1.12, DS/PN: S1.012, Volume (m³): 6.0

| | |
|---|---|
| Unit Reference | MD-SCL-0277-5970-2600-5970 |
| Design Head (m) | 2.600 |
| Design Flow (l/s) | 59.7 |
| Flush-Flo™ | Calculated |
| Objective | Minimise blockage risk |
| Application | Surface |
| Sump Available | Yes |
| Diameter (mm) | 277 |
| Invert Level (m) | 68.166 |
| Minimum Outlet Pipe Diameter (mm) | 300 |
| Suggested Manhole Diameter (mm) | 2100 |

| Control Points | Head (m) | Flow (l/s) |
|---|---|---|
| Design Point (Calculated) | 2.600 | 59.7 |
| Flush-Flo™ | 0.561 | 59.6 |
| Kick-Flo® | 1.406 | 44.4 |
| Mean Flow over Head Range | - | 50.3 |

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

| Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) |
|---|---|---|---|---|---|---|---|
| 0.100 | 9.6 | 1.200 | 52.0 | 3.000 | 63.9 | 7.000 | 96.4 |
| 0.200 | 31.5 | 1.400 | 44.8 | 3.500 | 68.9 | 7.500 | 99.7 |
| 0.300 | 51.0 | 1.600 | 47.3 | 4.000 | 73.5 | 8.000 | 102.8 |
| 0.400 | 58.3 | 1.800 | 50.0 | 4.500 | 77.8 | 8.500 | 105.9 |
| 0.500 | 59.5 | 2.000 | 52.6 | 5.000 | 81.9 | 9.000 | 108.9 |
| 0.600 | 59.6 | 2.200 | 55.1 | 5.500 | 85.7 | 9.500 | 111.8 |
| 0.800 | 58.1 | 2.400 | 57.4 | 6.000 | 89.4 | | |
| 1.000 | 55.7 | 2.600 | 59.7 | 6.500 | 93.0 | | |

©1982-2020 Innovyze

## Storage Structures for Storm

### Tank or Pond Manhole: S1.10, DS/PN: S1.010

Invert Level (m) 68.820

| Depth (m) | Area (m²) | Depth (m) | Area (m²) |
|---|---|---|---|
| 0.000 | 180.0 | 1.200 | 552.0 |

©1982-2020 Innovyze

## 1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

### Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 1
Number of Online Controls 1 Number of Time/Area Diagrams 0
Number of Offline Controls 0 Number of Real Time Controls 0

### Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.360
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.000 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 300.0
Analysis Timestep 2.5 Second Increment (Extended)
DTS Status OFF
DVD Status ON
Inertia Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360
Return Period(s) (years) 1, 2, 30, 100
Climate Change (%) 0, 0, 0, 45

| PN | US/MH Name | Storm | Return Period | Climate Change | First (X) Surcharge | First (Y) Flood | First (Z) Overflow | Overflow Act. |
|---|---|---|---|---|---|---|---|---|
| S1.000 | S1.00 | 15 Summer | 1 | +0% | | | | |
| S1.001 | S1.01 | 15 Summer | 1 | +0% | | | | |
| S1.002 | S1.02 | 15 Summer | 1 | +0% | | | | |
| S2.000 | S2.00 | 15 Summer | 1 | +0% | | | | |
| S2.001 | S2.01 | 15 Summer | 1 | +0% | | | | |
| S1.003 | S1.03 | 15 Summer | 1 | +0% | | | | |
| S1.004 | S1.04 | 15 Summer | 1 | +0% | | | | |
| S3.000 | S3.00 | 15 Summer | 1 | +0% | | | | |
| S1.005 | S1.05 | 15 Summer | 1 | +0% | | | | |
| S1.006 | S1.06 | 15 Summer | 1 | +0% | | | | |
| S1.007 | S1.07 | 15 Summer | 1 | +0% | | | | |
| S4.000 | S4.00 | 15 Summer | 1 | +0% | | | | |
| S4.001 | S4.01 | 15 Summer | 1 | +0% | | | | |
| S4.002 | S4.02 | 15 Summer | 1 | +0% | | | | |
| S4.003 | S4.03 | 15 Summer | 1 | +0% | 100/15 Summer | | | |
| S4.004 | S4.04 | 15 Summer | 1 | +0% | 100/15 Summer | | | |
| S5.000 | SS3G PITCH | 15 Summer | 1 | +0% | | | | |
| S4.005 | S4.05 | 15 Summer | 1 | +0% | | | | |
| S6.000 | S3G MUGA | 15 Summer | 1 | +0% | | | | |

©1982-2020 Innovyze

## 1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

| PN | US/MH Name | Water Level (m) | Surcharged Depth (m) | Flooded Volume (m³) | Flow / Cap. | Overflow (l/s) | Half Drain Time (mins) | Pipe Flow (l/s) | Status |
|---|---|---|---|---|---|---|---|---|---|
| S1.000 | S1.00 | 73.189 | -0.375 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.001 | S1.01 | 72.980 | -0.375 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.002 | S1.02 | 72.848 | -0.375 | 0.000 | 0.00 | | | 0.0 | OK |
| S2.000 | S2.00 | 73.224 | -0.150 | 0.000 | 0.00 | | | 0.0 | OK |
| S2.001 | S2.01 | 73.048 | -0.150 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.003 | S1.03 | 72.718 | -0.375 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.004 | S1.04 | 72.676 | -0.333 | 0.000 | 0.03 | | | 8.9 | OK |
| S3.000 | S3.00 | 72.450 | -0.150 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.005 | S1.05 | 71.788 | -0.333 | 0.000 | 0.03 | | | 9.0 | OK |
| S1.006 | S1.06 | 70.044 | -0.312 | 0.000 | 0.06 | | | 8.9 | OK |
| S1.007 | S1.07 | 69.900 | -0.321 | 0.000 | 0.05 | | | 9.0 | OK |
| S4.000 | S4.00 | 73.368 | -0.192 | 0.000 | 0.05 | | | 2.4 | OK |
| S4.001 | S4.01 | 73.113 | -0.177 | 0.000 | 0.10 | | | 4.6 | OK |
| S4.002 | S4.02 | 72.938 | -0.179 | 0.000 | 0.09 | | | 4.6 | OK |
| S4.003 | S4.03 | 72.552 | -0.178 | 0.000 | 0.10 | | | 4.6 | OK |
| S4.004 | S4.04 | 72.403 | -0.182 | 0.000 | 0.32 | | | 25.1 | OK |
| S5.000 | SS3G PITCH | 72.830 | -0.120 | 0.000 | 0.09 | | | 3.0 | OK |
| S4.005 | S4.05 | 72.264 | -0.221 | 0.000 | 0.15 | | | 28.3 | OK |
| S6.000 | S3G MUGA | 71.323 | -0.202 | 0.000 | 0.02 | | | 0.9 | OK |

| PN | US/MH Name | Level Exceeded |
|---|---|---|
| S1.000 | S1.00 | |
| S1.001 | S1.01 | |
| S1.002 | S1.02 | |
| S2.000 | S2.00 | |
| S2.001 | S2.01 | |
| S1.003 | S1.03 | |
| S1.004 | S1.04 | |
| S3.000 | S3.00 | |
| S1.005 | S1.05 | |
| S1.006 | S1.06 | |
| S1.007 | S1.07 | |
| S4.000 | S4.00 | |
| S4.001 | S4.01 | |
| S4.002 | S4.02 | |
| S4.003 | S4.03 | |
| S4.004 | S4.04 | |
| S5.000 | SS3G PITCH | |
| S4.005 | S4.05 | |
| S6.000 | S3G MUGA | |

©1982-2020 Innovyze

## 1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

| PN | US/MH Name | Storm | Return Period | Climate Change | First (X) Surcharge | First (Y) Flood | First (Z) Overflow | Overflow Act. |
|---|---|---|---|---|---|---|---|---|
| S4.006 | S4.06 | 15 Summer | 1 | +0% | | | | |
| S1.008 | S1.08 | 15 Summer | 1 | +0% | 100/15 Summer | | | |
| S1.009 | S1.09 | 15 Summer | 1 | +0% | | | | |
| S7.000 | S2G PITCH | 15 Summer | 1 | +0% | | | | |
| S1.010 | S1.10 | 60 Summer | 1 | +0% | 100/30 Summer | | | |
| S1.011 | S1.11 | 60 Summer | 1 | +0% | 100/15 Summer | | | |
| S8.000 | S5.00 | 15 Summer | 1 | +0% | 100/15 Summer | | | |
| S8.001 | S5.01 | 15 Summer | 1 | +0% | 100/15 Summer | | | |
| S9.000 | S6.00 | 15 Summer | 1 | +0% | | | | |
| S1.012 | S1.12 | 60 Summer | 1 | +0% | 30/15 Summer | | | |

| PN | US/MH Name | Water Level (m) | Surcharged Depth (m) | Flooded Volume (m³) | Flow / Cap. | Overflow (l/s) | Half Drain Time (mins) | Pipe Flow (l/s) | Status |
|---|---|---|---|---|---|---|---|---|---|
| S4.006 | S4.06 | 71.144 | -0.218 | 0.000 | 0.16 | | | 36.2 | OK |
| S1.008 | S1.08 | 69.689 | -0.249 | 0.000 | 0.24 | | | 44.8 | OK |
| S1.009 | S1.09 | 69.236 | -0.261 | 0.000 | 0.20 | | | 44.6 | OK |
| S7.000 | S2G PITCH | 69.184 | -0.116 | 0.000 | 0.12 | | | 1.6 | OK |
| S1.010 | S1.10 | 68.928 | -0.250 | 0.000 | 0.25 | | | 31.3 | OK |
| S1.011 | S1.11 | 68.705 | -0.286 | 0.000 | 0.13 | | | 31.3 | OK |
| S8.000 | S5.00 | 69.096 | -0.179 | 0.000 | 0.09 | | | 4.3 | OK |
| S8.001 | S5.01 | 68.905 | -0.166 | 0.000 | 0.15 | | | 12.4 | OK |
| S9.000 | S6.00 | 69.269 | -0.131 | 0.000 | 0.04 | | | 1.8 | OK |
| S1.012 | S1.12 | 68.391 | -0.150 | 0.000 | 0.06 | | | 37.3 | OK |

| PN | US/MH Name | Level Exceeded |
|---|---|---|
| S4.006 | S4.06 | |
| S1.008 | S1.08 | |
| S1.009 | S1.09 | |
| S7.000 | S2G PITCH | |
| S1.010 | S1.10 | |
| S1.011 | S1.11 | |
| S8.000 | S5.00 | |
| S8.001 | S5.01 | |
| S9.000 | S6.00 | |
| S1.012 | S1.12 | |

©1982-2020 Innovyze

## 2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

### Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 1
Number of Online Controls 1 Number of Time/Area Diagrams 0
Number of Offline Controls 0 Number of Real Time Controls 0

### Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.360
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.000 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 300.0
Analysis Timestep 2.5 Second Increment (Extended)
DTS Status OFF
DVD Status ON
Inertia Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360
Return Period(s) (years) 1, 2, 30, 100
Climate Change (%) 0, 0, 0, 45

| PN | US/MH Name | Storm | Return Period | Climate Change | First (X) Surcharge | First (Y) Flood | First (Z) Overflow | Overflow Act. |
|---|---|---|---|---|---|---|---|---|
| S1.000 | S1.00 | 15 Summer | 2 | +0% | | | | |
| S1.001 | S1.01 | 15 Summer | 2 | +0% | | | | |
| S1.002 | S1.02 | 15 Summer | 2 | +0% | | | | |
| S2.000 | S2.00 | 15 Summer | 2 | +0% | | | | |
| S2.001 | S2.01 | 15 Summer | 2 | +0% | | | | |
| S1.003 | S1.03 | 15 Summer | 2 | +0% | | | | |
| S1.004 | S1.04 | 15 Summer | 2 | +0% | | | | |
| S3.000 | S3.00 | 15 Summer | 2 | +0% | | | | |
| S1.005 | S1.05 | 15 Summer | 2 | +0% | | | | |
| S1.006 | S1.06 | 15 Summer | 2 | +0% | | | | |
| S1.007 | S1.07 | 15 Summer | 2 | +0% | | | | |
| S4.000 | S4.00 | 15 Summer | 2 | +0% | | | | |
| S4.001 | S4.01 | 15 Summer | 2 | +0% | | | | |
| S4.002 | S4.02 | 15 Summer | 2 | +0% | | | | |
| S4.003 | S4.03 | 15 Summer | 2 | +0% | 100/15 Summer | | | |
| S4.004 | S4.04 | 15 Summer | 2 | +0% | 100/15 Summer | | | |
| S5.000 | SS3G PITCH | 15 Summer | 2 | +0% | | | | |
| S4.005 | S4.05 | 15 Summer | 2 | +0% | | | | |
| S6.000 | S3G MUGA | 15 Summer | 2 | +0% | | | | |

©1982-2020 Innovyze

## 2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

| PN | US/MH Name | Water Level (m) | Surcharged Depth (m) | Flooded Volume (m³) | Flow / Cap. | Overflow (l/s) | Half Drain Time (mins) | Pipe Flow (l/s) | Status |
|---|---|---|---|---|---|---|---|---|---|
| S1.000 | S1.00 | 73.189 | -0.375 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.001 | S1.01 | 72.980 | -0.375 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.002 | S1.02 | 72.848 | -0.375 | 0.000 | 0.00 | | | 0.0 | OK |
| S2.000 | S2.00 | 73.224 | -0.150 | 0.000 | 0.00 | | | 0.0 | OK |
| S2.001 | S2.01 | 73.048 | -0.150 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.003 | S1.03 | 72.718 | -0.375 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.004 | S1.04 | 72.676 | -0.333 | 0.000 | 0.03 | | | 8.9 | OK |
| S3.000 | S3.00 | 72.450 | -0.150 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.005 | S1.05 | 71.788 | -0.333 | 0.000 | 0.03 | | | 9.0 | OK |
| S1.006 | S1.06 | 70.044 | -0.312 | 0.000 | 0.06 | | | 8.9 | OK |
| S1.007 | S1.07 | 69.900 | -0.321 | 0.000 | 0.05 | | | 9.0 | OK |
| S4.000 | S4.00 | 73.373 | -0.187 | 0.000 | 0.07 | | | 3.1 | OK |
| S4.001 | S4.01 | 73.120 | -0.171 | 0.000 | 0.13 | | | 5.9 | OK |
| S4.002 | S4.02 | 72.944 | -0.173 | 0.000 | 0.12 | | | 5.9 | OK |
| S4.003 | S4.03 | 72.559 | -0.171 | 0.000 | 0.13 | | | 5.9 | OK |
| S4.004 | S4.04 | 72.422 | -0.164 | 0.000 | 0.41 | | | 32.7 | OK |
| S5.000 | SS3G PITCH | 72.830 | -0.120 | 0.000 | 0.09 | | | 3.0 | OK |
| S4.005 | S4.05 | 72.276 | -0.210 | 0.000 | 0.19 | | | 35.8 | OK |
| S6.000 | S3G MUGA | 71.323 | -0.202 | 0.000 | 0.02 | | | 0.9 | OK |

| PN | US/MH Name | Level Exceeded |
|---|---|---|
| S1.000 | S1.00 | |
| S1.001 | S1.01 | |
| S1.002 | S1.02 | |
| S2.000 | S2.00 | |
| S2.001 | S2.01 | |
| S1.003 | S1.03 | |
| S1.004 | S1.04 | |
| S3.000 | S3.00 | |
| S1.005 | S1.05 | |
| S1.006 | S1.06 | |
| S1.007 | S1.07 | |
| S4.000 | S4.00 | |
| S4.001 | S4.01 | |
| S4.002 | S4.02 | |
| S4.003 | S4.03 | |
| S4.004 | S4.04 | |
| S5.000 | SS3G PITCH | |
| S4.005 | S4.05 | |
| S6.000 | S3G MUGA | |

©1982-2020 Innovyze

## 2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

| PN | US/MH Name | Storm | Return Period | Climate Change | First (X) Surcharge | First (Y) Flood | First (Z) Overflow | Overflow Act. |
|---|---|---|---|---|---|---|---|---|
| S4.006 | S4.06 | 15 Summer | 2 | +0% | | | | |
| S1.008 | S1.08 | 15 Summer | 2 | +0% | 100/15 Summer | | | |
| S1.009 | S1.09 | 15 Summer | 2 | +0% | | | | |
| S7.000 | S2G PITCH | 15 Summer | 2 | +0% | | | | |
| S1.010 | S1.10 | 60 Summer | 2 | +0% | 100/30 Summer | | | |
| S1.011 | S1.11 | 60 Summer | 2 | +0% | 100/15 Summer | | | |
| S8.000 | S5.00 | 15 Summer | 2 | +0% | 100/15 Summer | | | |
| S8.001 | S5.01 | 15 Summer | 2 | +0% | 100/15 Summer | | | |
| S9.000 | S6.00 | 15 Summer | 2 | +0% | | | | |
| S1.012 | S1.12 | 60 Summer | 2 | +0% | 30/15 Summer | | | |

| PN | US/MH Name | Water Level (m) | Surcharged Depth (m) | Flooded Volume (m³) | Flow / Cap. | Overflow (l/s) | Half Drain Time (mins) | Pipe Flow (l/s) | Status |
|---|---|---|---|---|---|---|---|---|---|
| S4.006 | S4.06 | 71.155 | -0.207 | 0.000 | 0.21 | | | 45.7 | OK |
| S1.008 | S1.08 | 69.703 | -0.235 | 0.000 | 0.30 | | | 54.3 | OK |
| S1.009 | S1.09 | 69.248 | -0.249 | 0.000 | 0.24 | | | 54.0 | OK |
| S7.000 | S2G PITCH | 69.184 | -0.116 | 0.000 | 0.12 | | | 1.6 | OK |
| S1.010 | S1.10 | 68.939 | -0.239 | 0.000 | 0.29 | | | 36.4 | OK |
| S1.011 | S1.11 | 68.713 | -0.278 | 0.000 | 0.15 | | | 36.4 | OK |
| S8.000 | S5.00 | 69.101 | -0.174 | 0.000 | 0.12 | | | 5.5 | OK |
| S8.001 | S5.01 | 68.915 | -0.157 | 0.000 | 0.20 | | | 16.1 | OK |
| S9.000 | S6.00 | 69.272 | -0.128 | 0.000 | 0.05 | | | 2.4 | OK |
| S1.012 | S1.12 | 68.426 | -0.115 | 0.000 | 0.07 | | | 44.2 | OK |

| PN | US/MH Name | Level Exceeded |
|---|---|---|
| S4.006 | S4.06 | |
| S1.008 | S1.08 | |
| S1.009 | S1.09 | |
| S7.000 | S2G PITCH | |
| S1.010 | S1.10 | |
| S1.011 | S1.11 | |
| S8.000 | S5.00 | |
| S8.001 | S5.01 | |
| S9.000 | S6.00 | |
| S1.012 | S1.12 | |

©1982-2020 Innovyze

## 30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

### Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 1
Number of Online Controls 1 Number of Time/Area Diagrams 0
Number of Offline Controls 0 Number of Real Time Controls 0

### Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.360
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.000 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 300.0
Analysis Timestep 2.5 Second Increment (Extended)
DTS Status OFF
DVD Status ON
Inertia Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360
Return Period(s) (years) 1, 2, 30, 100
Climate Change (%) 0, 0, 0, 45

| PN | US/MH Name | Storm | Return Period | Climate Change | First (X) Surcharge | First (Y) Flood | First (Z) Overflow | Overflow Act. |
|---|---|---|---|---|---|---|---|---|
| S1.000 | S1.00 | 15 Summer | 30 | +0% | | | | |
| S1.001 | S1.01 | 15 Summer | 30 | +0% | | | | |
| S1.002 | S1.02 | 15 Summer | 30 | +0% | | | | |
| S2.000 | S2.00 | 15 Summer | 30 | +0% | | | | |
| S2.001 | S2.01 | 15 Summer | 30 | +0% | | | | |
| S1.003 | S1.03 | 15 Summer | 30 | +0% | | | | |
| S1.004 | S1.04 | 15 Summer | 30 | +0% | | | | |
| S3.000 | S3.00 | 15 Summer | 30 | +0% | | | | |
| S1.005 | S1.05 | 15 Summer | 30 | +0% | | | | |
| S1.006 | S1.06 | 15 Summer | 30 | +0% | | | | |
| S1.007 | S1.07 | 15 Summer | 30 | +0% | | | | |
| S4.000 | S4.00 | 15 Summer | 30 | +0% | | | | |
| S4.001 | S4.01 | 15 Summer | 30 | +0% | | | | |
| S4.002 | S4.02 | 15 Summer | 30 | +0% | | | | |
| S4.003 | S4.03 | 15 Summer | 30 | +0% | 100/15 Summer | | | |
| S4.004 | S4.04 | 15 Summer | 30 | +0% | 100/15 Summer | | | |
| S5.000 | SS3G PITCH | 15 Summer | 30 | +0% | | | | |
| S4.005 | S4.05 | 15 Summer | 30 | +0% | | | | |
| S6.000 | S3G MUGA | 15 Summer | 30 | +0% | | | | |

©1982-2020 Innovyze

## 30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

| PN | US/MH Name | Water Level (m) | Surcharged Depth (m) | Flooded Volume (m³) | Flow / Cap. | Overflow (l/s) | Half Drain Time (mins) | Pipe Flow (l/s) | Status |
|---|---|---|---|---|---|---|---|---|---|
| S1.000 | S1.00 | 73.189 | -0.375 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.001 | S1.01 | 72.980 | -0.375 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.002 | S1.02 | 72.848 | -0.375 | 0.000 | 0.00 | | | 0.0 | OK |
| S2.000 | S2.00 | 73.224 | -0.150 | 0.000 | 0.00 | | | 0.0 | OK |
| S2.001 | S2.01 | 73.048 | -0.150 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.003 | S1.03 | 72.718 | -0.375 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.004 | S1.04 | 72.676 | -0.333 | 0.000 | 0.03 | | | 8.9 | OK |
| S3.000 | S3.00 | 72.450 | -0.150 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.005 | S1.05 | 71.788 | -0.333 | 0.000 | 0.03 | | | 9.0 | OK |
| S1.006 | S1.06 | 70.044 | -0.312 | 0.000 | 0.06 | | | 8.9 | OK |
| S1.007 | S1.07 | 69.900 | -0.321 | 0.000 | 0.05 | | | 9.0 | OK |
| S4.000 | S4.00 | 73.388 | -0.172 | 0.000 | 0.12 | | | 5.9 | OK |
| S4.001 | S4.01 | 73.147 | -0.144 | 0.000 | 0.28 | | | 13.0 | OK |
| S4.002 | S4.02 | 72.970 | -0.146 | 0.000 | 0.26 | | | 12.6 | OK |
| S4.003 | S4.03 | 72.589 | -0.141 | 0.000 | 0.28 | | | 12.8 | OK |
| S4.004 | S4.04 | 72.549 | -0.037 | 0.000 | 1.00 | | | 79.4 | OK |
| S5.000 | SS3G PITCH | 72.830 | -0.120 | 0.000 | 0.09 | | | 3.0 | OK |
| S4.005 | S4.05 | 72.326 | -0.159 | 0.000 | 0.45 | | | 82.2 | OK |
| S6.000 | S3G MUGA | 71.323 | -0.202 | 0.000 | 0.02 | | | 0.9 | OK |

| PN | US/MH Name | Level Exceeded |
|---|---|---|
| S1.000 | S1.00 | |
| S1.001 | S1.01 | |
| S1.002 | S1.02 | |
| S2.000 | S2.00 | |
| S2.001 | S2.01 | |
| S1.003 | S1.03 | |
| S1.004 | S1.04 | |
| S3.000 | S3.00 | |
| S1.005 | S1.05 | |
| S1.006 | S1.06 | |
| S1.007 | S1.07 | |
| S4.000 | S4.00 | |
| S4.001 | S4.01 | |
| S4.002 | S4.02 | |
| S4.003 | S4.03 | |
| S4.004 | S4.04 | |
| S5.000 | SS3G PITCH | |
| S4.005 | S4.05 | |
| S6.000 | S3G MUGA | |

©1982-2020 Innovyze

## 30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

| PN | US/MH Name | Storm | Return Period | Climate Change | First (X) Surcharge | First (Y) Flood | First (Z) Overflow | Overflow Act. |
|---|---|---|---|---|---|---|---|---|
| S4.006 | S4.06 | 15 Summer | 30 | +0% | | | | |
| S1.008 | S1.08 | 15 Summer | 30 | +0% | 100/15 Summer | | | |
| S1.009 | S1.09 | 15 Summer | 30 | +0% | | | | |
| S7.000 | S2G PITCH | 15 Summer | 30 | +0% | | | | |
| S1.010 | S1.10 | 30 Summer | 30 | +0% | 100/30 Summer | | | |
| S1.011 | S1.11 | 30 Summer | 30 | +0% | 100/15 Summer | | | |
| S8.000 | S5.00 | 15 Summer | 30 | +0% | 100/15 Summer | | | |
| S8.001 | S5.01 | 15 Summer | 30 | +0% | 100/15 Summer | | | |
| S9.000 | S6.00 | 15 Summer | 30 | +0% | | | | |
| S1.012 | S1.12 | 60 Summer | 30 | +0% | 30/15 Summer | | | |

| PN | US/MH Name | Water Level (m) | Surcharged Depth (m) | Flooded Volume (m³) | Flow / Cap. | Overflow (l/s) | Half Drain Time (mins) | Pipe Flow (l/s) | Status |
|---|---|---|---|---|---|---|---|---|---|
| S4.006 | S4.06 | 71.209 | -0.154 | 0.000 | 0.48 | | | 105.8 | OK |
| S1.008 | S1.08 | 69.779 | -0.159 | 0.000 | 0.62 | | | 113.5 | OK |
| S1.009 | S1.09 | 69.312 | -0.184 | 0.000 | 0.51 | | | 113.5 | OK |
| S7.000 | S2G PITCH | 69.184 | -0.116 | 0.000 | 0.12 | | | 1.6 | OK |
| S1.010 | S1.10 | 68.994 | -0.184 | 0.000 | 0.47 | | | 59.3 | OK |
| S1.011 | S1.11 | 68.960 | -0.030 | 0.000 | 0.23 | | | 54.7 | OK |
| S8.000 | S5.00 | 69.122 | -0.153 | 0.000 | 0.22 | | | 10.4 | OK |
| S8.001 | S5.01 | 68.953 | -0.118 | 0.000 | 0.45 | | | 36.8 | OK |
| S9.000 | S6.00 | 69.281 | -0.119 | 0.000 | 0.10 | | | 4.5 | OK |
| S1.012 | S1.12 | 68.873 | 0.332 | 0.000 | 0.09 | | | 59.6 | SURCHARGED |

| PN | US/MH Name | Level Exceeded |
|---|---|---|
| S4.006 | S4.06 | |
| S1.008 | S1.08 | |
| S1.009 | S1.09 | |
| S7.000 | S2G PITCH | |
| S1.010 | S1.10 | |
| S1.011 | S1.11 | |
| S8.000 | S5.00 | |
| S8.001 | S5.01 | |
| S9.000 | S6.00 | |
| S1.012 | S1.12 | |

©1982-2020 Innovyze

## 100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

### Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coeffiecient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 1
Number of Online Controls 1 Number of Time/Area Diagrams 0
Number of Offline Controls 0 Number of Real Time Controls 0

### Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.360
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 18.000 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 300.0
Analysis Timestep 2.5 Second Increment (Extended)
DTS Status OFF
DVD Status ON
Inertia Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360
Return Period(s) (years) 1, 2, 30, 100
Climate Change (%) 0, 0, 0, 45

| PN | US/MH Name | Storm | Return Period | Climate Change | First (X) Surcharge | First (Y) Flood | First (Z) Overflow | Overflow Act. |
|---|---|---|---|---|---|---|---|---|
| S1.000 | S1.00 | 15 Summer | 100 | +45% | | | | |
| S1.001 | S1.01 | 15 Summer | 100 | +45% | | | | |
| S1.002 | S1.02 | 15 Summer | 100 | +45% | | | | |
| S2.000 | S2.00 | 15 Summer | 100 | +45% | | | | |
| S2.001 | S2.01 | 15 Summer | 100 | +45% | | | | |
| S1.003 | S1.03 | 15 Summer | 100 | +45% | | | | |
| S1.004 | S1.04 | 15 Summer | 100 | +45% | | | | |
| S3.000 | S3.00 | 15 Summer | 100 | +45% | | | | |
| S1.005 | S1.05 | 15 Summer | 100 | +45% | | | | |
| S1.006 | S1.06 | 15 Summer | 100 | +45% | | | | |
| S1.007 | S1.07 | 15 Summer | 100 | +45% | | | | |
| S4.000 | S4.00 | 15 Summer | 100 | +45% | | | | |
| S4.001 | S4.01 | 15 Summer | 100 | +45% | | | | |
| S4.002 | S4.02 | 15 Summer | 100 | +45% | | | | |
| S4.003 | S4.03 | 15 Summer | 100 | +45% | 100/15 Summer | | | |
| S4.004 | S4.04 | 15 Summer | 100 | +45% | 100/15 Summer | | | |
| S5.000 | SS3G PITCH | 15 Summer | 100 | +45% | | | | |
| S4.005 | S4.05 | 15 Summer | 100 | +45% | | | | |
| S6.000 | S3G MUGA | 15 Summer | 100 | +45% | | | | |

©1982-2020 Innovyze

## 100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

| PN | US/MH Name | Water Level (m) | Surcharged Depth (m) | Flooded Volume (m³) | Flow / Cap. | Overflow (l/s) | Half Drain Time (mins) | Pipe Flow (l/s) | Status |
|---|---|---|---|---|---|---|---|---|---|
| S1.000 | S1.00 | 73.189 | -0.375 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.001 | S1.01 | 72.980 | -0.375 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.002 | S1.02 | 72.848 | -0.375 | 0.000 | 0.00 | | | 0.0 | OK |
| S2.000 | S2.00 | 73.224 | -0.150 | 0.000 | 0.00 | | | 0.0 | OK |
| S2.001 | S2.01 | 73.048 | -0.150 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.003 | S1.03 | 72.718 | -0.375 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.004 | S1.04 | 72.676 | -0.333 | 0.000 | 0.03 | | | 8.9 | OK |
| S3.000 | S3.00 | 72.450 | -0.150 | 0.000 | 0.00 | | | 0.0 | OK |
| S1.005 | S1.05 | 71.788 | -0.333 | 0.000 | 0.03 | | | 9.0 | OK |
| S1.006 | S1.06 | 70.044 | -0.312 | 0.000 | 0.06 | | | 8.9 | OK |
| S1.007 | S1.07 | 69.967 | -0.253 | 0.000 | 0.06 | | | 11.4 | OK |
| S4.000 | S4.00 | 73.409 | -0.151 | 0.000 | 0.23 | | | 11.1 | OK |
| S4.001 | S4.01 | 73.183 | -0.108 | 0.000 | 0.52 | | | 24.3 | OK |
| S4.002 | S4.02 | 73.004 | -0.113 | 0.000 | 0.48 | | | 23.9 | OK |
| S4.003 | S4.03 | 72.900 | 0.170 | 0.000 | 0.72 | | | 32.7 | SURCHARGED |
| S4.004 | S4.04 | 72.835 | 0.249 | 0.000 | 1.83 | | | 145.5 | SURCHARGED |
| S5.000 | SS3G PITCH | 72.830 | -0.120 | 0.000 | 0.09 | | | 3.0 | OK |
| S4.005 | S4.05 | 72.395 | -0.090 | 0.000 | 0.80 | | | 146.5 | OK |
| S6.000 | S3G MUGA | 71.323 | -0.202 | 0.000 | 0.02 | | | 0.9 | OK |

| PN | US/MH Name | Level Exceeded |
|---|---|---|
| S1.000 | S1.00 | |
| S1.001 | S1.01 | |
| S1.002 | S1.02 | |
| S2.000 | S2.00 | |
| S2.001 | S2.01 | |
| S1.003 | S1.03 | |
| S1.004 | S1.04 | |
| S3.000 | S3.00 | |
| S1.005 | S1.05 | |
| S1.006 | S1.06 | |
| S1.007 | S1.07 | |
| S4.000 | S4.00 | |
| S4.001 | S4.01 | |
| S4.002 | S4.02 | |
| S4.003 | S4.03 | |
| S4.004 | S4.04 | |
| S5.000 | SS3G PITCH | |
| S4.005 | S4.05 | |
| S6.000 | S3G MUGA | |

©1982-2020 Innovyze

## 100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

| PN | US/MH Name | Storm | Return Period | Climate Change | First (X) Surcharge | First (Y) Flood | First (Z) Overflow | Overflow Act. |
|---|---|---|---|---|---|---|---|---|
| S4.006 | S4.06 | 15 Summer | 100 | +45% | | | | |
| S1.008 | S1.08 | 15 Summer | 100 | +45% | 100/15 Summer | | | |
| S1.009 | S1.09 | 15 Summer | 100 | +45% | | | | |
| S7.000 | S2G PITCH | 60 Summer | 100 | +45% | | | | |
| S1.010 | S1.10 | 60 Summer | 100 | +45% | 100/30 Summer | | | |
| S1.011 | S1.11 | 60 Summer | 100 | +45% | 100/15 Summer | | | |
| S8.000 | S5.00 | 30 Summer | 100 | +45% | 100/15 Summer | | | |
| S8.001 | S5.01 | 30 Summer | 100 | +45% | 100/15 Summer | | | |
| S9.000 | S6.00 | 15 Summer | 100 | +45% | | | | |
| S1.012 | S1.12 | 60 Summer | 100 | +45% | 30/15 Summer | | | |

| PN | US/MH Name | Water Level (m) | Surcharged Depth (m) | Flooded Volume (m³) | Flow / Cap. | Overflow (l/s) | Half Drain Time (mins) | Pipe Flow (l/s) | Status |
|---|---|---|---|---|---|---|---|---|---|
| S4.006 | S4.06 | 71.282 | -0.081 | 0.000 | 0.85 | | | 187.7 | OK |
| S1.008 | S1.08 | 69.956 | 0.018 | 0.000 | 1.02 | | | 187.9 | SURCHARGED |
| S1.009 | S1.09 | 69.390 | -0.107 | 0.000 | 0.85 | | | 188.9 | OK |
| S7.000 | S2G PITCH | 69.218 | -0.082 | 0.000 | 0.12 | | | 1.6 | OK |
| S1.010 | S1.10 | 69.211 | 0.033 | 0.000 | 0.52 | | | 66.5 | SURCHARGED |
| S1.011 | S1.11 | 69.205 | 0.215 | 0.000 | 0.26 | | | 63.5 | SURCHARGED |
| S8.000 | S5.00 | 69.420 | 0.145 | 0.000 | 0.38 | | | 18.1 | SURCHARGED |
| S8.001 | S5.01 | 69.383 | 0.311 | 0.000 | 0.68 | | | 55.1 | SURCHARGED |
| S9.000 | S6.00 | 69.293 | -0.107 | 0.000 | 0.18 | | | 8.4 | OK |
| S1.012 | S1.12 | 69.123 | 0.583 | 0.000 | 0.09 | | | 59.6 | SURCHARGED |

| PN | US/MH Name | Level Exceeded |
|---|---|---|
| S4.006 | S4.06 | |
| S1.008 | S1.08 | |
| S1.009 | S1.09 | |
| S7.000 | S2G PITCH | |
| S1.010 | S1.10 | |
| S1.011 | S1.11 | |
| S8.000 | S5.00 | |
| S8.001 | S5.01 | |
| S9.000 | S6.00 | |
| S1.012 | S1.12 | |

©1982-2020 Innovyze