FEH Mean Annual Flood

Input

Site Location GB 519150 274000 TL 19150 74000	
Area (ha)	2932.000
SAAR (mm)	556
URBEXT (1990)	0.0042
SPRHOST	53.750
BFIHOST	0.302
FARL	0.999

Results

QMED Rural (l/s) 4985.7 QMED Urban (l/s) 5007.0

IH 124 Mean Annual Flood

Input

Return Period (years)	100	Soil	0.433
Area (ha)	92.000	Urban	0.000
SAAR (mm)	544	Region Number	Region 5

Results	**l/s**
QBAR Rural	258.8
QBAR Urban	258.8
Q100 years	921.5
Q1 year	225.2
Q2 years	231.3
Q5 years	333.9
Q10 years	428.4
Q20 years	541.2
Q25 years	585.5
Q30 years	621.9
Q50 years	735.6
Q100 years	921.5
Q200 years	1084.5
Q250 years	1136.3
Q1000 years	1490.9

ICP SUDS Mean Annual Flood

Input

Return Period (years)	100	Soil	0.500
Area (ha)	532.000	Urban	0.000
SAAR (mm)	544	Region Number	Region 5

Results l/s

QBAR Rural	1686.2
QBAR Urban	1686.2
Q100 years	6002.8
Q1 year	1467.0
Q30 years	4051.0
Q100 years	6002.8

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Miller House Lower Stone Street Maidstone ME15 6GB		
Date 14/04/2014 11:51 File	Designed by greencf Checked by	
Micro Drainage	Source Control 2013.1.1	

IH 124 Mean Annual Flood

Input

Return Period (years)	100	Soil	0.430
Area (ha)	50.000	Urban	0.000
SAAR (mm)	540	Region Number	Region 5

Results	1/s
QBAR Rural	146.9
QBAR Urban	146.9
Q100 years	523.0
Q1 year	127.8
Q2 years	131.3
Q5 years	189.5
Q10 years	243.1
Q20 years	307.1
Q25 years	332.3
Q30 years	352.9
Q50 years	417.5
Q100 years	523.0
Q200 years	615.5
Q250 years	644.9
Q1000 years	846.2

Catchment area is only 25ha ∴ only take half of 100yr flow = 261.5 l/s

IH 124 Mean Annual Flood

Input

Return Period (years)	100	Soil	0.472
Area (ha)	51.000	Urban	0.000
SAAR (mm)	541	Region Number	Region 5

Results	**l/s**
QBAR Rural	183.4
QBAR Urban	183.4
Q100 years	653.0
Q1 year	159.6
Q2 years	163.9
Q5 years	236.6
Q10 years	303.6
Q20 years	383.5
Q25 years	414.9
Q30 years	440.7
Q50 years	521.3
Q100 years	653.0
Q200 years	768.5
Q250 years	805.2
Q1000 years	1056.5

Miller House
Lower Stone Street
Maidstone ME15 6GB

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Micro Drainage | Source Control 2013.1.1

IH 124 Mean Annual Flood

Input

Return Period (years)	100	Soil	0.472
Area (ha)	50.000	Urban	0.000
SAAR (mm)	541	Region Number	Region 5

Results	l/s
QBAR Rural	180.2
QBAR Urban	180.2
Q100 years	641.6
Q1 year	156.8
Q2 years	161.0
Q5 years	232.5
Q10 years	298.3
Q20 years	376.8
Q25 years	407.7
Q30 years	433.0
Q50 years	512.2
Q100 years	641.6
Q200 years	755.1
Q250 years	791.2
Q1000 years	1038.1

Miller House
Lower Stone Street
Maidstone ME15 6GB

Date 10/04/2014 15:44 | Designed by greencf
File | Checked by
Micro Drainage | Source Control 2013.1.1

IH 124 Mean Annual Flood

Input

Return Period (years)	100	Soil	0.497
Area (ha)	156.000	Urban	0.000
SAAR (mm)	543	Region Number	Region 5

Results l/s

QBAR Rural	557.3
QBAR Urban	557.3
Q100 years	1984.1
Q1 year	484.9
Q2 years	498.0
Q5 years	719.0
Q10 years	922.4
Q20 years	1165.3
Q25 years	1260.7
Q30 years	1339.0
Q50 years	1583.9
Q100 years	1984.1
Q200 years	2335.2
Q250 years	2446.7
Q1000 years	3210.2

IH 124 Mean Annual Flood

Input

Return Period (years)	100	Soil	0.499
Area (ha)	170.000	Urban	0.000
SAAR (mm)	543	Region Number	Region 5

Results l/s

QBAR Rural	606.9
QBAR Urban	606.9
Q100 years	2160.6
Q1 year	528.0
Q2 years	542.3
Q5 years	782.9
Q10 years	1004.4
Q20 years	1268.9
Q25 years	1372.8
Q30 years	1458.1
Q50 years	1724.8
Q100 years	2160.6
Q200 years	2542.9
Q250 years	2664.3
Q1000 years	3495.7

IH 124 Mean Annual Flood

Input

Return Period (years)	100	Soil	0.498
Area (ha)	177.000	Urban	0.000
SAAR (mm)	543	Region Number	Region 5

Results **l/s**

QBAR Rural	626.4
QBAR Urban	626.4
Q100 years	2229.8
Q1 year	544.9
Q2 years	559.7
Q5 years	808.0
Q10 years	1036.6
Q20 years	1309.6
Q25 years	1416.8
Q30 years	1504.8
Q50 years	1780.1
Q100 years	2229.8
Q200 years	2624.4
Q250 years	2749.7
Q1000 years	3607.8

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Miller House Lower Stone Street Maidstone ME15 6GB		
Date 10/04/2014 15:47 File	Designed by greencf Checked by	
Micro Drainage	Source Control 2013.1.1	

ICP SUDS Mean Annual Flood

Input

Return Period (years)	100	Soil	0.496
Area (ha)	253.000	Urban	0.000
SAAR (mm)	544	Region Number	Region 5

Results **l/s**

QBAR Rural	855.2
QBAR Urban	855.2
Q100 years	3044.4
Q1 year	744.0
Q30 years	2054.5
Q100 years	3044.4

ICP SUDS Mean Annual Flood

Input

Return Period (years)	100	Soil	0.450
Area (ha)	723.000	Urban	0.000
SAAR (mm)	550	Region Number	Region 5

Results l/s

QBAR Rural	1785.5
QBAR Urban	1785.5
Q100 years	6356.3
Q1 year	1553.4
Q30 years	4289.6
Q100 years	6356.3

IH 124 Mean Annual Flood

Input

Return Period (years)	100	Soil	0.500
Area (ha)	136.000	Urban	0.000
SAAR (mm)	544	Region Number	Region 5

Results l/s

QBAR Rural	500.8
QBAR Urban	500.8
Q100 years	1782.9
Q1 year	435.7
Q2 years	447.5
Q5 years	646.1
Q10 years	828.9
Q20 years	1047.1
Q25 years	1132.9
Q30 years	1203.2
Q50 years	1423.4
Q100 years	1782.9
Q200 years	2098.5
Q250 years	2198.6
Q1000 years	2884.8

IH 124 Mean Annual Flood

Input

Return Period (years)	100	Soil	0.500
Area (ha)	202.000	Urban	0.000
SAAR (mm)	545	Region Number	Region 5

Results l/s

QBAR Rural	713.7
QBAR Urban	713.7
Q100 years	2540.9
Q1 year	620.9
Q2 years	637.8
Q5 years	920.7
Q10 years	1181.2
Q20 years	1492.3
Q25 years	1614.5
Q30 years	1714.7
Q50 years	2028.4
Q100 years	2540.9
Q200 years	2990.5
Q250 years	3133.3
Q1000 years	4111.1

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Miller House Lower Stone Street Maidstone ME15 6GB		Micro Drainage
Date 10/04/2014 15:50 File	Designed by greencf Checked by	
Micro Drainage	Source Control 2013.1.1	

ICP SUDS Mean Annual Flood

Input

Return Period (years)	100	Soil	0.500
Area (ha)	2267.000	Urban	0.000
SAAR (mm)	545	Region Number	Region 5

Results l/s

QBAR Rural	6139.4
QBAR Urban	6139.4
Q100 years	21856.2
Q1 year	5341.3
Q30 years	14749.8
Q100 years	21856.2

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Miller House Lower Stone Street Maidstone ME15 6GB		Micro Drainage
Date 14/05/2014 08:27 File	Designed by greencf Checked by	
Micro Drainage	Source Control 2013.1.1	

FEH Mean Annual Flood

Input

Site Location	GB 533250 267050 TL 33250 67050
Area (ha)	2267.000
SAAR (mm)	545
URBEXT (1990)	0.0019
SPRHOST	51.310
BFIHOST	0.318
FARL	1.000

Results

QMED Rural (l/s) 3872.7 QMED Urban (l/s) 3880.5

Culvert Ref: CU101 - Cock Brook

Data		
		+20%CC
Design Discharge (m3/s) =	13.68	16.416
Approximate Length (m)=	134	
Slope of Culvert =	0.003333	Assumed!! Minimum gradient to lay at 1/300
Allowable head water depth (m) =	2.65	Assumed!! Based on height of existing culvert
Assumed culvert size (m) =	2.65	x 2.8(w)

Inlet Control	
From chart HW/D =	0.85
HW = HW/D x D	2.2525
Culvert size OK?	OK

Outlet Control	
Assume TW (m) =	2.65
ho =	2.65
From chart H =	0.5
HW = H + ho -LSo	2.703333
Culvert size OK?	Not OK

Outlet Control
Use 2.65 x 2.8

Culvert Ref: CU103 - Brampton Brook

Data		
		+20%CC
Design Discharge (m3/s) =	0.919	1.1028
Approximate Length (m)=	16	
Slope of Culvert =	0.0028	From Atkins survey data, verification required
Allowable head water depth (m) =	1.67	1 in 100 year water level = 11.67m, invert level of stream 10.00
Assumed culvert size (m) =	1.05	

Inlet Control	
From chart HW/D =	0.825
HW = HW/D x D	0.86625
Culvert size OK?	OK

Outlet Control	
Assume TW (m) =	1.05
ho =	1.05
From chart H =	0.15
HW = H + ho -LSo	1.1552
Culvert size OK?	OK

Outlet Control
Use size dia 1050

Culvert Ref: CU117 - Brampton Brook

Data		
		+20%CC
Design Discharge (m3/s) =	0.919	1.1028
Approximate Length (m)=	65	
Slope of Culvert =	0.0028	From Atkins survey data, verification required
Allowable head water depth (m) =	1.67	1 in 100 year water level = 11.67m, invert level of stream 10.00
Assumed culvert size (m) =	1.05	

Inlet Control	
From chart HW/D =	0.825
HW = HW/D x D	0.86625
Culvert size OK?	OK

Outlet Control	
Assume TW (m) =	1.05
ho =	1.05
From chart H =	0.23
HW = H + ho -LSo	1.098
Culvert size OK?	OK

Outlet Control
Use size dia 1050

Culvert Ref: CU124 - Grafham Road Drain

Data		+20%CC
Design Discharge (m3/s) =	6	7.2
Approximate Length (m)=	100	
Slope of Culvert =	0.007143	Based on Atkins survey - requires verification
Allowable head water depth (m) =	2.45	1 in 100yr water level = 16.45, Invert of stream = 14.00
Assumed culvert size (m) =	2.1	

Inlet Control	
From chart HW/D =	0.95
HW = HW/D x D	1.995
Culvert size OK?	OK

Outlet Control	
Assume TW (m) =	2.45
ho =	2.45
From chart H =	0.46
HW = H + ho -LSo	2.195714
Culvert size OK?	OK

Outlet Control
Use size 2100dia

Culvert Ref: CU143 - Embankment Drainage

Data		
		+20%CC
Design Discharge (m3/s) =	0.179	0.2148
Approximate Length (m)=	75	
Slope of Culvert =	0.003333	Assumed!! Minimum gradient to lay at 1/300
Allowable head water depth (m) =	0.5	Assumed!! Based on standard ditch profiles developed
Assumed culvert size (m) =	0.525	

Inlet Control	
From chart HW/D =	0.76
HW = HW/D x D	0.399
Culvert size OK?	OK

Outlet Control	
Assume TW (m) =	0.5
ho =	0.5
From chart H =	0.17
HW = H + ho -LSo	0.42
Culvert size OK?	OK

Outlet Control
Use size 525dia

Culvert Ref: CU145 - Local Road Drain

Data		
		+20%CC
Design Discharge (m3/s) =	0.207	0.2484
Approximate Length (m)=	40	
Slope of Culvert =	0.003333	Assumed!! Minimum gradient to lay at 1/300
Allowable head water depth (m) =	0.5	Assumed!! Based on standard ditch profiles developed
Assumed culvert size (m) =	0.6	

Inlet Control	
From chart HW/D =	0.68
HW = HW/D x D	0.408
Culvert size OK?	OK

Outlet Control	
Assume TW (m) =	0.5
ho =	0.5
From chart H =	0.1
HW = H + ho -LSo	0.466667
Culvert size OK?	OK

Outlet Control
Use size 600dia

Culvert Ref: CU148 - Local Road/Land Drain

Data		
		+20%CC
Design Discharge (m3/s) =	0.262	0.3144
Approximate Length (m)=	114	
Slope of Culvert =	0.003333	Assumed!! Minimum gradient to lay at 1/300
Allowable head water depth (m) =	0.5	Assumed!! Based on standard ditch profiles developed
Assumed culvert size (m) =	0.675	

Inlet Control	
From chart HW/D =	0.66
HW = HW/D x D	0.4455
Culvert size OK?	OK

Outlet Control	
Assume TW (m) =	0.5
ho =	0.5
From chart H =	0.17
HW = H + ho -LSo	0.29
Culvert size OK?	OK

Inlet Control
Use size 675dia

Culvert Ref: CU154 - Stoneymill Brook

Data		+20%CC	
Design Discharge (m3/s) =	0.653	0.7836	
Approximate Length (m)=	70		
Slope of Culvert =	0.013333	Assumed!!	From contours
Allowable head water depth (m) =	0.75	Assumed!!	Based on observed total depth of the drain
Assumed culvert size (m) =	0.9		

Inlet Control	
From chart HW/D =	0.83
HW = HW/D x D	0.747
Culvert size OK?	OK

Outlet Control	
Assume TW (m) =	0.75
ho =	0.75
From chart H =	0.24
HW = H + ho -LSo	0.056667
Culvert size OK?	OK

Inlet Control
Use size 900 dia

Culvert Ref: CU156 - Land Drain

Data		
		+20%CC
Design Discharge (m3/s) =	0.321	0.3852
Approximate Length (m)=	56	
Slope of Culvert =	0.003333	Assumed!! Minimum gradient to lay at 1/300
Allowable head water depth (m) =	0.5	Assumed!! Based on standard ditch profiles developed
Assumed culvert size (m) =	0.675	

Inlet Control	
From chart HW/D =	0.75
HW = HW/D x D	0.50625
Culvert size OK?	Not OK

Outlet Control	
Assume TW (m) =	0.5
ho =	0.5
From chart H =	0.14
HW = H + ho -LSo	0.453333
Culvert size OK?	OK

Inlet Control
Use size 675dia - could upsize to 750dia if needed

Culvert Ref: CU163 - Huntingdonshire District Council Award Drain (1)

Data			
		+20%CC	
Design Discharge (m3/s) =	1.98	2.376	
Approximate Length (m)=	48		
Slope of Culvert =	0.003333	Assumed!!	Minimum gradient to lay at 1/300
Allowable head water depth (m) =	2	Assumed!!	Based on ditch profiles to be used
Assumed culvert size (m) =	1.5		

Inlet Control	
From chart HW/D =	0.74
HW = HW/D x D	1.11
Culvert size OK?	OK

Outlet Control		
Assume TW (m) =	2	
ho =	2	
From chart H =	0.16	
HW = H + ho -LSo	2	
Culvert size OK?	Not OK	Matched allowable HW so OK

Outlet Control
Use size 1500 dia

Culvert Ref: CU164 & 165 - Huntingdonshire District Council Award Drain (4)

Data			
		+20%CC	
Design Discharge (m3/s) =	2.16	2.592	
Approximate Length (m)=	65		
Slope of Culvert =	0.004	Assumed!!	Based on contour plan
Allowable head water depth (m) =	2	Assumed!!	Based on ditch profiles developed
Assumed culvert size (m) =	1.5		

Inlet Control	
From chart HW/D =	0.79
HW = HW/D x D	1.185
Culvert size OK?	OK

Outlet Control	
Assume TW (m) =	2
ho =	2
From chart H =	0.23
HW = H + ho -LSo	1.97
Culvert size OK?	OK

Outlet Control
Use size 1500dia

Culvert Ref: CU166 - Huntingdonshire District Council Award Drain (2)

Data			
		+20%CC	
Design Discharge (m3/s) =	2.23	2.676	
Approximate Length (m)=	64		
Slope of Culvert =	0.003333	Assumed!!	Minimum gradient to lay at 1/300
Allowable head water depth (m) =	2	Assumed!!	Based on ditch profiles developed
Assumed culvert size (m) =	1.5		

Inlet Control	
From chart HW/D =	0.825
HW = HW/D x D	1.2375
Culvert size OK?	OK

Outlet Control	
Assume TW (m) =	2
ho =	2
From chart H =	0.25
HW = H + ho -LSo	2.036667
Culvert size OK?	Not OK

Outlet Control
Use size 1500 dia

Culvert Ref: CU167 - Huntingdonshire District Council Award Drain (3)

Data		+20%CC	
Design Discharge (m3/s) =	3.04	3.648	
Approximate Length (m)=	50		
Slope of Culvert =	0.003333	Assumed!!	Minimum gradient to lay at 1/300
Allowable head water depth (m) =	2	Assumed!!	Based on ditch profiles developed
Assumed culvert size (m) =	1.8		

Inlet Control	
From chart HW/D =	0.75
HW = HW/D x D	1.35
Culvert size OK?	OK

Outlet Control	
Assume TW (m) =	2
ho =	2
From chart H =	0.17
HW = H + ho -LSo	2.003333
Culvert size OK?	Not OK

Outlet Control
Use size 1800 dia

Culvert Ref: CU182 - Hilton Road Drain

Data		+20%CC	
Design Discharge (m3/s) =	7.89	9.468	
Approximate Length (m)=	89		
Slope of Culvert =	0.003333	Assumed!!	Minimum gradient to lay at 1/300
Allowable head water depth (m) =	2	Assumed!!	Based on observed total depth of the drain
Assumed culvert size (m) =	2.4	2.7	

Inlet Control	
From chart HW/D =	0.69
HW = HW/D x D	1.656
Culvert size OK?	OK

Outlet Control	
Assume TW (m) =	2
ho =	2
From chart H =	0.218
HW = H + ho -LSo	1.921333
Culvert size OK?	OK

Outlet Control
Use box culvert 2.4m (h) x 2.7m (w)

Culvert Ref: CU187 - Connington Road Drain

Data		+20%CC	
Design Discharge (m3/s) =	1.78	2.136	
Approximate Length (m)=	81		
Slope of Culvert =	0.003333	Assumed!!	Minimum gradient to lay at 1/300
Allowable head water depth (m) =	1.2	Assumed!!	Based on observed total depth of the drain
Assumed culvert size (m) =	1.5		

Inlet Control	
From chart HW/D =	0.7
HW = HW/D x D	1.05
Culvert size OK?	OK

Outlet Control	
Assume TW (m) =	1.2
ho =	1.2
From chart H =	0.16
HW = H + ho -LSo	1.09
Culvert size OK?	OK

Outlet Control
Use size 1500dia

Culvert Ref: CU196 - Oxholme Award Drain

Data		+20%CC	
Design Discharge (m3/s) =	2.54	3.048	Based on Atkins catchment area
Approximate Length (m)=	98		
Slope of Culvert =	0.003333	Assumed!!	Minimum gradient to lay at 1/300
Allowable head water depth (m) =	2	Assumed!!	Based on observed total depth of the drain
Assumed culvert size (m) =	1.8		

Inlet Control	
From chart HW/D =	0.69
HW = HW/D x D	1.242
Culvert size OK?	OK

Outlet Control	
Assume TW (m) =	1.2
ho =	1.2
From chart H =	0.175
HW = H + ho -LSo	1.048333
Culvert size OK?	OK

Inlet Control
Use size 1800dia.

Culvert Ref: CU199 - Covells Drain

Data		+20%CC	
Design Discharge (m3/s) =	10.5	12.6	
Approximate Length (m)=	60		
Slope of Culvert =	0.003333	Assumed!!	Minimum gradient to lay at 1/300
Allowable head water depth (m) =	2.5	Assumed!!	Based on observed total depth of the drain
Assumed culvert size (m) =	2.5	x 3 (w)	

Inlet Control	
From chart HW/D =	0.68
HW = HW/D x D	0.74
Culvert size OK?	OK

Outlet Control	
Assume TW (m) =	2.5
ho =	2.5
From chart H =	0.21
HW = H + ho -LSo	2.51
Culvert size OK?	Not OK

Outlet Control
Use 2.5m x 3m box culvert