

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.450
Ratio-R	0.400	Preferred Cover Depth (m)	0.500
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
Hangar	0.022	5.00	5.000	100	465874.722	135772.021	0.580
Soakaway			5.000	100	465876.717	135777.133	0.635

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	Hangar	Soakaway	5.487	0.600	4.420	4.365	0.055	100.0	100	5.12	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	0.766	6.0	3.0	0.480	0.535	0.022	0.0	50	0.766

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
FSR Region	England and Wales	Skip Steady State	x
M5-60 (mm)	20.000	Drain Down Time (mins)	240
Ratio-R	0.400	Additional Storage (m³/ha)	20.0
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15 30 60 120 180 240 360 480 600 720 960 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
30	0	0	0
100	40	0	0

Node Soakaway Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.05364	Invert Level (m)	4.000	Depth (m)	0.400
Side Inf Coefficient (m/hr)	0.05364	Time to half empty (mins)	346	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	14.000	Number Required	1
Porosity	0.95	Pit Length (m)	2.000		

Approval Settings

Node Size	x	Coordinates	x	Full Bore Velocity	x	Time to Half Empty	✓
Node Losses	✓	Crossings	x	Proportional Velocity	x	Return Period (years)	100
Link Size	x	Cover Depth	x	Surcharged Depth	x	Discharge Rates	x
Link Length	x	Backdrops	x	Flooding	x	Discharge Volume	x

Approval Results

The network has been designed for a 1 in 2 year storm using FSR rainfall
It contains 2 nodes (0 outfalls) and 1 link
The total impermeable area is 0.022 ha
1 structure has been defined, providing 11m³ of storage below the flood risk level
Infiltration based on BRE 365 has been applied at 1 of the structures
Simulations have been completed using FSR summer and winter storms from 15 to 1440 minute duration

The node size test has not been completed

No connections have combined exit and entry losses less than the recommended total

The link size test has not been completed

The link length test has not been completed

The coordinates test has not been completed

The crossings test has not been completed

The cover depth test has not been completed

The backdrops test has not been completed

The full bore velocity test has not been completed

The proportional velocity test has not been completed

The surcharged depth test has not been completed

The flooding test has not been completed

No structures failed to half empty in 1440 minutes during the 100 year return period

The 1 year discharge rate test has not been completed

The 30 year discharge rate test has not been completed

The 100 year discharge rate test has not been completed

The discharge volume test has not been completed

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	Hangar	232	4.868	0.448	2.6	0.3431	0.0000	FLOOD RISK
240 minute winter	Soakaway	232	4.868	0.503	2.6	10.6573	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
240 minute winter	Hangar	1.000	Soakaway	2.6	0.714	0.431	0.0429
240 minute winter	Soakaway	Infiltration		0.3			