[redacted]

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From: Paul Cann <Paul.Cann@arun.gov.uk>
Sent: 19 March 2020 10:44
To: Karen Garner <Karen.Garner@arun.gov.uk>
Subject: RE: AL/106/19/DOC Consultation responses

Hi Karen

Based upon the enclosed documents (need uploading to the portal) and those documents on the portal, I can confirm that the proposals had been agreed with my former colleague Laura Gibbons. Therefore, conditions 19,20 and 21 can be discharged.

Regards

Paul Cann
Principal Engineer (Drainage)

Paul Cann | Principal Engineer (Drainage), Engineering Services, Arun District Council | Location: First Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF
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From: Karen Garner <Karen.Garner@arun.gov.uk>
Sent: 13 March 2020 10:33
To: Paul Cann <Paul.Cann@arun.gov.uk>; Fiona Fitzgerald <Fiona.Fitzgerald@arun.gov.uk>
Subject: AL/106/19/DOC Consultation responses
Importance: High

Hi,

Could I please have a consultation response on the above discharge of condition application by the 20/03/2020. The developer has agreed another extension of time to allow your responses, but I'm not sure we will get any more agreements from them.
I don't want it to be deemed consent without your written approval before the file expires.

Many thanks for your help.

Kind regards,
Karen

Karen Garner | Post Approval Implementation and Monitoring Officer, Planning Department, Arun District Council |
Location: 1st Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF
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THE HEDGEROWS
LAND OFF NYTON ROAD
EASTERGATE
WEST SUSSEX

SUDS MANAGEMENT & MAINTENANCE PLAN

TAYLOR WIMPEY SOUTHERN COUNTIES

Date: 6th March 2018
Ref: AMc/18/0163/5655
Rev: D

ARUN DISTRICT COUNCIL AD/106/19/DOC

DOCUMENT CONTROL RECORD

Document Issue:

Rev	Date	Issue Status	Prepared by	Checked by
-	06/03/18	First Issue	A. Mcshane	C. Pendle
A	08/03/18	Updated to include ditch maintenance	A. Mcshane	C. Pendle
B	28/03/18	Updated following ADC comments	A. Mcshane	C. Pendle
C	02/11/18	Updated to ACO drains: 4.24	S.Smith	C. Pendle
D	22/08/19	Updated to specify ACO drains	S.Smith	C. Pendle

References:

The SUDS manual – CIRIA C753 (2015) ISBN 9780-86017-760-9

National Planning Policy Framework (NPPF) – Communities and Local Government
Technical Guidance - Flood Risk & Coastal Change (March 2012)

1 Introduction

1.1 This document sets out the principles for the long term management and maintenance of the proposed surface water Sustainable Drainage Systems (SuDS) installed within the development as well as the existing ditch systems associated with The Hedgerows development, Eastergate, West Sussex.

1.2 The purpose of this document is to ensure that the management company and /or homeowner that will be maintaining the SuDS and ditches is entrusted with an inspection and maintenance programme to ensure the optimum operation of the surface water drainage network is continually maintained for the lifetime of the development and to prevent the increased risk of flooding both on and off site in accordance with the NPPF. The management company is funded by the development residents with every property paying an apportionment of the overall annual charge according to the size of the property.

1.3 The principle storm water drainage strategy for the development is to utilise infiltration throughout the development ensuring that no runoff will be generated from the site. High level overflows from the permeable paving to the existing western ditches have been added to the system, this further protects the development from flooding.

1.4 This document details the SuDS structures within the treatment train and their required maintenance processes to ensure that no polluted discharge to the groundwater will take place.

1.5 This plan has been directly referenced from the latest technical SuDS guidance within the *CIRIA Report C753 The SuDS Manual* (2015) and other applicable guidance.

1.6 This document is laid out in specific sections applicable to the relevant SuDS type detailing:

- A description of the SUDS component and its use.
- Maintenance requirements and frequencies.
- Inspection requirements and frequencies.

1.7 The activities listed are generic to the relative SuDS types and represent the minimum maintenance and inspection requirements, however additional tasks or varied maintenance frequency may be instructed by the maintenance company as required. Specific maintenance needs of the SuDS elements should be monitored and maintenance schedules adjusted to suit requirements.

1.8 This report is to read in conjunction with SUDS Management & Drainage Plan for the type and location of all SuDS systems present on this site.

ARUN DISTRICT COUNCIL AL/106/19/DOC

2 SuDS Layout & Design

2.1 The installed SuDS system at this development are the responsibility of Taylor Wimpey Southern Counties and their appointed Management Company.

2.2 Following installation and after transfer, all SuDS are to be maintained in perpetuity by the Management Company and shall ensure that it or any contractor employed by it carries out periodic maintenance of all such SuDS in accordance with the schedules listed in this report. Inspection checks shall be carried out by a qualified and competent person, at the minimum intervals listed within the schedules and the appropriate work carried out.

2.3 In terms of water quality, the proposed surface water system offers a suitable level of mitigation in accordance with the Environment Agency pollution prevention guidance GP3, NPPF, CIRIA C753 and DEFRA guidance.

2.4 There are three categories of maintenance activities referred to in this report:

- **Regular maintenance** (including inspections and monitoring).
  Consists of basic tasks done on a frequent and predictable schedule, including vegetation management, litter and debris removal, inspections and sampling.

- **Occasional maintenance**
  Comprises tasks that are likely to be required periodically, but on a much less frequent and predictable basis than the routine tasks (sediment removal is an example).

- **Remedial maintenance**
  Comprises intermittent tasks that may be required to rectify faults associated with the system, although the likelihood of faults can be minimised by good design.
  Where remedial work is found to be necessary, it is likely to be due to site-specific characteristics or unforeseen events, and as such timings are difficult to predict.

2.5 There are a number of SuDS components with the surface water drainage system including:

- Permeable paving for development roads
- Deep trap gullies and Beanie kerbs draining to infiltration swales
- ACO drains
- Infiltration swales & basins
- Permeable paving for driveways
- Soakaway trenches to rear gardens for residential plot drainage
- High level overflows to ditches

2.6 There are a number of drainage elements surrounding the site which do not link directly to the development drainage but do effect the surrounding infrastructure including:

- Western boundary ditch systems
- Ditch culverts

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3 Surface Water Drainage Strategy

The surface water drainage strategy for the development and the SuDS management train is described below:

Roofs:

- Runoff from roofs discharge through downpipes from the rear of properties to linier stone filled trench soakaways. Where possible roof downpipes from the front of plots will discharge to the permeable driveway areas.
- Within housing parcel areas trench soakaways are linked via high level overflows.

Drives, Parking Areas and Private Roads:

- Driveways, parking areas and sections of private road will be constructed using permeable block paving or traditional deep trapped gullies discharging into a permeable type stone sub base.
- This type of construction will provide an effective method of removing the urban pollutants prior to infiltrating.
- Some permeable driveways have been fitted with ACO drains which still ultimately soak through the sub-base.

Adopted Development Roads:

- Roads within the development will be constructed and drained as followed:
    - Permeable block paving or traditional deep trapped gullies discharging into a permeable type stone sub base.
    - Standard macadam construction draining via gullies and Beanie kerbs discharging to infiltration swales.
- Both types of drainage will provide an effective method of removing the urban pollutants prior to infiltrating.
- High level overflows are included to outlying ditches on western boundaries

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4 SUDS Management & Maintenance

4.1 Road Gullies & Beanie Kerbs

Road gully maintenance will comprise of the removal of large debris and litter by hand picker and sucking out the sediment / oil contents of the gully into a tanker, ensuring that the outlet is clear and then re-filling the gully pot with clean water up to the level of the outlet.

During the first year of operation each gully should be inspected every 3 months, and every 6 months thereafter for structural integrity and cleaned out as required.

4.2 Infiltration Basins and Swales

Key Maintenance Requirements:

- Grass mowing / vegetation management
- Litter / debris removal and sediment monitoring

4.3 Regular inspection and maintenance is important for the effective operation of the swales as designed.
Many of the maintenance activities for swales can be undertaken as part of landscape maintenance and, if landscape management is already required at site, should have marginal cost implications.

4.4 These activities will be carried out at intervals detailed below, and shall comprise of the following operations:

- Collection and removal of all litter/large debris from the attenuation pond, inlets, outflows, and water margins once a month.

- Monthly Inspection of the attenuation ponds to check the following, and repair as necessary:
  - Any failure in the operation of the inlet and outlet headwalls unless adopted by others in which case they will be notified of any observed defect.
  - Any damage or erosion to the perimeter edges and slopes of the attenuation ponds.

4.5 An annual check carried out by a suitably qualified person, to assess the condition and operation of the swale inlets and outflows, and the accumulation of silt/sediment.
A record of maintenance visits and remedial operations shall be maintained.

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4.6 The above operations shall (where feasible) be in conjunction with routine grounds maintenance operations to the surrounding landscape.

Infiltration Basin & Swale Maintenance Requirements

Maintenance schedule	Required action	Frequency
Regular maintenance	Litter and debris removal.	Monthly.
	Grass cutting – for spillways and access routes.	Monthly (during growing season), or as required.
	Grass cutting – meadow grass in and around basin.	Half yearly (spring – before nesting season, and autumn).
	Manage other vegetation and remove nuisance plants.	Monthly (at start, then as required).
	Tidy all dead growth before start of growing season.	Annually.
	Remove sediment from inlets, outlet and forebay.	Annually (or as required).
	Manage wetland plants in outlet pool – where provided.	Annually.
Occasional maintenance	Re-seed areas of poor vegetation growth.	Annually, or as required.
	Prune and trim trees and remove cuttings.	2 years, or as required.
	Remove sediment from forebay, when 50 % full and from micropools if volume reduced by > 25%.	3 – 10 years (or as required).
Remedial actions	Repair of erosion or other damage by re-seeding or re-turfing.	As required.
	Realignment of rip-rap.	As required.
	Repair/rehabilitation of inlets, outlets and overflows.	As required.
	Re-level uneven surfaces and reinstate design levels.	As required.
Monitoring	Inspect inlets, outlets and overflows for blockages, and clear if required.	Monthly/after large storms.
	Inspect banksides, structures, pipework etc for evidence of physical damage.	Monthly/after large storms.
	Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies.	Half yearly.
	Check penstocks and other mechanical devices.	Half yearly.

4.7 In addition to regular routine items, de-silting of the swale may be required, usually on a 10-15 year cycle depending on the on-going silt level checking.

4.8 The desilting work will be carried out in accordance with a pre-agreed method statement. Such a method statement should be submitted in writing to the local authority and agreed in advance of the commencement of the works.

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4.9 Prior to desilting works commencing, a suitably qualified ecologist shall be appointed to undertake an assessment of the ecological interest within the pond and its margins. In the event that the attenuation ponds develop particular ecological interest, then careful consideration will be given to the timing of this operation.

4.10 Sediments excavated from swales that receive runoff from residential or standard road and roof areas are generally not toxic or hazardous material and can be safely disposed of by either land application or landfilling.
However, consultation should take place with the environmental regulator to confirm appropriate protocols.

4.11 Permeable Block Paving

4.12 Key Maintenance Requirements:

- Sweeping
- Regular brushing and vacuuming (to be carried out by a specialist contractor)

4.13 Regular inspection and maintenance is important for the effective operation of permeable pavements and should be inspected regularly, preferably during and after heavy rainfall to check effective operation and to identify any areas of ponding.

4.14 Permeable block paving needs to be regularly cleaned of silt and other sediments to preserve infiltration capability and should have a minimum of three surface sweepings per year.

A brush and suction cleaner, which can be a lorry-mounted device or a smaller precinct sweeper, should be used and the sweeping regime should be as follows:

1. End of winter (April) – to collect winter debris.
2. Mid-summer (July/August) – to collect dust, flower and grass-type deposits.
3. After autumn leaf fall (November).

4.15 Care should be taken in adjusting vacuuming equipment to avoid removal of jointing Material and any lost material should be replaced.

4.16 To ensure the continual optimal performance of the permeable paving, it is recommended that the following maintenance should be carried out:
The following guidelines are offered as an initial regime, but maybe either increased or decreased depending on the local environment and any external contributing factors:

- A visual inspection of the paving may be carried out on a regular basis.
  This will confirm the effectiveness of the agitation maintenance due to variations between sites and allow any refinement of the regular agitation activity if necessary.

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- The paving should be agitated (e.g. brushed, vacuumed, etc.) at least twice a year. This is to ensure no vegetation of any sort is allowed to grow and develop in the joints. Ideally, this activity should be carried out in the spring and autumn seasons.

- The paving should be inspected after any heavy precipitation to ensure no displacement of any organic matter onto the surface of the pavement.

- For winter maintenance, the controlled use of de-icing may be used without causing significant detrimental effects towards the permeable pavements performance. When used carefully, the use of these chlorides will not result in an increase in the chloride levels in the local ground.

- Weed growth – when sedimentation occurs in areas of permeable paving then there is the potential for weed growth, this will typically occur where there are overhanging trees or soft landscaping slopes down on to the paving or in areas which do not receive over run from vehicles particularly frequently. Weeds can be removed from the surface through the controlled application of proprietary non-persistent contact herbicides. Those containing Glyphosate are the most suitable.

4.18 Glyphosate based herbicides are the most common for general-purpose use, they are most effective on grasses and perennial weeds with non-woody stems. Weeds should be sprayed when they are actively growing, in dry but not sunny conditions, so that the Glyphosate will go down to the root and kill the weed completely. Glyphosate will be neutralized upon contact with the ground, which makes it safe to plant in the area soon after treatment. It is available ready mixed or as a concentrate.

4.19 Depending on the amount of usage and the environment the permeable pavement has received and been exposed to, the laying course material may require either replacement or cleaning after a 25 to 30 year period. This would be evident if the infiltration rate of the paving became prolonged, allowing ponding to develop.
Should this occur, the uplifting and cleaning (or replacing, depending on the costings of the activity) of the laying course maybe considered.
The laying course material, jointing and blocks may be reused (once cleaned), minimising costs.

4.20 If reconstruction is necessary, the following procedure should be followed:

1. Lift surface layer and laying course.
2. Remove any geotextile filter layer.
3. Inspect sub-base and remove, wash and replace if required.
4. Renew any geotextile layer.
5. Renew laying course, jointing material and concrete block paving.

4.21 Materials removed from the voids or the layers below the surface may contain heavy metals and hydrocarbons and may need to be disposed of as controlled waste. Sediment testing should be carried out before disposal to confirm its classification and appropriate disposal methods.

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4.22 Driveways & Private Roads

Driveways & Private Roads will either be constructed as permeable block paving (outlined above) or constructed as an impervious surface drained via traditional deep trapped / yard gullies discharging into a permeable high-void aggregate sub-base layer beneath.
This sub-base allows for filtration of pollutants from the runoff which is infiltrated to the sub strata below.

4.23 General yard gully and linear channel maintenance involves the removal of dead leaves, soil, litter from the gratings and sediments from the sump within the gully pot or channel.
This involves the removal all protective covers and grids and the cleaning out of channels or gully pots by hand or with suitable jetting equipment.

During the first year of operation each gully and channel should be inspected every 3 months, and every 6 months thereafter for structural integrity and cleaned out as required.

4.24 General yard gully and linear channel maintenance involves the removal of dead leaves, soil, litter from the gratings and sediments from the sump within the gully pot or channel.
This involves the removal all protective covers and grids and the cleaning out of channels or gully pots by hand or with suitable jetting equipment.
During the first year of operation each gully and channel should be inspected every 3 months, and every 6 months thereafter for structural integrity and cleaned out as required.

4.25 Trench Soakaways

The filter trench soakaway is a linear excavcation filled with stone and a perforated pipe running the length. At each end of the soakaway trench there are catchpit inspection chambers.
These catchpit chambers allow for the collection of sediments/debris from the catchpit sump and for the internal inspection / clearance of blockages of the perforated pipe if required.

4.26 Filter trenches require minimal maintenance, such and inspection of the catchpit manhole for accumulation of sediment or debris and cleaned out as required. It is recommended that the catchpits be inspected no less frequently than 3 monthly intervals for the first year and thereafter at 6 monthly intervals.

4.27 The perforated pipe that runs the length of the soakaway allows for internal CCTV / jet rod access for inspection and clearance of blockages should it be required.

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Infiltration Trench Operation and Maintenance Requirements

Maintenance Schedule	Required Action	Frequency
Regular Maintenance	Remove sediment and debris from pre-treatment devices and floor of inspection tube or chamber.	Annually.
	Cleaning of gutters and any filters on downpipes.	Annually.
	Trimming any roots that may be causing blockages.	Annually, or as required.
Remedial Actions	Reconstruct soakaway and/or replace or clean void fill, if performance deteriorates or failure occurs.	As required.
	Replacement of clogged geotextile.	As required.
Monitoring	Inspect silt traps and note rate of sediment accumulation.	Monthly in the first year and then annually.
	Check soakaway to ensure emptying is occurring.	Annually.

4.28 High Level Overflows

The key maintenance requirement for the high levels overflows and control chambers will be the inspection of the units for blockages of the orifice and silt removal from sump of chamber.

4.29 The orifice flow control units have no moving parts and is self-activating, requiring minimal maintenance.

4.30 After initial installation, it is recommended that the unit be inspected monthly for three months. Thereafter the manhole chamber and control device should be inspected at least every six months to verify the condition and operation of the unit and check for blockages within the inlet of the chamber and of the flow control.
During these inspections, accumulated silts should be removed and the sump cleaned out using a conventional sump vacuum cleaner.

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5.0 Ditches

5.1 The existing ditch system is located on the western boundary of the development site adjacent to Northfields Lane and the rear gardens of the existing housing. The Northfield Lane ditch system forms part of the overall ditch systems within Eastergate & Westergate.

5.2 As adjacent and riparian land owner the ditch system and any associated culverts abutting the development will be the responsibility of Taylor Wimpey Southern Counties and their appointed Management Company.

5.3 Following completion of the development all ditch systems associated with the development will be maintained in perpetuity by the Management Company and shall ensure that it or any contractor employed by it carries out periodic maintenance in accordance with the schedules listed in this report or any requirements imposed by the Landscape Management Plan and environmental requirements.

5.4 An annual check should carried out by a suitably qualified person, to assess the condition and operation of the ditches and culverts, and the accumulation of silt/sediment.
A record of maintenance visits and remedial operations shall be maintained.

5.5 Any ditch clearing and desilting work will be carried out in accordance with a pre-agreed method statement. Such a method statement should be submitted in writing to the local authority and agreed in advance of the commencement of the works.

5.6 Prior to desilting works commencing, a suitably qualified ecologist shall be appointed to undertake an assessment of the ecological interest within the ditch and its margins. In the event that the ditch system develop particular ecological interest, then careful consideration will be given to the timing of this operation.

6.0 ACO Drains

6.1 Some permeable driveways have been fitted with ACO drains which still ultimately drain to, and soak through the sub-base.

6.2 ACO drain maintenance will comprise of the removal of large debris and litter by hand picker. Removal of the grate can be achieved by hand to access the drain gully.

6.3 During the first year of operation each ACO drain should be inspected every 3 months, and every 6 months thereafter for structural integrity and cleaned out as required.

ARUN DISTRICT COUNCIL AL/106/19/DOC

MJA CONSULTING
Civil & Structural Engineers

Monarch House • Abingdon Science Park
Barton Lane • Abingdon • Oxon • OX14 3NB

[redacted]

Hi Paul, the rest of the site is based on 'typical calculations'. See attached.

Kind regards,

Stewart Smith
Flood Risk & Drainage Engineer MSc
[redacted]
MJA CONSULTING
Civil & Structural Engineers
Ipsum Court, 24 The Quadrant, Abingdon Science Park, Abingdon, Oxfordshire, OX14 3YS
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From: Paul Cann <Paul.Cann@arun.gov.uk>
Sent: 18 March 2020 15:54
To: Stewart Smith [redacted]
Subject: RE: Westergate (Nurseries) Docs
Importance: High

ARUN DISTRICT COUNCIL AL/106/19/DOC

Second thoughts - Can u also send over the other calcs ie. those outside the re-planned area but not any that are not relevant anymore.

Ta

Paul Cann
Principal Engineer (Drainage)

Paul Cann | Principal Engineer (Drainage), Engineering Services, Arun District Council | Location: First Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF
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From: Stewart Smith [redacted]
Sent: 03 February 2020 14:38
To: Paul Cann <Paul.Cann@arun.gov.uk>
Subject: Westergate (Nurseries) Docs

Hi Paul,

Further to our phone conversation, these are the final documents agreed with Laura.

Were you only after the re-plan calcs? Or all of them?

Kind regards,

Stewart Smith
Flood Risk & Drainage Engineer

MJA CONSULTING
Civil & Structural Engineers

[redacted]on, Oxfordshire, OX14 3YS

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 64 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.309	0.309	2.1	9.6	O K
30 min Summer	99.345	0.345	2.3	12.0	O K
60 min Summer	99.366	0.366	2.5	13.5	O K
120 min Summer	99.373	0.373	2.5	14.1	O K
180 min Summer	99.368	0.368	2.5	13.6	O K
240 min Summer	99.358	0.358	2.4	12.9	O K
360 min Summer	99.340	0.340	2.3	11.6	O K
480 min Summer	99.322	0.322	2.2	10.4	O K
600 min Summer	99.305	0.305	2.1	9.4	O K
720 min Summer	99.291	0.291	2.0	8.5	O K
960 min Summer	99.265	0.265	1.8	7.1	O K
1440 min Summer	99.225	0.225	1.5	5.1	O K
2160 min Summer	99.184	0.184	1.2	3.4	O K
2880 min Summer	99.156	0.156	1.0	2.4	O K
4320 min Summer	99.120	0.120	0.8	1.5	O K
5760 min Summer	99.098	0.098	0.7	1.0	O K
7200 min Summer	99.083	0.083	0.6	0.7	O K
8640 min Summer	99.072	0.072	0.5	0.5	O K
10080 min Summer	99.064	0.064	0.4	0.4	O K
15 min Winter	99.328	0.328	2.2	10.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	17
30 min Summer	85.821	0.0	31
60 min Summer	55.250	0.0	50
120 min Summer	34.307	0.0	84
180 min Summer	25.552	0.0	118
240 min Summer	20.570	0.0	152
360 min Summer	15.173	0.0	218
480 min Summer	12.206	0.0	284
600 min Summer	10.302	0.0	348
720 min Summer	8.963	0.0	410
960 min Summer	7.189	0.0	530
1440 min Summer	5.257	0.0	768
2160 min Summer	3.836	0.0	1128
2880 min Summer	3.063	0.0	1496
4320 min Summer	2.226	0.0	2204
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5136
15 min Winter	127.204	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.368	0.368	2.5	13.7	O K
60 min Winter	99.391	0.391	2.6	15.4	O K
120 min Winter	99.396	0.396	2.7	15.8	O K
180 min Winter	99.386	0.386	2.6	15.0	O K
240 min Winter	99.372	0.372	2.5	14.0	O K
360 min Winter	99.345	0.345	2.3	12.0	O K
480 min Winter	99.319	0.319	2.1	10.3	O K
600 min Winter	99.297	0.297	2.0	8.9	O K
720 min Winter	99.277	0.277	1.9	7.7	O K
960 min Winter	99.243	0.243	1.6	6.0	O K
1440 min Winter	99.195	0.195	1.3	3.8	O K
2160 min Winter	99.149	0.149	1.0	2.3	O K
2880 min Winter	99.122	0.122	0.8	1.5	O K
4320 min Winter	99.090	0.090	0.6	0.8	O K
5760 min Winter	99.072	0.072	0.5	0.5	O K
7200 min Winter	99.060	0.060	0.4	0.4	O K
8640 min Winter	99.052	0.052	0.4	0.3	O K
10080 min Winter	99.048	0.048	0.3	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	31
60 min Winter	55.250	0.0	54
120 min Winter	34.307	0.0	90
180 min Winter	25.552	0.0	128
240 min Winter	20.570	0.0	164
360 min Winter	15.173	0.0	232
480 min Winter	12.206	0.0	300
600 min Winter	10.302	0.0	364
720 min Winter	8.963	0.0	426
960 min Winter	7.189	0.0	548
1440 min Winter	5.257	0.0	782
2160 min Winter	3.836	0.0	1144
2880 min Winter	3.063	0.0	1496
4320 min Winter	2.226	0.0	2204
5760 min Winter	1.773	0.0	2920
7200 min Winter	1.487	0.0	3600
8640 min Winter	1.289	0.0	4336
10080 min Winter	1.142	0.0	5064

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.046

Time (mins) From:	To:	Area (ha)
0	4	0.046

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	16.8
Membrane Percolation (mm/hr)	1000	Length (m)	16.8
Max Percolation (l/s)	78.4	Slope (1:X)	40.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	99.000	Cap Volume Depth (m)	0.500

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 69 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.313	0.313	1.9	8.8	O K
30 min Summer	99.350	0.350	2.1	11.0	O K
60 min Summer	99.371	0.371	2.2	12.4	O K
120 min Summer	99.379	0.379	2.3	12.9	O K
180 min Summer	99.373	0.373	2.2	12.5	O K
240 min Summer	99.363	0.363	2.2	11.9	O K
360 min Summer	99.345	0.345	2.1	10.7	O K
480 min Summer	99.327	0.327	2.0	9.6	O K
600 min Summer	99.310	0.310	1.9	8.7	O K
720 min Summer	99.295	0.295	1.8	7.9	O K
960 min Summer	99.270	0.270	1.6	6.5	O K
1440 min Summer	99.229	0.229	1.4	4.7	O K
2160 min Summer	99.188	0.188	1.1	3.2	O K
2880 min Summer	99.159	0.159	1.0	2.3	O K
4320 min Summer	99.123	0.123	0.7	1.4	O K
5760 min Summer	99.100	0.100	0.6	0.9	O K
7200 min Summer	99.085	0.085	0.5	0.6	O K
8640 min Summer	99.074	0.074	0.4	0.5	O K
10080 min Summer	99.065	0.065	0.4	0.4	O K
15 min Winter	99.332	0.332	2.0	9.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	17
30 min Summer	85.821	0.0	31
60 min Summer	55.250	0.0	50
120 min Summer	34.307	0.0	84
180 min Summer	25.552	0.0	118
240 min Summer	20.570	0.0	152
360 min Summer	15.173	0.0	218
480 min Summer	12.206	0.0	284
600 min Summer	10.302	0.0	348
720 min Summer	8.963	0.0	410
960 min Summer	7.189	0.0	530
1440 min Summer	5.257	0.0	776
2160 min Summer	3.836	0.0	1128
2880 min Summer	3.063	0.0	1496
4320 min Summer	2.226	0.0	2204
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4384
10080 min Summer	1.142	0.0	5136
15 min Winter	127.204	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.373	0.373	2.2	12.5	O K
60 min Winter	99.398	0.398	2.3	14.2	O K
120 min Winter	99.404	0.404	2.3	14.6	O K
180 min Winter	99.393	0.393	2.3	13.9	O K
240 min Winter	99.378	0.378	2.3	12.8	O K
360 min Winter	99.350	0.350	2.1	11.0	O K
480 min Winter	99.325	0.325	1.9	9.5	O K
600 min Winter	99.302	0.302	1.8	8.2	O K
720 min Winter	99.282	0.282	1.7	7.1	O K
960 min Winter	99.248	0.248	1.5	5.5	O K
1440 min Winter	99.199	0.199	1.2	3.5	O K
2160 min Winter	99.153	0.153	0.9	2.1	O K
2880 min Winter	99.124	0.124	0.7	1.4	O K
4320 min Winter	99.092	0.092	0.6	0.8	O K
5760 min Winter	99.073	0.073	0.4	0.5	O K
7200 min Winter	99.062	0.062	0.4	0.3	O K
8640 min Winter	99.053	0.053	0.3	0.3	O K
10080 min Winter	99.049	0.049	0.3	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	31
60 min Winter	55.250	0.0	56
120 min Winter	34.307	0.0	92
180 min Winter	25.552	0.0	128
240 min Winter	20.570	0.0	164
360 min Winter	15.173	0.0	234
480 min Winter	12.206	0.0	300
600 min Winter	10.302	0.0	364
720 min Winter	8.963	0.0	426
960 min Winter	7.189	0.0	550
1440 min Winter	5.257	0.0	792
2160 min Winter	3.836	0.0	1144
2880 min Winter	3.063	0.0	1496
4320 min Winter	2.226	0.0	2204
5760 min Winter	1.773	0.0	2888
7200 min Winter	1.487	0.0	3648
8640 min Winter	1.289	0.0	4272
10080 min Winter	1.142	0.0	4992

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.042

Time (mins) From:	To:	Area (ha)
0	4	0.042

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	15.0
Membrane Percolation (mm/hr)	1000	Length (m)	15.0
Max Percolation (l/s)	62.5	Slope (1:X)	40.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	99.000	Cap Volume Depth (m)	0.500

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 68 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.277	0.277	1.0	4.6	O K
30 min Summer	99.317	0.317	1.0	5.8	O K
60 min Summer	99.343	0.343	1.0	6.5	O K
120 min Summer	99.351	0.351	1.0	6.8	O K
180 min Summer	99.343	0.343	1.0	6.6	O K
240 min Summer	99.331	0.331	1.0	6.2	O K
360 min Summer	99.306	0.306	1.0	5.4	O K
480 min Summer	99.283	0.283	1.0	4.7	O K
600 min Summer	99.263	0.263	1.0	4.1	O K
720 min Summer	99.247	0.247	1.0	3.7	O K
960 min Summer	99.224	0.224	0.9	3.0	O K
1440 min Summer	99.188	0.188	0.8	2.1	O K
2160 min Summer	99.152	0.152	0.6	1.4	O K
2880 min Summer	99.128	0.128	0.5	1.0	O K
4320 min Summer	99.098	0.098	0.4	0.6	O K
5760 min Summer	99.079	0.079	0.3	0.4	O K
7200 min Summer	99.067	0.067	0.3	0.3	O K
8640 min Summer	99.058	0.058	0.2	0.2	O K
10080 min Summer	99.051	0.051	0.2	0.2	O K
15 min Winter	99.298	0.298	1.0	5.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	17
30 min Summer	85.821	0.0	31
60 min Summer	55.250	0.0	54
120 min Summer	34.307	0.0	86
180 min Summer	25.552	0.0	122
240 min Summer	20.570	0.0	156
360 min Summer	15.173	0.0	222
480 min Summer	12.206	0.0	286
600 min Summer	10.302	0.0	346
720 min Summer	8.963	0.0	404
960 min Summer	7.189	0.0	528
1440 min Summer	5.257	0.0	766
2160 min Summer	3.836	0.0	1124
2880 min Summer	3.063	0.0	1472
4320 min Summer	2.226	0.0	2204
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5136
15 min Winter	127.204	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.345	0.345	1.0	6.6	O K
60 min Winter	99.378	0.378	1.0	7.6	O K
120 min Winter	99.384	0.384	1.0	7.8	O K
180 min Winter	99.371	0.371	1.0	7.4	O K
240 min Winter	99.351	0.351	1.0	6.8	O K
360 min Winter	99.312	0.312	1.0	5.6	O K
480 min Winter	99.277	0.277	1.0	4.6	O K
600 min Winter	99.250	0.250	1.0	3.8	O K
720 min Winter	99.232	0.232	0.9	3.2	O K
960 min Winter	99.202	0.202	0.8	2.4	O K
1440 min Winter	99.159	0.159	0.6	1.5	O K
2160 min Winter	99.121	0.121	0.5	0.9	O K
2880 min Winter	99.098	0.098	0.4	0.6	O K
4320 min Winter	99.072	0.072	0.3	0.3	O K
5760 min Winter	99.058	0.058	0.2	0.2	O K
7200 min Winter	99.049	0.049	0.2	0.1	O K
8640 min Winter	99.046	0.046	0.2	0.1	O K
10080 min Winter	99.043	0.043	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	31
60 min Winter	55.250	0.0	58
120 min Winter	34.307	0.0	94
180 min Winter	25.552	0.0	132
240 min Winter	20.570	0.0	170
360 min Winter	15.173	0.0	238
480 min Winter	12.206	0.0	302
600 min Winter	10.302	0.0	358
720 min Winter	8.963	0.0	420
960 min Winter	7.189	0.0	540
1440 min Winter	5.257	0.0	780
2160 min Winter	3.836	0.0	1128
2880 min Winter	3.063	0.0	1472
4320 min Winter	2.226	0.0	2200
5760 min Winter	1.773	0.0	2936
7200 min Winter	1.487	0.0	3664
8640 min Winter	1.289	0.0	4368
10080 min Winter	1.142	0.0	5128

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.022

Time (mins) From:	To:	Area (ha)
0	4	0.022

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	27.8	Slope (1:X)	40.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	99.000	Cap Volume Depth (m)	0.500

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 72 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.342	0.342	2.9	15.0	O K
30 min Summer	99.384	0.384	3.3	18.9	O K
60 min Summer	99.408	0.408	3.5	21.4	O K
120 min Summer	99.418	0.418	3.6	22.4	O K
180 min Summer	99.414	0.414	3.5	22.0	O K
240 min Summer	99.404	0.404	3.5	21.0	O K
360 min Summer	99.385	0.385	3.3	19.1	O K
480 min Summer	99.367	0.367	3.1	17.3	O K
600 min Summer	99.350	0.350	3.0	15.7	O K
720 min Summer	99.334	0.334	2.9	14.3	O K
960 min Summer	99.307	0.307	2.6	12.1	O K
1440 min Summer	99.263	0.263	2.3	8.9	O K
2160 min Summer	99.217	0.217	1.9	6.1	O K
2880 min Summer	99.185	0.185	1.6	4.4	O K
4320 min Summer	99.144	0.144	1.2	2.7	O K
5760 min Summer	99.118	0.118	1.0	1.8	O K
7200 min Summer	99.100	0.100	0.9	1.3	O K
8640 min Summer	99.087	0.087	0.7	1.0	O K
10080 min Summer	99.077	0.077	0.7	0.8	O K
15 min Winter	99.363	0.363	3.1	17.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	17
30 min Summer	85.821	0.0	31
60 min Summer	55.250	0.0	52
120 min Summer	34.307	0.0	84
180 min Summer	25.552	0.0	120
240 min Summer	20.570	0.0	154
360 min Summer	15.173	0.0	220
480 min Summer	12.206	0.0	286
600 min Summer	10.302	0.0	350
720 min Summer	8.963	0.0	412
960 min Summer	7.189	0.0	538
1440 min Summer	5.257	0.0	780
2160 min Summer	3.836	0.0	1144
2880 min Summer	3.063	0.0	1496
4320 min Summer	2.226	0.0	2204
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5136
15 min Winter	127.204	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.409	0.409	3.5	21.5	O K
60 min Winter	99.436	0.436	3.7	24.4	O K
120 min Winter	99.444	0.444	3.8	25.3	O K
180 min Winter	99.436	0.436	3.7	24.4	O K
240 min Winter	99.422	0.422	3.6	22.8	O K
360 min Winter	99.394	0.394	3.4	19.9	O K
480 min Winter	99.367	0.367	3.1	17.3	O K
600 min Winter	99.343	0.343	2.9	15.1	O K
720 min Winter	99.322	0.322	2.8	13.3	O K
960 min Winter	99.285	0.285	2.4	10.5	O K
1440 min Winter	99.231	0.231	2.0	6.9	O K
2160 min Winter	99.179	0.179	1.5	4.1	O K
2880 min Winter	99.147	0.147	1.3	2.8	O K
4320 min Winter	99.108	0.108	0.9	1.5	O K
5760 min Winter	99.087	0.087	0.7	1.0	O K
7200 min Winter	99.073	0.073	0.6	0.7	O K
8640 min Winter	99.063	0.063	0.5	0.5	O K
10080 min Winter	99.056	0.056	0.5	0.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	31
60 min Winter	55.250	0.0	56
120 min Winter	34.307	0.0	92
180 min Winter	25.552	0.0	128
240 min Winter	20.570	0.0	166
360 min Winter	15.173	0.0	236
480 min Winter	12.206	0.0	304
600 min Winter	10.302	0.0	368
720 min Winter	8.963	0.0	432
960 min Winter	7.189	0.0	558
1440 min Winter	5.257	0.0	794
2160 min Winter	3.836	0.0	1148
2880 min Winter	3.063	0.0	1500
4320 min Winter	2.226	0.0	2204
5760 min Winter	1.773	0.0	2936
7200 min Winter	1.487	0.0	3672
8640 min Winter	1.289	0.0	4360
10080 min Winter	1.142	0.0	5120

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.071

Time (mins) From:	To:	Area (ha)
0	4	0.071

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	21.4
Membrane Percolation (mm/hr)	1000	Length (m)	21.4
Max Percolation (l/s)	127.2	Slope (1:X)	40.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	99.000	Cap Volume Depth (m)	0.500

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 53 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.266	0.266	1.6	6.4	O K
30 min Summer	99.296	0.296	1.8	7.9	O K
60 min Summer	99.312	0.312	1.9	8.8	O K
120 min Summer	99.316	0.316	1.9	9.0	O K
180 min Summer	99.309	0.309	1.9	8.6	O K
240 min Summer	99.299	0.299	1.8	8.1	O K
360 min Summer	99.281	0.281	1.7	7.1	O K
480 min Summer	99.264	0.264	1.6	6.3	O K
600 min Summer	99.249	0.249	1.5	5.6	O K
720 min Summer	99.236	0.236	1.4	5.0	O K
960 min Summer	99.213	0.213	1.3	4.1	O K
1440 min Summer	99.179	0.179	1.1	2.9	O K
2160 min Summer	99.144	0.144	0.9	1.9	O K
2880 min Summer	99.121	0.121	0.7	1.3	O K
4320 min Summer	99.092	0.092	0.6	0.8	O K
5760 min Summer	99.074	0.074	0.4	0.5	O K
7200 min Summer	99.063	0.063	0.4	0.4	O K
8640 min Summer	99.054	0.054	0.3	0.3	O K
10080 min Summer	99.049	0.049	0.3	0.2	O K
15 min Winter	99.283	0.283	1.7	7.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	17
30 min Summer	85.821	0.0	30
60 min Summer	55.250	0.0	48
120 min Summer	34.307	0.0	82
180 min Summer	25.552	0.0	116
240 min Summer	20.570	0.0	150
360 min Summer	15.173	0.0	216
480 min Summer	12.206	0.0	280
600 min Summer	10.302	0.0	342
720 min Summer	8.963	0.0	404
960 min Summer	7.189	0.0	522
1440 min Summer	5.257	0.0	764
2160 min Summer	3.836	0.0	1124
2880 min Summer	3.063	0.0	1472
4320 min Summer	2.226	0.0	2204
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5024
15 min Winter	127.204	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.316	0.316	1.9	9.0	O K
60 min Winter	99.333	0.333	2.0	10.0	O K
120 min Winter	99.334	0.334	2.0	10.0	O K
180 min Winter	99.323	0.323	1.9	9.4	O K
240 min Winter	99.309	0.309	1.9	8.6	O K
360 min Winter	99.282	0.282	1.7	7.2	O K
480 min Winter	99.258	0.258	1.5	6.0	O K
600 min Winter	99.238	0.238	1.4	5.1	O K
720 min Winter	99.220	0.220	1.3	4.4	O K
960 min Winter	99.191	0.191	1.1	3.3	O K
1440 min Winter	99.150	0.150	0.9	2.0	O K
2160 min Winter	99.114	0.114	0.7	1.2	O K
2880 min Winter	99.092	0.092	0.6	0.8	O K
4320 min Winter	99.068	0.068	0.4	0.4	O K
5760 min Winter	99.054	0.054	0.3	0.3	O K
7200 min Winter	99.048	0.048	0.3	0.2	O K
8640 min Winter	99.045	0.045	0.2	0.2	O K
10080 min Winter	99.042	0.042	0.2	0.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	30
60 min Winter	55.250	0.0	50
120 min Winter	34.307	0.0	88
180 min Winter	25.552	0.0	126
240 min Winter	20.570	0.0	160
360 min Winter	15.173	0.0	228
480 min Winter	12.206	0.0	294
600 min Winter	10.302	0.0	356
720 min Winter	8.963	0.0	418
960 min Winter	7.189	0.0	540
1440 min Winter	5.257	0.0	778
2160 min Winter	3.836	0.0	1124
2880 min Winter	3.063	0.0	1472
4320 min Winter	2.226	0.0	2204
5760 min Winter	1.773	0.0	2920
7200 min Winter	1.487	0.0	3624
8640 min Winter	1.289	0.0	4360
10080 min Winter	1.142	0.0	5120

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.031

Time (mins) From:	To:	Area (ha)
0	4	0.031

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	15.0
Membrane Percolation (mm/hr)	1000	Length (m)	15.0
Max Percolation (l/s)	62.5	Slope (1:X)	40.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	99.000	Cap Volume Depth (m)	0.500

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 63 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.276	0.276	1.3	5.6	O K
30 min Summer	99.307	0.307	1.5	6.9	O K
60 min Summer	99.326	0.326	1.5	7.8	O K
120 min Summer	99.332	0.332	1.5	8.0	O K
180 min Summer	99.324	0.324	1.5	7.7	O K
240 min Summer	99.313	0.313	1.5	7.2	O K
360 min Summer	99.294	0.294	1.4	6.3	O K
480 min Summer	99.277	0.277	1.4	5.6	O K
600 min Summer	99.262	0.262	1.3	5.0	O K
720 min Summer	99.248	0.248	1.2	4.5	O K
960 min Summer	99.225	0.225	1.1	3.7	O K
1440 min Summer	99.189	0.189	0.9	2.6	O K
2160 min Summer	99.153	0.153	0.7	1.7	O K
2880 min Summer	99.129	0.129	0.6	1.2	O K
4320 min Summer	99.098	0.098	0.5	0.7	O K
5760 min Summer	99.080	0.080	0.4	0.5	O K
7200 min Summer	99.067	0.067	0.3	0.3	O K
8640 min Summer	99.058	0.058	0.3	0.2	O K
10080 min Summer	99.052	0.052	0.3	0.2	O K
15 min Winter	99.293	0.293	1.4	6.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	17
30 min Summer	85.821	0.0	30
60 min Summer	55.250	0.0	50
120 min Summer	34.307	0.0	84
180 min Summer	25.552	0.0	118
240 min Summer	20.570	0.0	150
360 min Summer	15.173	0.0	216
480 min Summer	12.206	0.0	280
600 min Summer	10.302	0.0	344
720 min Summer	8.963	0.0	404
960 min Summer	7.189	0.0	528
1440 min Summer	5.257	0.0	766
2160 min Summer	3.836	0.0	1124
2880 min Summer	3.063	0.0	1472
4320 min Summer	2.226	0.0	2204
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3648
8640 min Summer	1.289	0.0	4392
10080 min Summer	1.142	0.0	5136
15 min Winter	127.204	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.330	0.330	1.5	7.9	O K
60 min Winter	99.352	0.352	1.5	8.9	O K
120 min Winter	99.356	0.356	1.5	9.1	O K
180 min Winter	99.343	0.343	1.5	8.5	O K
240 min Winter	99.326	0.326	1.5	7.7	O K
360 min Winter	99.296	0.296	1.4	6.4	O K
480 min Winter	99.272	0.272	1.3	5.4	O K
600 min Winter	99.251	0.251	1.2	4.6	O K
720 min Winter	99.233	0.233	1.1	4.0	O K
960 min Winter	99.203	0.203	1.0	3.0	O K
1440 min Winter	99.160	0.160	0.8	1.9	O K
2160 min Winter	99.122	0.122	0.6	1.1	O K
2880 min Winter	99.099	0.099	0.5	0.7	O K
4320 min Winter	99.073	0.073	0.4	0.4	O K
5760 min Winter	99.058	0.058	0.3	0.2	O K
7200 min Winter	99.049	0.049	0.2	0.2	O K
8640 min Winter	99.046	0.046	0.2	0.2	O K
10080 min Winter	99.043	0.043	0.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	31
60 min Winter	55.250	0.0	56
120 min Winter	34.307	0.0	90
180 min Winter	25.552	0.0	128
240 min Winter	20.570	0.0	164
360 min Winter	15.173	0.0	230
480 min Winter	12.206	0.0	294
600 min Winter	10.302	0.0	358
720 min Winter	8.963	0.0	420
960 min Winter	7.189	0.0	540
1440 min Winter	5.257	0.0	780
2160 min Winter	3.836	0.0	1128
2880 min Winter	3.063	0.0	1476
4320 min Winter	2.226	0.0	2192
5760 min Winter	1.773	0.0	2936
7200 min Winter	1.487	0.0	3672
8640 min Winter	1.289	0.0	4336
10080 min Winter	1.142	0.0	5120

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.027

Time (mins) From:	To:	Area (ha)
0	4	0.027

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	12.2
Membrane Percolation (mm/hr)	1000	Length (m)	12.2
Max Percolation (l/s)	41.3	Slope (1:X)	40.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	99.000	Cap Volume Depth (m)	0.500

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 66 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.318	0.318	2.2	10.5	O K
30 min Summer	99.356	0.356	2.5	13.1	O K
60 min Summer	99.378	0.378	2.6	14.8	O K
120 min Summer	99.386	0.386	2.7	15.4	O K
180 min Summer	99.380	0.380	2.6	15.0	O K
240 min Summer	99.371	0.371	2.6	14.3	O K
360 min Summer	99.352	0.352	2.4	12.9	O K
480 min Summer	99.334	0.334	2.3	11.6	O K
600 min Summer	99.317	0.317	2.2	10.5	O K
720 min Summer	99.302	0.302	2.1	9.5	O K
960 min Summer	99.276	0.276	1.9	7.9	O K
1440 min Summer	99.236	0.236	1.6	5.8	O K
2160 min Summer	99.193	0.193	1.3	3.9	O K
2880 min Summer	99.164	0.164	1.1	2.8	O K
4320 min Summer	99.127	0.127	0.9	1.7	O K
5760 min Summer	99.103	0.103	0.7	1.1	O K
7200 min Summer	99.087	0.087	0.6	0.8	O K
8640 min Summer	99.076	0.076	0.5	0.6	O K
10080 min Summer	99.067	0.067	0.5	0.5	O K
15 min Winter	99.338	0.338	2.3	11.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	17
30 min Summer	85.821	0.0	31
60 min Summer	55.250	0.0	50
120 min Summer	34.307	0.0	84
180 min Summer	25.552	0.0	118
240 min Summer	20.570	0.0	152
360 min Summer	15.173	0.0	220
480 min Summer	12.206	0.0	284
600 min Summer	10.302	0.0	348
720 min Summer	8.963	0.0	410
960 min Summer	7.189	0.0	532
1440 min Summer	5.257	0.0	778
2160 min Summer	3.836	0.0	1128
2880 min Summer	3.063	0.0	1496
4320 min Summer	2.226	0.0	2204
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5136
15 min Winter	127.204	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.379	0.379	2.6	14.9	O K
60 min Winter	99.403	0.403	2.8	16.9	O K
120 min Winter	99.409	0.409	2.8	17.4	O K
180 min Winter	99.400	0.400	2.8	16.6	O K
240 min Winter	99.386	0.386	2.7	15.4	O K
360 min Winter	99.358	0.358	2.5	13.3	O K
480 min Winter	99.332	0.332	2.3	11.5	O K
600 min Winter	99.309	0.309	2.1	9.9	O K
720 min Winter	99.289	0.289	2.0	8.7	O K
960 min Winter	99.254	0.254	1.8	6.7	O K
1440 min Winter	99.204	0.204	1.4	4.3	O K
2160 min Winter	99.157	0.157	1.1	2.6	O K
2880 min Winter	99.128	0.128	0.9	1.7	O K
4320 min Winter	99.095	0.095	0.7	0.9	O K
5760 min Winter	99.076	0.076	0.5	0.6	O K
7200 min Winter	99.064	0.064	0.4	0.4	O K
8640 min Winter	99.055	0.055	0.4	0.3	O K
10080 min Winter	99.050	0.050	0.3	0.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	31
60 min Winter	55.250	0.0	56
120 min Winter	34.307	0.0	90
180 min Winter	25.552	0.0	128
240 min Winter	20.570	0.0	164
360 min Winter	15.173	0.0	234
480 min Winter	12.206	0.0	300
600 min Winter	10.302	0.0	364
720 min Winter	8.963	0.0	428
960 min Winter	7.189	0.0	550
1440 min Winter	5.257	0.0	792
2160 min Winter	3.836	0.0	1144
2880 min Winter	3.063	0.0	1496
4320 min Winter	2.226	0.0	2204
5760 min Winter	1.773	0.0	2936
7200 min Winter	1.487	0.0	3664
8640 min Winter	1.289	0.0	4336
10080 min Winter	1.142	0.0	5120

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.050

Time (mins) From:	To:	Area (ha)
0	4	0.050

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	17.3
Membrane Percolation (mm/hr)	1000	Length (m)	17.3
Max Percolation (l/s)	83.1	Slope (1:X)	40.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	99.000	Cap Volume Depth (m)	0.500

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 67 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.319	0.319	2.2	10.5	O K
30 min Summer	99.357	0.357	2.5	13.2	O K
60 min Summer	99.379	0.379	2.6	14.8	O K
120 min Summer	99.387	0.387	2.7	15.4	O K
180 min Summer	99.382	0.382	2.6	15.0	O K
240 min Summer	99.372	0.372	2.6	14.3	O K
360 min Summer	99.353	0.353	2.4	12.9	O K
480 min Summer	99.335	0.335	2.3	11.6	O K
600 min Summer	99.319	0.319	2.2	10.5	O K
720 min Summer	99.304	0.304	2.1	9.5	O K
960 min Summer	99.277	0.277	1.9	7.9	O K
1440 min Summer	99.237	0.237	1.6	5.8	O K
2160 min Summer	99.194	0.194	1.3	3.9	O K
2880 min Summer	99.165	0.165	1.1	2.8	O K
4320 min Summer	99.127	0.127	0.9	1.7	O K
5760 min Summer	99.104	0.104	0.7	1.1	O K
7200 min Summer	99.088	0.088	0.6	0.8	O K
8640 min Summer	99.076	0.076	0.5	0.6	O K
10080 min Summer	99.068	0.068	0.5	0.5	O K
15 min Winter	99.339	0.339	2.3	11.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	17
30 min Summer	85.821	0.0	31
60 min Summer	55.250	0.0	50
120 min Summer	34.307	0.0	84
180 min Summer	25.552	0.0	118
240 min Summer	20.570	0.0	152
360 min Summer	15.173	0.0	220
480 min Summer	12.206	0.0	284
600 min Summer	10.302	0.0	348
720 min Summer	8.963	0.0	412
960 min Summer	7.189	0.0	532
1440 min Summer	5.257	0.0	778
2160 min Summer	3.836	0.0	1128
2880 min Summer	3.063	0.0	1496
4320 min Summer	2.226	0.0	2204
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5136
15 min Winter	127.204	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.381	0.381	2.6	15.0	O K
60 min Winter	99.405	0.405	2.8	16.9	O K
120 min Winter	99.410	0.410	2.8	17.4	O K
180 min Winter	99.401	0.401	2.8	16.6	O K
240 min Winter	99.387	0.387	2.7	15.5	O K
360 min Winter	99.359	0.359	2.5	13.3	O K
480 min Winter	99.334	0.334	2.3	11.5	O K
600 min Winter	99.311	0.311	2.1	10.0	O K
720 min Winter	99.290	0.290	2.0	8.7	O K
960 min Winter	99.256	0.256	1.8	6.7	O K
1440 min Winter	99.205	0.205	1.4	4.4	O K
2160 min Winter	99.158	0.158	1.1	2.6	O K
2880 min Winter	99.129	0.129	0.9	1.7	O K
4320 min Winter	99.095	0.095	0.7	0.9	O K
5760 min Winter	99.076	0.076	0.5	0.6	O K
7200 min Winter	99.064	0.064	0.4	0.4	O K
8640 min Winter	99.055	0.055	0.4	0.3	O K
10080 min Winter	99.050	0.050	0.3	0.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	31
60 min Winter	55.250	0.0	56
120 min Winter	34.307	0.0	90
180 min Winter	25.552	0.0	128
240 min Winter	20.570	0.0	164
360 min Winter	15.173	0.0	234
480 min Winter	12.206	0.0	300
600 min Winter	10.302	0.0	366
720 min Winter	8.963	0.0	428
960 min Winter	7.189	0.0	550
1440 min Winter	5.257	0.0	792
2160 min Winter	3.836	0.0	1144
2880 min Winter	3.063	0.0	1500
4320 min Winter	2.226	0.0	2204
5760 min Winter	1.773	0.0	2936
7200 min Winter	1.487	0.0	3672
8640 min Winter	1.289	0.0	4400
10080 min Winter	1.142	0.0	5064

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.050

Time (mins) From:	To:	Area (ha)
0	4	0.050

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	17.2
Membrane Percolation (mm/hr)	1000	Length (m)	17.2
Max Percolation (l/s)	82.2	Slope (1:X)	40.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	99.000	Cap Volume Depth (m)	0.500

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 64 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.310	0.310	5.0	23.0	O K
30 min Summer	99.347	0.347	5.5	28.8	O K
60 min Summer	99.368	0.368	5.9	32.4	O K
120 min Summer	99.375	0.375	6.0	33.7	O K
180 min Summer	99.369	0.369	5.9	32.7	O K
240 min Summer	99.360	0.360	5.7	31.0	O K
360 min Summer	99.341	0.341	5.4	27.8	O K
480 min Summer	99.323	0.323	5.2	25.0	O K
600 min Summer	99.307	0.307	4.9	22.6	O K
720 min Summer	99.292	0.292	4.7	20.4	O K
960 min Summer	99.267	0.267	4.3	17.0	O K
1440 min Summer	99.227	0.227	3.6	12.3	O K
2160 min Summer	99.185	0.185	3.0	8.2	O K
2880 min Summer	99.157	0.157	2.5	5.9	O K
4320 min Summer	99.121	0.121	1.9	3.5	O K
5760 min Summer	99.099	0.099	1.6	2.3	O K
7200 min Summer	99.083	0.083	1.3	1.7	O K
8640 min Summer	99.073	0.073	1.2	1.3	O K
10080 min Summer	99.064	0.064	1.0	1.0	O K
15 min Winter	99.330	0.330	5.3	26.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	17
30 min Summer	85.821	0.0	31
60 min Summer	55.250	0.0	50
120 min Summer	34.307	0.0	84
180 min Summer	25.552	0.0	118
240 min Summer	20.570	0.0	152
360 min Summer	15.173	0.0	218
480 min Summer	12.206	0.0	284
600 min Summer	10.302	0.0	348
720 min Summer	8.963	0.0	410
960 min Summer	7.189	0.0	530
1440 min Summer	5.257	0.0	768
2160 min Summer	3.836	0.0	1128
2880 min Summer	3.063	0.0	1496
4320 min Summer	2.226	0.0	2204
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5136
15 min Winter	127.204	0.0	17

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Summary of Results for 100 year Return Period (+40%)

	Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30	min Winter	99.370	0.370	5.9	32.7	O K
60	min Winter	99.392	0.392	6.3	36.9	O K
120	min Winter	99.398	0.398	6.3	37.9	O K
180	min Winter	99.388	0.388	6.2	36.0	O K
240	min Winter	99.374	0.374	6.0	33.5	O K
360	min Winter	99.346	0.346	5.5	28.7	O K
480	min Winter	99.321	0.321	5.1	24.6	O K
600	min Winter	99.298	0.298	4.8	21.3	O K
720	min Winter	99.278	0.278	4.4	18.5	O K
960	min Winter	99.245	0.245	3.9	14.3	O K
1440	min Winter	99.196	0.196	3.1	9.2	O K
2160	min Winter	99.150	0.150	2.4	5.4	O K
2880	min Winter	99.122	0.122	2.0	3.6	O K
4320	min Winter	99.090	0.090	1.4	1.9	O K
5760	min Winter	99.072	0.072	1.2	1.2	O K
7200	min Winter	99.061	0.061	1.0	0.9	O K
8640	min Winter	99.053	0.053	0.8	0.7	O K
10080	min Winter	99.048	0.048	0.7	0.6	O K

	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30	min Winter	85.821	0.0	31
60	min Winter	55.250	0.0	54
120	min Winter	34.307	0.0	90
180	min Winter	25.552	0.0	128
240	min Winter	20.570	0.0	164
360	min Winter	15.173	0.0	234
480	min Winter	12.206	0.0	300
600	min Winter	10.302	0.0	364
720	min Winter	8.963	0.0	426
960	min Winter	7.189	0.0	550
1440	min Winter	5.257	0.0	792
2160	min Winter	3.836	0.0	1144
2880	min Winter	3.063	0.0	1496
4320	min Winter	2.226	0.0	2204
5760	min Winter	1.773	0.0	2912
7200	min Winter	1.487	0.0	3616
8640	min Winter	1.289	0.0	4328
10080	min Winter	1.142	0.0	5056

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.110

Time (mins) From:	To:	Area (ha)
0	4	0.110

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	8.4
Membrane Percolation (mm/hr)	1000	Length (m)	95.2
Max Percolation (l/s)	222.1	Slope (1:X)	190.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	99.000	Cap Volume Depth (m)	0.500

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 190 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.377	0.377	1.3	17.9	O K
30 min Summer	99.418	0.418	1.5	23.3	O K
60 min Summer	99.450	0.450	1.7	28.3	O K
120 min Summer	99.468	0.468	1.9	31.4	O K
180 min Summer	99.472	0.472	1.9	32.1	O K
240 min Summer	99.472	0.472	1.9	32.2	O K
360 min Summer	99.471	0.471	1.9	32.0	O K
480 min Summer	99.467	0.467	1.9	31.3	O K
600 min Summer	99.462	0.462	1.8	30.4	O K
720 min Summer	99.456	0.456	1.8	29.4	O K
960 min Summer	99.445	0.445	1.7	27.5	O K
1440 min Summer	99.422	0.422	1.6	23.9	O K
2160 min Summer	99.393	0.393	1.4	19.9	O K
2880 min Summer	99.370	0.370	1.2	16.9	O K
4320 min Summer	99.332	0.332	1.0	12.8	O K
5760 min Summer	99.304	0.304	0.9	10.2	O K
7200 min Summer	99.281	0.281	0.8	8.4	O K
8640 min Summer	99.263	0.263	0.7	7.1	O K
10080 min Summer	99.247	0.247	0.6	6.1	O K
15 min Winter	99.395	0.395	1.4	20.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	134.746	0.0	18
30 min Summer	90.474	0.0	33
60 min Summer	57.877	0.0	62
120 min Summer	35.655	0.0	118
180 min Summer	26.413	0.0	146
240 min Summer	21.237	0.0	176
360 min Summer	15.626	0.0	244
480 min Summer	12.548	0.0	314
600 min Summer	10.575	0.0	382
720 min Summer	9.191	0.0	450
960 min Summer	7.358	0.0	586
1440 min Summer	5.368	0.0	840
2160 min Summer	3.907	0.0	1216
2880 min Summer	3.115	0.0	1588
4320 min Summer	2.259	0.0	2332
5760 min Summer	1.796	0.0	3056
7200 min Summer	1.506	0.0	3752
8640 min Summer	1.304	0.0	4496
10080 min Summer	1.154	0.0	5240
15 min Winter	134.746	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.437	0.437	1.7	26.3	O K
60 min Winter	99.471	0.471	1.9	31.9	O K
120 min Winter	99.491	0.491	2.0	35.7	O K
180 min Winter	99.494	0.494	2.0	36.3	O K
240 min Winter	99.494	0.494	2.0	36.4	O K
360 min Winter	99.491	0.491	2.0	35.7	O K
480 min Winter	99.484	0.484	2.0	34.4	O K
600 min Winter	99.476	0.476	1.9	33.0	O K
720 min Winter	99.468	0.468	1.9	31.5	O K
960 min Winter	99.451	0.451	1.7	28.6	O K
1440 min Winter	99.420	0.420	1.5	23.7	O K
2160 min Winter	99.382	0.382	1.3	18.4	O K
2880 min Winter	99.351	0.351	1.1	14.8	O K
4320 min Winter	99.305	0.305	0.9	10.3	O K
5760 min Winter	99.271	0.271	0.7	7.7	O K
7200 min Winter	99.246	0.246	0.6	6.0	O K
8640 min Winter	99.227	0.227	0.6	4.9	O K
10080 min Winter	99.211	0.211	0.5	4.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	90.474	0.0	32
60 min Winter	57.877	0.0	60
120 min Winter	35.655	0.0	116
180 min Winter	26.413	0.0	152
240 min Winter	21.237	0.0	186
360 min Winter	15.626	0.0	264
480 min Winter	12.548	0.0	338
600 min Winter	10.575	0.0	412
720 min Winter	9.191	0.0	484
960 min Winter	7.358	0.0	624
1440 min Winter	5.368	0.0	892
2160 min Winter	3.907	0.0	1276
2880 min Winter	3.115	0.0	1644
4320 min Winter	2.259	0.0	2376
5760 min Winter	1.796	0.0	3104
7200 min Winter	1.506	0.0	3816
8640 min Winter	1.304	0.0	4496
10080 min Winter	1.154	0.0	5240

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Rainfall Details

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)	20.400	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.074

Time (mins) From:	To:	Area (ha)
0	4	0.074

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Model Details

Storage is Online Cover Level (m) 100.000

Swale Structure

Infiltration Coefficient Base (m/hr)	0.07200	Length (m)	115.0
Infiltration Coefficient Side (m/hr)	0.07200	Side Slope (1:X)	3.0
Safety Factor	2.0	Slope (1:X)	200.0
Porosity	1.00	Cap Volume Depth (m)	0.000
Invert Level (m)	99.000	Cap Infiltration Depth (m)	0.000
Base Width (m)	0.5		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 96 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.094	0.094	1.0	6.9	O K
30 min Summer	99.117	0.117	1.1	8.9	O K
60 min Summer	99.133	0.133	1.1	10.4	O K
120 min Summer	99.140	0.140	1.2	11.0	O K
180 min Summer	99.140	0.140	1.2	11.0	O K
240 min Summer	99.137	0.137	1.2	10.7	O K
360 min Summer	99.129	0.129	1.1	10.0	O K
480 min Summer	99.121	0.121	1.1	9.3	O K
600 min Summer	99.113	0.113	1.1	8.6	O K
720 min Summer	99.105	0.105	1.0	7.9	O K
960 min Summer	99.091	0.091	1.0	6.7	O K
1440 min Summer	99.069	0.069	0.9	5.0	O K
2160 min Summer	99.050	0.050	0.8	3.5	O K
2880 min Summer	99.042	0.042	0.7	2.9	O K
4320 min Summer	99.033	0.033	0.5	2.2	O K
5760 min Summer	99.027	0.027	0.4	1.8	O K
7200 min Summer	99.023	0.023	0.4	1.6	O K
8640 min Summer	99.020	0.020	0.3	1.4	O K
10080 min Summer	99.018	0.018	0.3	1.2	O K
15 min Winter	99.104	0.104	1.0	7.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	134.746	0.0	18
30 min Summer	90.474	0.0	32
60 min Summer	57.877	0.0	60
120 min Summer	35.655	0.0	92
180 min Summer	26.413	0.0	126
240 min Summer	21.237	0.0	160
360 min Summer	15.626	0.0	228
480 min Summer	12.548	0.0	296
600 min Summer	10.575	0.0	362
720 min Summer	9.191	0.0	426
960 min Summer	7.358	0.0	550
1440 min Summer	5.368	0.0	792
2160 min Summer	3.907	0.0	1124
2880 min Summer	3.115	0.0	1496
4320 min Summer	2.259	0.0	2204
5760 min Summer	1.796	0.0	2936
7200 min Summer	1.506	0.0	3672
8640 min Summer	1.304	0.0	4400
10080 min Summer	1.154	0.0	5120
15 min Winter	134.746	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.130	0.130	1.1	10.1	O K
60 min Winter	99.149	0.149	1.2	11.8	O K
120 min Winter	99.156	0.156	1.2	12.5	O K
180 min Winter	99.154	0.154	1.2	12.3	O K
240 min Winter	99.150	0.150	1.2	11.9	O K
360 min Winter	99.138	0.138	1.2	10.8	O K
480 min Winter	99.125	0.125	1.1	9.7	O K
600 min Winter	99.113	0.113	1.1	8.6	O K
720 min Winter	99.102	0.102	1.0	7.6	O K
960 min Winter	99.082	0.082	1.0	6.0	O K
1440 min Winter	99.054	0.054	0.9	3.8	O K
2160 min Winter	99.041	0.041	0.7	2.8	O K
2880 min Winter	99.033	0.033	0.5	2.3	O K
4320 min Winter	99.025	0.025	0.4	1.7	O K
5760 min Winter	99.020	0.020	0.3	1.4	O K
7200 min Winter	99.017	0.017	0.3	1.1	O K
8640 min Winter	99.015	0.015	0.2	1.0	O K
10080 min Winter	99.013	0.013	0.2	0.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	90.474	0.0	31
60 min Winter	57.877	0.0	60
120 min Winter	35.655	0.0	98
180 min Winter	26.413	0.0	136
240 min Winter	21.237	0.0	174
360 min Winter	15.626	0.0	248
480 min Winter	12.548	0.0	318
600 min Winter	10.575	0.0	386
720 min Winter	9.191	0.0	450
960 min Winter	7.358	0.0	576
1440 min Winter	5.368	0.0	794
2160 min Winter	3.907	0.0	1128
2880 min Winter	3.115	0.0	1500
4320 min Winter	2.259	0.0	2224
5760 min Winter	1.796	0.0	2936
7200 min Winter	1.506	0.0	3640
8640 min Winter	1.304	0.0	4416
10080 min Winter	1.154	0.0	5136

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Rainfall Details

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)	20.400	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.030

Time (mins) From:	To:	Area (ha)
0	4	0.030

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Model Details

Storage is Online Cover Level (m) 99.600

Infiltration Basin Structure

Invert Level (m) 99.000 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.07200 Porosity 1.00
Infiltration Coefficient Side (m/hr) 0.07200

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	66.0	0.200	103.0	0.400	143.0	0.600	743.0
0.100	84.0	0.300	122.0	0.500	162.0		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 217 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.330	0.330	0.4	5.6	O K
30 min Summer	99.374	0.374	0.4	7.3	O K
60 min Summer	99.411	0.411	0.5	8.8	O K
120 min Summer	99.433	0.433	0.5	9.9	O K
180 min Summer	99.437	0.437	0.5	10.1	O K
240 min Summer	99.438	0.438	0.5	10.1	O K
360 min Summer	99.436	0.436	0.5	10.1	O K
480 min Summer	99.432	0.432	0.5	9.8	O K
600 min Summer	99.426	0.426	0.5	9.5	O K
720 min Summer	99.419	0.419	0.5	9.2	O K
960 min Summer	99.405	0.405	0.5	8.6	O K
1440 min Summer	99.379	0.379	0.4	7.5	O K
2160 min Summer	99.345	0.345	0.4	6.1	O K
2880 min Summer	99.317	0.317	0.4	5.1	O K
4320 min Summer	99.274	0.274	0.3	3.7	O K
5760 min Summer	99.242	0.242	0.3	2.8	O K
7200 min Summer	99.218	0.218	0.2	2.2	O K
8640 min Summer	99.199	0.199	0.2	1.8	O K
10080 min Summer	99.186	0.186	0.2	1.5	O K
15 min Winter	99.348	0.348	0.4	6.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	134.746	0.0	18
30 min Summer	90.474	0.0	33
60 min Summer	57.877	0.0	62
120 min Summer	35.655	0.0	120
180 min Summer	26.413	0.0	154
240 min Summer	21.237	0.0	186
360 min Summer	15.626	0.0	252
480 min Summer	12.548	0.0	320
600 min Summer	10.575	0.0	388
720 min Summer	9.191	0.0	458
960 min Summer	7.358	0.0	594
1440 min Summer	5.368	0.0	854
2160 min Summer	3.907	0.0	1236
2880 min Summer	3.115	0.0	1612
4320 min Summer	2.259	0.0	2332
5760 min Summer	1.796	0.0	3056
7200 min Summer	1.506	0.0	3752
8640 min Summer	1.304	0.0	4488
10080 min Summer	1.154	0.0	5144
15 min Winter	134.746	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.396	0.396	0.5	8.2	O K
60 min Winter	99.435	0.435	0.5	10.0	O K
120 min Winter	99.461	0.461	0.5	11.3	O K
180 min Winter	99.466	0.466	0.6	11.5	O K
240 min Winter	99.466	0.466	0.6	11.5	O K
360 min Winter	99.462	0.462	0.5	11.3	O K
480 min Winter	99.455	0.455	0.5	11.0	O K
600 min Winter	99.446	0.446	0.5	10.5	O K
720 min Winter	99.436	0.436	0.5	10.1	O K
960 min Winter	99.417	0.417	0.5	9.1	O K
1440 min Winter	99.380	0.380	0.4	7.5	O K
2160 min Winter	99.334	0.334	0.4	5.7	O K
2880 min Winter	99.297	0.297	0.3	4.4	O K
4320 min Winter	99.243	0.243	0.3	2.8	O K
5760 min Winter	99.206	0.206	0.2	1.9	O K
7200 min Winter	99.183	0.183	0.2	1.4	O K
8640 min Winter	99.167	0.167	0.2	1.2	O K
10080 min Winter	99.155	0.155	0.2	1.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	90.474	0.0	32
60 min Winter	57.877	0.0	60
120 min Winter	35.655	0.0	118
180 min Winter	26.413	0.0	170
240 min Winter	21.237	0.0	194
360 min Winter	15.626	0.0	270
480 min Winter	12.548	0.0	346
600 min Winter	10.575	0.0	422
720 min Winter	9.191	0.0	494
960 min Winter	7.358	0.0	636
1440 min Winter	5.368	0.0	908
2160 min Winter	3.907	0.0	1296
2880 min Winter	3.115	0.0	1672
4320 min Winter	2.259	0.0	2380
5760 min Winter	1.796	0.0	3064
7200 min Winter	1.506	0.0	3752
8640 min Winter	1.304	0.0	4496
10080 min Winter	1.154	0.0	5152

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Rainfall Details

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)	20.400	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.023

Time (mins) From:	To:	Area (ha)
0	4	0.023

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Model Details

Storage is Online Cover Level (m) 100.000

Swale Structure

Infiltration Coefficient Base (m/hr)	0.07200	Length (m)	19.0
Infiltration Coefficient Side (m/hr)	0.07200	Side Slope (1:X)	3.0
Safety Factor	2.0	Slope (1:X)	100.0
Porosity	1.00	Cap Volume Depth (m)	0.000
Invert Level (m)	99.000	Cap Infiltration Depth (m)	0.000
Base Width (m)	0.5		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 137 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.242	0.242	1.1	10.2	O K
30 min Summer	99.269	0.269	1.2	13.2	O K
60 min Summer	99.289	0.289	1.3	15.6	O K
120 min Summer	99.298	0.298	1.4	16.9	O K
180 min Summer	99.300	0.300	1.4	17.1	O K
240 min Summer	99.299	0.299	1.4	17.0	O K
360 min Summer	99.295	0.295	1.4	16.4	O K
480 min Summer	99.289	0.289	1.3	15.7	O K
600 min Summer	99.283	0.283	1.3	14.9	O K
720 min Summer	99.276	0.276	1.3	14.1	O K
960 min Summer	99.264	0.264	1.2	12.7	O K
1440 min Summer	99.244	0.244	1.1	10.4	O K
2160 min Summer	99.222	0.222	0.9	8.2	O K
2880 min Summer	99.204	0.204	0.8	6.7	O K
4320 min Summer	99.178	0.178	0.7	4.8	O K
5760 min Summer	99.159	0.159	0.6	3.6	O K
7200 min Summer	99.144	0.144	0.5	2.9	O K
8640 min Summer	99.133	0.133	0.4	2.4	O K
10080 min Summer	99.124	0.124	0.4	2.0	O K
15 min Winter	99.254	0.254	1.1	11.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	134.746	0.0	18
30 min Summer	90.474	0.0	32
60 min Summer	57.877	0.0	60
120 min Summer	35.655	0.0	100
180 min Summer	26.413	0.0	132
240 min Summer	21.237	0.0	166
360 min Summer	15.626	0.0	234
480 min Summer	12.548	0.0	304
600 min Summer	10.575	0.0	370
720 min Summer	9.191	0.0	436
960 min Summer	7.358	0.0	568
1440 min Summer	5.368	0.0	820
2160 min Summer	3.907	0.0	1188
2880 min Summer	3.115	0.0	1552
4320 min Summer	2.259	0.0	2252
5760 min Summer	1.796	0.0	2992
7200 min Summer	1.506	0.0	3680
8640 min Summer	1.304	0.0	4408
10080 min Summer	1.154	0.0	5144
15 min Winter	134.746	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.282	0.282	1.3	14.8	O K
60 min Winter	99.305	0.305	1.4	17.7	O K
120 min Winter	99.315	0.315	1.5	19.2	O K
180 min Winter	99.316	0.316	1.5	19.3	O K
240 min Winter	99.314	0.314	1.5	19.0	O K
360 min Winter	99.307	0.307	1.4	18.1	O K
480 min Winter	99.298	0.298	1.4	16.9	O K
600 min Winter	99.289	0.289	1.3	15.7	O K
720 min Winter	99.280	0.280	1.3	14.5	O K
960 min Winter	99.263	0.263	1.2	12.6	O K
1440 min Winter	99.236	0.236	1.0	9.6	O K
2160 min Winter	99.208	0.208	0.9	7.0	O K
2880 min Winter	99.186	0.186	0.7	5.3	O K
4320 min Winter	99.156	0.156	0.5	3.5	O K
5760 min Winter	99.135	0.135	0.4	2.5	O K
7200 min Winter	99.120	0.120	0.4	1.9	O K
8640 min Winter	99.109	0.109	0.3	1.5	O K
10080 min Winter	99.100	0.100	0.3	1.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	90.474	0.0	32
60 min Winter	57.877	0.0	60
120 min Winter	35.655	0.0	112
180 min Winter	26.413	0.0	160
240 min Winter	21.237	0.0	178
360 min Winter	15.626	0.0	254
480 min Winter	12.548	0.0	326
600 min Winter	10.575	0.0	398
720 min Winter	9.191	0.0	464
960 min Winter	7.358	0.0	598
1440 min Winter	5.368	0.0	850
2160 min Winter	3.907	0.0	1212
2880 min Winter	3.115	0.0	1584
4320 min Winter	2.259	0.0	2292
5760 min Winter	1.796	0.0	3000
7200 min Winter	1.506	0.0	3744
8640 min Winter	1.304	0.0	4416
10080 min Winter	1.154	0.0	5144

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Rainfall Details

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)	20.400	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.043

Time (mins) From:	To:	Area (ha)
0	4	0.043

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Model Details

Storage is Online Cover Level (m) 100.000

Swale Structure

Infiltration Coefficient Base (m/hr)	0.07200	Length (m)	85.0
Infiltration Coefficient Side (m/hr)	0.07200	Side Slope (1:X)	3.0
Safety Factor	2.0	Slope (1:X)	354.0
Porosity	1.00	Cap Volume Depth (m)	0.000
Invert Level (m)	99.000	Cap Infiltration Depth (m)	0.000
Base Width (m)	0.5		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 104 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.541	0.941	2.1	15.4	O K
30 min Summer	99.633	1.033	2.4	19.6	O K
60 min Summer	99.687	1.087	2.7	22.8	O K
120 min Summer	99.710	1.110	2.7	24.3	Flood Risk
180 min Summer	99.711	1.111	2.8	24.4	Flood Risk
240 min Summer	99.704	1.104	2.7	23.9	Flood Risk
360 min Summer	99.685	1.085	2.6	22.6	O K
480 min Summer	99.661	1.061	2.6	21.2	O K
600 min Summer	99.637	1.037	2.5	19.8	O K
720 min Summer	99.613	1.013	2.4	18.6	O K
960 min Summer	99.567	0.967	2.2	16.4	O K
1440 min Summer	99.486	0.886	1.9	13.4	O K
2160 min Summer	99.389	0.789	1.6	10.5	O K
2880 min Summer	99.310	0.710	1.4	8.5	O K
4320 min Summer	99.199	0.599	1.1	6.0	O K
5760 min Summer	99.122	0.522	0.9	4.6	O K
7200 min Summer	99.067	0.467	0.8	3.7	O K
8640 min Summer	99.024	0.424	0.7	3.0	O K
10080 min Summer	98.989	0.389	0.6	2.5	O K
15 min Winter	99.586	0.986	2.3	17.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	134.746	0.0	18
30 min Summer	90.474	0.0	32
60 min Summer	57.877	0.0	60
120 min Summer	35.655	0.0	90
180 min Summer	26.413	0.0	124
240 min Summer	21.237	0.0	158
360 min Summer	15.626	0.0	226
480 min Summer	12.548	0.0	294
600 min Summer	10.575	0.0	360
720 min Summer	9.191	0.0	424
960 min Summer	7.358	0.0	550
1440 min Summer	5.368	0.0	794
2160 min Summer	3.907	0.0	1164
2880 min Summer	3.115	0.0	1528
4320 min Summer	2.259	0.0	2248
5760 min Summer	1.796	0.0	2944
7200 min Summer	1.506	0.0	3680
8640 min Summer	1.304	0.0	4408
10080 min Summer	1.154	0.0	5144
15 min Winter	134.746	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.677	1.077	2.6	22.2	O K
60 min Winter	99.733	1.133	2.8	25.9	Flood Risk
120 min Winter	99.753	1.153	2.9	27.5	Flood Risk
180 min Winter	99.750	1.150	2.9	27.3	Flood Risk
240 min Winter	99.738	1.138	2.9	26.4	Flood Risk
360 min Winter	99.709	1.109	2.7	24.3	Flood Risk
480 min Winter	99.676	1.076	2.6	22.1	O K
600 min Winter	99.642	1.042	2.5	20.1	O K
720 min Winter	99.608	1.008	2.4	18.4	O K
960 min Winter	99.544	0.944	2.1	15.5	O K
1440 min Winter	99.440	0.840	1.8	11.9	O K
2160 min Winter	99.313	0.713	1.4	8.5	O K
2880 min Winter	99.223	0.623	1.1	6.5	O K
4320 min Winter	99.104	0.504	0.9	4.3	O K
5760 min Winter	99.028	0.428	0.7	3.1	O K
7200 min Winter	98.975	0.375	0.6	2.4	O K
8640 min Winter	98.935	0.335	0.5	1.9	O K
10080 min Winter	98.905	0.305	0.4	1.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	90.474	0.0	31
60 min Winter	57.877	0.0	58
120 min Winter	35.655	0.0	96
180 min Winter	26.413	0.0	134
240 min Winter	21.237	0.0	172
360 min Winter	15.626	0.0	244
480 min Winter	12.548	0.0	314
600 min Winter	10.575	0.0	380
720 min Winter	9.191	0.0	446
960 min Winter	7.358	0.0	570
1440 min Winter	5.368	0.0	822
2160 min Winter	3.907	0.0	1188
2880 min Winter	3.115	0.0	1556
4320 min Winter	2.259	0.0	2252
5760 min Winter	1.796	0.0	2992
7200 min Winter	1.506	0.0	3680
8640 min Winter	1.304	0.0	4408
10080 min Winter	1.154	0.0	5136

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Rainfall Details

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)	20.400	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.066

Time (mins) From:	To:	Area (ha)
0	4	0.066

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Model Details

Storage is Online Cover Level (m) 100.000

Complex Structure

Infiltration Trench

Infiltration Coefficient Base (m/hr)	0.07200	Trench Width (m)	1.0
Infiltration Coefficient Side (m/hr)	0.07200	Trench Length (m)	100.0
Safety Factor	2.0	Slope (1:X)	112.0
Porosity	0.30	Cap Volume Depth (m)	0.800
Invert Level (m)	98.600	Cap Infiltration Depth (m)	0.800

Swale

Infiltration Coefficient Base (m/hr)	0.07200	Length (m)	100.0
Infiltration Coefficient Side (m/hr)	0.07200	Side Slope (1:X)	3.0
Safety Factor	2.0	Slope (1:X)	112.0
Porosity	1.00	Cap Volume Depth (m)	0.000
Invert Level (m)	99.400	Cap Infiltration Depth (m)	0.000
Base Width (m)	0.5		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 168 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	11.103	0.703	5.9	66.3	O K
30 min Summer	11.197	0.797	6.8	86.0	O K
60 min Summer	11.263	0.863	7.4	102.9	Flood Risk
120 min Summer	11.296	0.896	7.5	112.2	Flood Risk
180 min Summer	11.300	0.900	7.5	113.4	Flood Risk
240 min Summer	11.297	0.897	7.5	112.5	Flood Risk
360 min Summer	11.285	0.885	7.5	109.0	Flood Risk
480 min Summer	11.269	0.869	7.4	104.4	Flood Risk
600 min Summer	11.251	0.851	7.3	99.5	Flood Risk
720 min Summer	11.233	0.833	7.2	94.8	Flood Risk
960 min Summer	11.198	0.798	6.8	86.3	O K
1440 min Summer	11.133	0.733	6.2	72.1	O K
2160 min Summer	11.044	0.644	5.4	56.2	O K
2880 min Summer	10.963	0.563	4.7	44.6	O K
4320 min Summer	10.800	0.400	4.1	25.8	O K
5760 min Summer	10.720	0.320	3.8	16.9	O K
7200 min Summer	10.680	0.280	3.3	12.9	O K
8640 min Summer	10.649	0.249	2.9	10.2	O K
10080 min Summer	10.624	0.224	2.6	8.3	O K
15 min Winter	11.146	0.746	6.3	74.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	134.746	0.0	18
30 min Summer	90.474	0.0	32
60 min Summer	57.877	0.0	62
120 min Summer	35.655	0.0	112
180 min Summer	26.413	0.0	142
240 min Summer	21.237	0.0	174
360 min Summer	15.626	0.0	242
480 min Summer	12.548	0.0	310
600 min Summer	10.575	0.0	380
720 min Summer	9.191	0.0	446
960 min Summer	7.358	0.0	578
1440 min Summer	5.368	0.0	838
2160 min Summer	3.907	0.0	1212
2880 min Summer	3.115	0.0	1588
4320 min Summer	2.259	0.0	2292
5760 min Summer	1.796	0.0	2952
7200 min Summer	1.506	0.0	3680
8640 min Summer	1.304	0.0	4408
10080 min Summer	1.154	0.0	5144
15 min Winter	134.746	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	11.241	0.841	7.2	97.1	Flood Risk
60 min Winter	11.313	0.913	7.6	117.1	Flood Risk
120 min Winter	11.353	0.953	7.8	129.5	Flood Risk
180 min Winter	11.355	0.955	7.8	129.9	Flood Risk
240 min Winter	11.351	0.951	7.8	128.6	Flood Risk
360 min Winter	11.333	0.933	7.7	123.2	Flood Risk
480 min Winter	11.309	0.909	7.6	116.1	Flood Risk
600 min Winter	11.283	0.883	7.4	108.5	Flood Risk
720 min Winter	11.257	0.857	7.3	101.3	Flood Risk
960 min Winter	11.209	0.809	6.9	88.8	Flood Risk
1440 min Winter	11.119	0.719	6.1	69.3	O K
2160 min Winter	10.996	0.596	5.0	49.1	O K
2880 min Winter	10.863	0.463	4.2	33.0	O K
4320 min Winter	10.707	0.307	3.6	15.6	O K
5760 min Winter	10.651	0.251	2.9	10.4	O K
7200 min Winter	10.614	0.214	2.5	7.5	O K
8640 min Winter	10.587	0.187	2.1	5.7	O K
10080 min Winter	10.566	0.166	1.9	4.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	90.474	0.0	32
60 min Winter	57.877	0.0	60
120 min Winter	35.655	0.0	116
180 min Winter	26.413	0.0	150
240 min Winter	21.237	0.0	186
360 min Winter	15.626	0.0	262
480 min Winter	12.548	0.0	338
600 min Winter	10.575	0.0	410
720 min Winter	9.191	0.0	478
960 min Winter	7.358	0.0	616
1440 min Winter	5.368	0.0	880
2160 min Winter	3.907	0.0	1272
2880 min Winter	3.115	0.0	1648
4320 min Winter	2.259	0.0	2252
5760 min Winter	1.796	0.0	2992
7200 min Winter	1.506	0.0	3680
8640 min Winter	1.304	0.0	4408
10080 min Winter	1.154	0.0	5136

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Rainfall Details

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)	20.400	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.279

Time (mins) From:	To:	Area (ha)
0	4	0.279

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Model Details

Storage is Online Cover Level (m) 11.500

Complex Structure

Trench Soakaway

Infiltration Coefficient Base (m/hr)	0.07200	Trench Width (m)	5.0
Infiltration Coefficient Side (m/hr)	0.07200	Trench Length (m)	75.0
Safety Factor	2.0	Slope (1:X)	220.0
Porosity	0.30	Cap Volume Depth (m)	0.500
Invert Level (m)	10.400	Cap Infiltration Depth (m)	0.500

Swale

Infiltration Coefficient Base (m/hr)	0.07200	Length (m)	75.0
Infiltration Coefficient Side (m/hr)	0.07200	Side Slope (1:X)	3.0
Safety Factor	2.0	Slope (1:X)	220.0
Porosity	1.00	Cap Volume Depth (m)	0.000
Invert Level (m)	10.900	Cap Infiltration Depth (m)	0.000
Base Width (m)	2.5		

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 107 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.239	0.239	0.8	5.7	O K
30 min Summer	99.302	0.302	0.8	7.3	O K
60 min Summer	99.349	0.349	0.8	8.5	O K
120 min Summer	99.361	0.361	0.8	8.8	O K
180 min Summer	99.352	0.352	0.8	8.6	O K
240 min Summer	99.337	0.337	0.8	8.2	O K
360 min Summer	99.307	0.307	0.8	7.5	O K
480 min Summer	99.276	0.276	0.8	6.7	O K
600 min Summer	99.247	0.247	0.8	5.9	O K
720 min Summer	99.218	0.218	0.8	5.2	O K
960 min Summer	99.167	0.167	0.8	3.9	O K
1440 min Summer	99.093	0.093	0.8	2.0	O K
2160 min Summer	99.049	0.049	0.8	0.9	O K
2880 min Summer	99.039	0.039	0.7	0.7	O K
4320 min Summer	99.029	0.029	0.5	0.4	O K
5760 min Summer	99.025	0.025	0.4	0.3	O K
7200 min Summer	99.023	0.023	0.3	0.2	O K
8640 min Summer	99.021	0.021	0.3	0.2	O K
10080 min Summer	99.020	0.020	0.3	0.2	O K
15 min Winter	99.269	0.269	0.8	6.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	60
120 min Summer	34.307	0.0	100
180 min Summer	25.552	0.0	132
240 min Summer	20.570	0.0	166
360 min Summer	15.173	0.0	234
480 min Summer	12.206	0.0	302
600 min Summer	10.302	0.0	368
720 min Summer	8.963	0.0	432
960 min Summer	7.189	0.0	552
1440 min Summer	5.257	0.0	780
2160 min Summer	3.836	0.0	1100
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2912
7200 min Summer	1.487	0.0	3616
8640 min Summer	1.289	0.0	4288
10080 min Summer	1.142	0.0	5088
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.343	0.343	0.8	8.4	O K
60 min Winter	99.403	0.403	0.8	9.9	O K
120 min Winter	99.423	0.423	0.8	10.4	O K
180 min Winter	99.408	0.408	0.8	10.0	O K
240 min Winter	99.387	0.387	0.8	9.5	O K
360 min Winter	99.340	0.340	0.8	8.3	O K
480 min Winter	99.291	0.291	0.8	7.1	O K
600 min Winter	99.244	0.244	0.8	5.9	O K
720 min Winter	99.201	0.201	0.8	4.8	O K
960 min Winter	99.126	0.126	0.8	2.9	O K
1440 min Winter	99.049	0.049	0.8	0.9	O K
2160 min Winter	99.036	0.036	0.6	0.6	O K
2880 min Winter	99.029	0.029	0.5	0.4	O K
4320 min Winter	99.024	0.024	0.4	0.3	O K
5760 min Winter	99.021	0.021	0.3	0.2	O K
7200 min Winter	99.019	0.019	0.2	0.2	O K
8640 min Winter	99.018	0.018	0.2	0.2	O K
10080 min Winter	99.017	0.017	0.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	114
180 min Winter	25.552	0.0	142
240 min Winter	20.570	0.0	180
360 min Winter	15.173	0.0	256
480 min Winter	12.206	0.0	326
600 min Winter	10.302	0.0	394
720 min Winter	8.963	0.0	458
960 min Winter	7.189	0.0	576
1440 min Winter	5.257	0.0	748
2160 min Winter	3.836	0.0	1108
2880 min Winter	3.063	0.0	1468
4320 min Winter	2.226	0.0	2168
5760 min Winter	1.773	0.0	2880
7200 min Winter	1.487	0.0	3664
8640 min Winter	1.289	0.0	4408
10080 min Winter	1.142	0.0	5024

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.027

Time (mins) From:	To:	Area (ha)
0	4	0.027

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	6.5
Membrane Percolation (mm/hr)	1000	Length (m)	13.0
Max Percolation (l/s)	23.5	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	99.000	Cap Volume Depth (m)	0.500

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 73 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.377	0.377	1.9	10.7	O K
30 min Summer	99.425	0.425	2.1	13.5	O K
60 min Summer	99.454	0.454	2.3	15.4	O K
120 min Summer	99.466	0.466	2.3	16.3	O K
180 min Summer	99.463	0.463	2.3	16.1	O K
240 min Summer	99.454	0.454	2.3	15.5	O K
360 min Summer	99.435	0.435	2.2	14.2	O K
480 min Summer	99.416	0.416	2.1	13.0	O K
600 min Summer	99.398	0.398	2.0	11.9	O K
720 min Summer	99.382	0.382	1.9	10.9	O K
960 min Summer	99.352	0.352	1.8	9.3	O K
1440 min Summer	99.306	0.306	1.5	7.0	O K
2160 min Summer	99.255	0.255	1.3	4.9	O K
2880 min Summer	99.219	0.219	1.1	3.6	O K
4320 min Summer	99.171	0.171	0.9	2.2	O K
5760 min Summer	99.141	0.141	0.7	1.5	O K
7200 min Summer	99.120	0.120	0.6	1.1	O K
8640 min Summer	99.105	0.105	0.5	0.8	O K
10080 min Summer	99.093	0.093	0.5	0.6	O K
15 min Winter	99.401	0.401	2.0	12.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	17
30 min Summer	85.821	0.0	31
60 min Summer	55.250	0.0	54
120 min Summer	34.307	0.0	86
180 min Summer	25.552	0.0	122
240 min Summer	20.570	0.0	156
360 min Summer	15.173	0.0	224
480 min Summer	12.206	0.0	290
600 min Summer	10.302	0.0	354
720 min Summer	8.963	0.0	418
960 min Summer	7.189	0.0	540
1440 min Summer	5.257	0.0	782
2160 min Summer	3.836	0.0	1144
2880 min Summer	3.063	0.0	1500
4320 min Summer	2.226	0.0	2208
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5128
15 min Winter	127.204	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.452	0.452	2.3	15.4	O K
60 min Winter	99.485	0.485	2.4	17.7	O K
120 min Winter	99.496	0.496	2.5	18.4	O K
180 min Winter	99.489	0.489	2.4	17.9	O K
240 min Winter	99.476	0.476	2.4	17.0	O K
360 min Winter	99.448	0.448	2.2	15.0	O K
480 min Winter	99.420	0.420	2.1	13.2	O K
600 min Winter	99.395	0.395	2.0	11.7	O K
720 min Winter	99.372	0.372	1.9	10.4	O K
960 min Winter	99.332	0.332	1.7	8.3	O K
1440 min Winter	99.273	0.273	1.4	5.6	O K
2160 min Winter	99.213	0.213	1.1	3.4	O K
2880 min Winter	99.175	0.175	0.9	2.3	O K
4320 min Winter	99.130	0.130	0.7	1.3	O K
5760 min Winter	99.104	0.104	0.5	0.8	O K
7200 min Winter	99.088	0.088	0.4	0.6	O K
8640 min Winter	99.076	0.076	0.4	0.4	O K
10080 min Winter	99.068	0.068	0.3	0.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	31
60 min Winter	55.250	0.0	58
120 min Winter	34.307	0.0	92
180 min Winter	25.552	0.0	130
240 min Winter	20.570	0.0	168
360 min Winter	15.173	0.0	238
480 min Winter	12.206	0.0	308
600 min Winter	10.302	0.0	374
720 min Winter	8.963	0.0	436
960 min Winter	7.189	0.0	562
1440 min Winter	5.257	0.0	808
2160 min Winter	3.836	0.0	1164
2880 min Winter	3.063	0.0	1504
4320 min Winter	2.226	0.0	2208
5760 min Winter	1.773	0.0	2936
7200 min Winter	1.487	0.0	3672
8640 min Winter	1.289	0.0	4352
10080 min Winter	1.142	0.0	5104

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.050

Time (mins) From:	To:	Area (ha)
0	4	0.050

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	50.0
Max Percolation (l/s)	69.4	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	99.000	Cap Volume Depth (m)	0.500

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 73 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.377	0.377	1.9	10.7	O K
30 min Summer	99.425	0.425	2.1	13.5	O K
60 min Summer	99.454	0.454	2.3	15.4	O K
120 min Summer	99.466	0.466	2.3	16.3	O K
180 min Summer	99.463	0.463	2.3	16.1	O K
240 min Summer	99.454	0.454	2.3	15.5	O K
360 min Summer	99.435	0.435	2.2	14.2	O K
480 min Summer	99.416	0.416	2.1	13.0	O K
600 min Summer	99.398	0.398	2.0	11.9	O K
720 min Summer	99.382	0.382	1.9	10.9	O K
960 min Summer	99.352	0.352	1.8	9.3	O K
1440 min Summer	99.306	0.306	1.5	7.0	O K
2160 min Summer	99.255	0.255	1.3	4.9	O K
2880 min Summer	99.219	0.219	1.1	3.6	O K
4320 min Summer	99.171	0.171	0.9	2.2	O K
5760 min Summer	99.141	0.141	0.7	1.5	O K
7200 min Summer	99.120	0.120	0.6	1.1	O K
8640 min Summer	99.105	0.105	0.5	0.8	O K
10080 min Summer	99.093	0.093	0.5	0.6	O K
15 min Winter	99.401	0.401	2.0	12.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	17
30 min Summer	85.821	0.0	31
60 min Summer	55.250	0.0	54
120 min Summer	34.307	0.0	86
180 min Summer	25.552	0.0	122
240 min Summer	20.570	0.0	156
360 min Summer	15.173	0.0	224
480 min Summer	12.206	0.0	290
600 min Summer	10.302	0.0	354
720 min Summer	8.963	0.0	418
960 min Summer	7.189	0.0	540
1440 min Summer	5.257	0.0	782
2160 min Summer	3.836	0.0	1144
2880 min Summer	3.063	0.0	1500
4320 min Summer	2.226	0.0	2208
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5128
15 min Winter	127.204	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.452	0.452	2.3	15.4	O K
60 min Winter	99.485	0.485	2.4	17.7	O K
120 min Winter	99.496	0.496	2.5	18.4	O K
180 min Winter	99.489	0.489	2.4	17.9	O K
240 min Winter	99.476	0.476	2.4	17.0	O K
360 min Winter	99.448	0.448	2.2	15.0	O K
480 min Winter	99.420	0.420	2.1	13.2	O K
600 min Winter	99.395	0.395	2.0	11.7	O K
720 min Winter	99.372	0.372	1.9	10.4	O K
960 min Winter	99.332	0.332	1.7	8.3	O K
1440 min Winter	99.273	0.273	1.4	5.6	O K
2160 min Winter	99.213	0.213	1.1	3.4	O K
2880 min Winter	99.175	0.175	0.9	2.3	O K
4320 min Winter	99.130	0.130	0.7	1.3	O K
5760 min Winter	99.104	0.104	0.5	0.8	O K
7200 min Winter	99.088	0.088	0.4	0.6	O K
8640 min Winter	99.076	0.076	0.4	0.4	O K
10080 min Winter	99.068	0.068	0.3	0.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	31
60 min Winter	55.250	0.0	58
120 min Winter	34.307	0.0	92
180 min Winter	25.552	0.0	130
240 min Winter	20.570	0.0	168
360 min Winter	15.173	0.0	238
480 min Winter	12.206	0.0	308
600 min Winter	10.302	0.0	374
720 min Winter	8.963	0.0	436
960 min Winter	7.189	0.0	562
1440 min Winter	5.257	0.0	808
2160 min Winter	3.836	0.0	1164
2880 min Winter	3.063	0.0	1504
4320 min Winter	2.226	0.0	2208
5760 min Winter	1.773	0.0	2936
7200 min Winter	1.487	0.0	3672
8640 min Winter	1.289	0.0	4352
10080 min Winter	1.142	0.0	5104

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.050

Time (mins) From:	To:	Area (ha)
0	4	0.050

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	50.0
Max Percolation (l/s)	69.4	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	99.000	Cap Volume Depth (m)	0.500

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 186 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.420	0.420	0.5	4.8	O K
30 min Summer	99.528	0.528	0.5	6.3	O K
60 min Summer	99.624	0.624	0.5	7.6	O K
120 min Summer	99.681	0.681	0.5	8.4	O K
180 min Summer	99.679	0.679	0.5	8.4	O K
240 min Summer	99.665	0.665	0.5	8.2	O K
360 min Summer	99.637	0.637	0.5	7.8	O K
480 min Summer	99.605	0.605	0.5	7.4	O K
600 min Summer	99.574	0.574	0.5	6.9	O K
720 min Summer	99.542	0.542	0.5	6.5	O K
960 min Summer	99.480	0.480	0.5	5.7	O K
1440 min Summer	99.367	0.367	0.5	4.1	O K
2160 min Summer	99.238	0.238	0.5	2.4	O K
2880 min Summer	99.158	0.158	0.5	1.3	O K
4320 min Summer	99.111	0.111	0.4	0.6	O K
5760 min Summer	99.090	0.090	0.3	0.4	O K
7200 min Summer	99.076	0.076	0.3	0.3	O K
8640 min Summer	99.066	0.066	0.2	0.2	O K
10080 min Summer	99.059	0.059	0.2	0.2	O K
15 min Winter	99.466	0.466	0.5	5.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	33
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	120
180 min Summer	25.552	0.0	158
240 min Summer	20.570	0.0	190
360 min Summer	15.173	0.0	254
480 min Summer	12.206	0.0	324
600 min Summer	10.302	0.0	392
720 min Summer	8.963	0.0	458
960 min Summer	7.189	0.0	590
1440 min Summer	5.257	0.0	840
2160 min Summer	3.836	0.0	1192
2880 min Summer	3.063	0.0	1524
4320 min Summer	2.226	0.0	2204
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5064
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.591	0.591	0.5	7.2	O K
60 min Winter	99.705	0.705	0.5	8.7	Flood Risk
120 min Winter	99.782	0.782	0.5	9.8	Flood Risk
180 min Winter	99.790	0.790	0.5	9.9	Flood Risk
240 min Winter	99.770	0.770	0.5	9.6	Flood Risk
360 min Winter	99.730	0.730	0.5	9.1	Flood Risk
480 min Winter	99.683	0.683	0.5	8.4	O K
600 min Winter	99.634	0.634	0.5	7.8	O K
720 min Winter	99.584	0.584	0.5	7.1	O K
960 min Winter	99.486	0.486	0.5	5.7	O K
1440 min Winter	99.314	0.314	0.5	3.4	O K
2160 min Winter	99.148	0.148	0.5	1.1	O K
2880 min Winter	99.112	0.112	0.4	0.7	O K
4320 min Winter	99.082	0.082	0.3	0.4	O K
5760 min Winter	99.066	0.066	0.2	0.2	O K
7200 min Winter	99.055	0.055	0.2	0.2	O K
8640 min Winter	99.049	0.049	0.2	0.1	O K
10080 min Winter	99.046	0.046	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	118
180 min Winter	25.552	0.0	172
240 min Winter	20.570	0.0	220
360 min Winter	15.173	0.0	276
480 min Winter	12.206	0.0	352
600 min Winter	10.302	0.0	428
720 min Winter	8.963	0.0	498
960 min Winter	7.189	0.0	636
1440 min Winter	5.257	0.0	882
2160 min Winter	3.836	0.0	1188
2880 min Winter	3.063	0.0	1496
4320 min Winter	2.226	0.0	2204
5760 min Winter	1.773	0.0	2936
7200 min Winter	1.487	0.0	3632
8640 min Winter	1.289	0.0	4328
10080 min Winter	1.142	0.0	5040

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.022

Time (mins) From:	To:	Area (ha)
0	4	0.022

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	3.5
Membrane Percolation (mm/hr)	1000	Length (m)	13.0
Max Percolation (l/s)	12.6	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 134 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.277	0.277	0.4	2.8	O K
30 min Summer	99.354	0.354	0.4	3.6	O K
60 min Summer	99.416	0.416	0.4	4.3	O K
120 min Summer	99.439	0.439	0.4	4.5	O K
180 min Summer	99.431	0.431	0.4	4.4	O K
240 min Summer	99.417	0.417	0.4	4.3	O K
360 min Summer	99.387	0.387	0.4	4.0	O K
480 min Summer	99.356	0.356	0.4	3.6	O K
600 min Summer	99.325	0.325	0.4	3.3	O K
720 min Summer	99.295	0.295	0.4	3.0	O K
960 min Summer	99.238	0.238	0.4	2.4	O K
1440 min Summer	99.146	0.146	0.4	1.4	O K
2160 min Summer	99.067	0.067	0.4	0.6	O K
2880 min Summer	99.046	0.046	0.3	0.4	O K
4320 min Summer	99.034	0.034	0.2	0.2	O K
5760 min Summer	99.027	0.027	0.2	0.2	O K
7200 min Summer	99.023	0.023	0.2	0.1	O K
8640 min Summer	99.020	0.020	0.1	0.1	O K
10080 min Summer	99.019	0.019	0.1	0.1	O K
15 min Winter	99.312	0.312	0.4	3.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	108
180 min Summer	25.552	0.0	140
240 min Summer	20.570	0.0	172
360 min Summer	15.173	0.0	240
480 min Summer	12.206	0.0	308
600 min Summer	10.302	0.0	376
720 min Summer	8.963	0.0	442
960 min Summer	7.189	0.0	568
1440 min Summer	5.257	0.0	806
2160 min Summer	3.836	0.0	1128
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3664
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5016
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.402	0.402	0.4	4.1	O K
60 min Winter	99.478	0.478	0.4	4.9	O K
120 min Winter	99.515	0.515	0.4	5.3	O K
180 min Winter	99.503	0.503	0.4	5.2	O K
240 min Winter	99.484	0.484	0.4	5.0	O K
360 min Winter	99.439	0.439	0.4	4.5	O K
480 min Winter	99.390	0.390	0.4	4.0	O K
600 min Winter	99.341	0.341	0.4	3.5	O K
720 min Winter	99.293	0.293	0.4	3.0	O K
960 min Winter	99.206	0.206	0.4	2.1	O K
1440 min Winter	99.081	0.081	0.4	0.7	O K
2160 min Winter	99.042	0.042	0.3	0.3	O K
2880 min Winter	99.034	0.034	0.2	0.2	O K
4320 min Winter	99.024	0.024	0.2	0.2	O K
5760 min Winter	99.020	0.020	0.1	0.1	O K
7200 min Winter	99.018	0.018	0.1	0.1	O K
8640 min Winter	99.017	0.017	0.1	0.1	O K
10080 min Winter	99.016	0.016	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	150
240 min Winter	20.570	0.0	186
360 min Winter	15.173	0.0	262
480 min Winter	12.206	0.0	336
600 min Winter	10.302	0.0	406
720 min Winter	8.963	0.0	474
960 min Winter	7.189	0.0	598
1440 min Winter	5.257	0.0	808
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1472
4320 min Winter	2.226	0.0	2204
5760 min Winter	1.773	0.0	2872
7200 min Winter	1.487	0.0	3664
8640 min Winter	1.289	0.0	4368
10080 min Winter	1.142	0.0	5016

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.013

Time (mins) From:	To:	Area (ha)
0	4	0.013

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	3.5
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	9.7	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.600

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 134 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.277	0.277	0.4	2.8	O K
30 min Summer	99.354	0.354	0.4	3.6	O K
60 min Summer	99.416	0.416	0.4	4.3	O K
120 min Summer	99.439	0.439	0.4	4.5	O K
180 min Summer	99.431	0.431	0.4	4.4	O K
240 min Summer	99.417	0.417	0.4	4.3	O K
360 min Summer	99.387	0.387	0.4	4.0	O K
480 min Summer	99.356	0.356	0.4	3.6	O K
600 min Summer	99.325	0.325	0.4	3.3	O K
720 min Summer	99.295	0.295	0.4	3.0	O K
960 min Summer	99.238	0.238	0.4	2.4	O K
1440 min Summer	99.146	0.146	0.4	1.4	O K
2160 min Summer	99.067	0.067	0.4	0.6	O K
2880 min Summer	99.046	0.046	0.3	0.4	O K
4320 min Summer	99.034	0.034	0.2	0.2	O K
5760 min Summer	99.027	0.027	0.2	0.2	O K
7200 min Summer	99.023	0.023	0.2	0.1	O K
8640 min Summer	99.020	0.020	0.1	0.1	O K
10080 min Summer	99.019	0.019	0.1	0.1	O K
15 min Winter	99.312	0.312	0.4	3.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	108
180 min Summer	25.552	0.0	140
240 min Summer	20.570	0.0	172
360 min Summer	15.173	0.0	240
480 min Summer	12.206	0.0	308
600 min Summer	10.302	0.0	376
720 min Summer	8.963	0.0	442
960 min Summer	7.189	0.0	568
1440 min Summer	5.257	0.0	806
2160 min Summer	3.836	0.0	1128
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3664
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5016
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.402	0.402	0.4	4.1	O K
60 min Winter	99.478	0.478	0.4	4.9	O K
120 min Winter	99.515	0.515	0.4	5.3	O K
180 min Winter	99.503	0.503	0.4	5.2	O K
240 min Winter	99.484	0.484	0.4	5.0	O K
360 min Winter	99.439	0.439	0.4	4.5	O K
480 min Winter	99.390	0.390	0.4	4.0	O K
600 min Winter	99.341	0.341	0.4	3.5	O K
720 min Winter	99.293	0.293	0.4	3.0	O K
960 min Winter	99.206	0.206	0.4	2.1	O K
1440 min Winter	99.081	0.081	0.4	0.7	O K
2160 min Winter	99.042	0.042	0.3	0.3	O K
2880 min Winter	99.034	0.034	0.2	0.2	O K
4320 min Winter	99.024	0.024	0.2	0.2	O K
5760 min Winter	99.020	0.020	0.1	0.1	O K
7200 min Winter	99.018	0.018	0.1	0.1	O K
8640 min Winter	99.017	0.017	0.1	0.1	O K
10080 min Winter	99.016	0.016	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	150
240 min Winter	20.570	0.0	186
360 min Winter	15.173	0.0	262
480 min Winter	12.206	0.0	336
600 min Winter	10.302	0.0	406
720 min Winter	8.963	0.0	474
960 min Winter	7.189	0.0	598
1440 min Winter	5.257	0.0	808
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1472
4320 min Winter	2.226	0.0	2204
5760 min Winter	1.773	0.0	2872
7200 min Winter	1.487	0.0	3664
8640 min Winter	1.289	0.0	4368
10080 min Winter	1.142	0.0	5016

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.013

Time (mins) From:	To:	Area (ha)
0	4	0.013

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	3.5
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	9.7	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.600

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 134 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.277	0.277	0.4	2.8	O K
30 min Summer	99.354	0.354	0.4	3.6	O K
60 min Summer	99.416	0.416	0.4	4.3	O K
120 min Summer	99.439	0.439	0.4	4.5	O K
180 min Summer	99.431	0.431	0.4	4.4	O K
240 min Summer	99.417	0.417	0.4	4.3	O K
360 min Summer	99.387	0.387	0.4	4.0	O K
480 min Summer	99.356	0.356	0.4	3.6	O K
600 min Summer	99.325	0.325	0.4	3.3	O K
720 min Summer	99.295	0.295	0.4	3.0	O K
960 min Summer	99.238	0.238	0.4	2.4	O K
1440 min Summer	99.146	0.146	0.4	1.4	O K
2160 min Summer	99.067	0.067	0.4	0.6	O K
2880 min Summer	99.046	0.046	0.3	0.4	O K
4320 min Summer	99.034	0.034	0.2	0.2	O K
5760 min Summer	99.027	0.027	0.2	0.2	O K
7200 min Summer	99.023	0.023	0.2	0.1	O K
8640 min Summer	99.020	0.020	0.1	0.1	O K
10080 min Summer	99.019	0.019	0.1	0.1	O K
15 min Winter	99.312	0.312	0.4	3.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	108
180 min Summer	25.552	0.0	140
240 min Summer	20.570	0.0	172
360 min Summer	15.173	0.0	240
480 min Summer	12.206	0.0	308
600 min Summer	10.302	0.0	376
720 min Summer	8.963	0.0	442
960 min Summer	7.189	0.0	568
1440 min Summer	5.257	0.0	806
2160 min Summer	3.836	0.0	1128
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3664
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5016
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.402	0.402	0.4	4.1	O K
60 min Winter	99.478	0.478	0.4	4.9	O K
120 min Winter	99.515	0.515	0.4	5.3	O K
180 min Winter	99.503	0.503	0.4	5.2	O K
240 min Winter	99.484	0.484	0.4	5.0	O K
360 min Winter	99.439	0.439	0.4	4.5	O K
480 min Winter	99.390	0.390	0.4	4.0	O K
600 min Winter	99.341	0.341	0.4	3.5	O K
720 min Winter	99.293	0.293	0.4	3.0	O K
960 min Winter	99.206	0.206	0.4	2.1	O K
1440 min Winter	99.081	0.081	0.4	0.7	O K
2160 min Winter	99.042	0.042	0.3	0.3	O K
2880 min Winter	99.034	0.034	0.2	0.2	O K
4320 min Winter	99.024	0.024	0.2	0.2	O K
5760 min Winter	99.020	0.020	0.1	0.1	O K
7200 min Winter	99.018	0.018	0.1	0.1	O K
8640 min Winter	99.017	0.017	0.1	0.1	O K
10080 min Winter	99.016	0.016	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	150
240 min Winter	20.570	0.0	186
360 min Winter	15.173	0.0	262
480 min Winter	12.206	0.0	336
600 min Winter	10.302	0.0	406
720 min Winter	8.963	0.0	474
960 min Winter	7.189	0.0	598
1440 min Winter	5.257	0.0	808
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1472
4320 min Winter	2.226	0.0	2204
5760 min Winter	1.773	0.0	2872
7200 min Winter	1.487	0.0	3664
8640 min Winter	1.289	0.0	4368
10080 min Winter	1.142	0.0	5016

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.013

Time (mins) From:	To:	Area (ha)
0	4	0.013

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	3.5
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	9.7	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.600

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 134 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.277	0.277	0.4	2.8	O K
30 min Summer	99.354	0.354	0.4	3.6	O K
60 min Summer	99.416	0.416	0.4	4.3	O K
120 min Summer	99.439	0.439	0.4	4.5	O K
180 min Summer	99.431	0.431	0.4	4.4	O K
240 min Summer	99.417	0.417	0.4	4.3	O K
360 min Summer	99.387	0.387	0.4	4.0	O K
480 min Summer	99.356	0.356	0.4	3.6	O K
600 min Summer	99.325	0.325	0.4	3.3	O K
720 min Summer	99.295	0.295	0.4	3.0	O K
960 min Summer	99.238	0.238	0.4	2.4	O K
1440 min Summer	99.146	0.146	0.4	1.4	O K
2160 min Summer	99.067	0.067	0.4	0.6	O K
2880 min Summer	99.046	0.046	0.3	0.4	O K
4320 min Summer	99.034	0.034	0.2	0.2	O K
5760 min Summer	99.027	0.027	0.2	0.2	O K
7200 min Summer	99.023	0.023	0.2	0.1	O K
8640 min Summer	99.020	0.020	0.1	0.1	O K
10080 min Summer	99.019	0.019	0.1	0.1	O K
15 min Winter	99.312	0.312	0.4	3.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	108
180 min Summer	25.552	0.0	140
240 min Summer	20.570	0.0	172
360 min Summer	15.173	0.0	240
480 min Summer	12.206	0.0	308
600 min Summer	10.302	0.0	376
720 min Summer	8.963	0.0	442
960 min Summer	7.189	0.0	568
1440 min Summer	5.257	0.0	806
2160 min Summer	3.836	0.0	1128
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3664
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5016
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.402	0.402	0.4	4.1	O K
60 min Winter	99.478	0.478	0.4	4.9	O K
120 min Winter	99.515	0.515	0.4	5.3	O K
180 min Winter	99.503	0.503	0.4	5.2	O K
240 min Winter	99.484	0.484	0.4	5.0	O K
360 min Winter	99.439	0.439	0.4	4.5	O K
480 min Winter	99.390	0.390	0.4	4.0	O K
600 min Winter	99.341	0.341	0.4	3.5	O K
720 min Winter	99.293	0.293	0.4	3.0	O K
960 min Winter	99.206	0.206	0.4	2.1	O K
1440 min Winter	99.081	0.081	0.4	0.7	O K
2160 min Winter	99.042	0.042	0.3	0.3	O K
2880 min Winter	99.034	0.034	0.2	0.2	O K
4320 min Winter	99.024	0.024	0.2	0.2	O K
5760 min Winter	99.020	0.020	0.1	0.1	O K
7200 min Winter	99.018	0.018	0.1	0.1	O K
8640 min Winter	99.017	0.017	0.1	0.1	O K
10080 min Winter	99.016	0.016	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	150
240 min Winter	20.570	0.0	186
360 min Winter	15.173	0.0	262
480 min Winter	12.206	0.0	336
600 min Winter	10.302	0.0	406
720 min Winter	8.963	0.0	474
960 min Winter	7.189	0.0	598
1440 min Winter	5.257	0.0	808
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1472
4320 min Winter	2.226	0.0	2204
5760 min Winter	1.773	0.0	2872
7200 min Winter	1.487	0.0	3664
8640 min Winter	1.289	0.0	4368
10080 min Winter	1.142	0.0	5016

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.013

Time (mins) From:	To:	Area (ha)
0	4	0.013

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	3.5
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	9.7	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.600

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 148 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.299	0.299	0.4	3.0	O K
30 min Summer	99.384	0.384	0.4	3.9	O K
60 min Summer	99.454	0.454	0.4	4.7	O K
120 min Summer	99.484	0.484	0.4	5.0	O K
180 min Summer	99.477	0.477	0.4	4.9	O K
240 min Summer	99.462	0.462	0.4	4.7	O K
360 min Summer	99.433	0.433	0.4	4.4	O K
480 min Summer	99.402	0.402	0.4	4.1	O K
600 min Summer	99.370	0.370	0.4	3.8	O K
720 min Summer	99.339	0.339	0.4	3.5	O K
960 min Summer	99.280	0.280	0.4	2.8	O K
1440 min Summer	99.181	0.181	0.4	1.8	O K
2160 min Summer	99.086	0.086	0.4	0.8	O K
2880 min Summer	99.049	0.049	0.3	0.4	O K
4320 min Summer	99.036	0.036	0.3	0.3	O K
5760 min Summer	99.029	0.029	0.2	0.2	O K
7200 min Summer	99.024	0.024	0.2	0.1	O K
8640 min Summer	99.021	0.021	0.1	0.1	O K
10080 min Summer	99.020	0.020	0.1	0.1	O K
15 min Winter	99.337	0.337	0.4	3.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	114
180 min Summer	25.552	0.0	144
240 min Summer	20.570	0.0	176
360 min Summer	15.173	0.0	244
480 min Summer	12.206	0.0	312
600 min Summer	10.302	0.0	380
720 min Summer	8.963	0.0	446
960 min Summer	7.189	0.0	576
1440 min Summer	5.257	0.0	812
2160 min Summer	3.836	0.0	1148
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2928
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4328
10080 min Summer	1.142	0.0	5080
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.436	0.436	0.4	4.5	O K
60 min Winter	99.521	0.521	0.4	5.4	O K
120 min Winter	99.568	0.568	0.4	5.9	O K
180 min Winter	99.559	0.559	0.4	5.8	O K
240 min Winter	99.539	0.539	0.4	5.5	O K
360 min Winter	99.495	0.495	0.4	5.1	O K
480 min Winter	99.446	0.446	0.4	4.6	O K
600 min Winter	99.396	0.396	0.4	4.1	O K
720 min Winter	99.348	0.348	0.4	3.5	O K
960 min Winter	99.256	0.256	0.4	2.6	O K
1440 min Winter	99.114	0.114	0.4	1.1	O K
2160 min Winter	99.045	0.045	0.3	0.4	O K
2880 min Winter	99.036	0.036	0.3	0.3	O K
4320 min Winter	99.026	0.026	0.2	0.2	O K
5760 min Winter	99.021	0.021	0.1	0.1	O K
7200 min Winter	99.019	0.019	0.1	0.1	O K
8640 min Winter	99.018	0.018	0.1	0.1	O K
10080 min Winter	99.017	0.017	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	168
240 min Winter	20.570	0.0	190
360 min Winter	15.173	0.0	266
480 min Winter	12.206	0.0	340
600 min Winter	10.302	0.0	412
720 min Winter	8.963	0.0	482
960 min Winter	7.189	0.0	610
1440 min Winter	5.257	0.0	836
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1460
4320 min Winter	2.226	0.0	2200
5760 min Winter	1.773	0.0	2928
7200 min Winter	1.487	0.0	3640
8640 min Winter	1.289	0.0	4496
10080 min Winter	1.142	0.0	4952

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.014

Time (mins) From:	To:	Area (ha)
0	4	0.014

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	3.5
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	9.7	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.600

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 90 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.210	0.210	0.4	2.1	O K
30 min Summer	99.265	0.265	0.4	2.7	O K
60 min Summer	99.303	0.303	0.4	3.1	O K
120 min Summer	99.311	0.311	0.4	3.2	O K
180 min Summer	99.301	0.301	0.4	3.1	O K
240 min Summer	99.286	0.286	0.4	2.9	O K
360 min Summer	99.257	0.257	0.4	2.6	O K
480 min Summer	99.227	0.227	0.4	2.3	O K
600 min Summer	99.198	0.198	0.4	2.0	O K
720 min Summer	99.172	0.172	0.4	1.7	O K
960 min Summer	99.127	0.127	0.4	1.2	O K
1440 min Summer	99.068	0.068	0.4	0.6	O K
2160 min Summer	99.043	0.043	0.3	0.4	O K
2880 min Summer	99.035	0.035	0.2	0.3	O K
4320 min Summer	99.026	0.026	0.2	0.2	O K
5760 min Summer	99.021	0.021	0.1	0.1	O K
7200 min Summer	99.019	0.019	0.1	0.1	O K
8640 min Summer	99.018	0.018	0.1	0.1	O K
10080 min Summer	99.017	0.017	0.1	0.1	O K
15 min Winter	99.237	0.237	0.4	2.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	17
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	60
120 min Summer	34.307	0.0	96
180 min Summer	25.552	0.0	128
240 min Summer	20.570	0.0	162
360 min Summer	15.173	0.0	230
480 min Summer	12.206	0.0	296
600 min Summer	10.302	0.0	362
720 min Summer	8.963	0.0	424
960 min Summer	7.189	0.0	540
1440 min Summer	5.257	0.0	764
2160 min Summer	3.836	0.0	1104
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2204
5760 min Summer	1.773	0.0	2904
7200 min Summer	1.487	0.0	3664
8640 min Summer	1.289	0.0	4352
10080 min Summer	1.142	0.0	5032
15 min Winter	127.204	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.301	0.301	0.4	3.1	O K
60 min Winter	99.350	0.350	0.4	3.6	O K
120 min Winter	99.361	0.361	0.4	3.7	O K
180 min Winter	99.347	0.347	0.4	3.5	O K
240 min Winter	99.325	0.325	0.4	3.3	O K
360 min Winter	99.278	0.278	0.4	2.8	O K
480 min Winter	99.230	0.230	0.4	2.3	O K
600 min Winter	99.186	0.186	0.4	1.9	O K
720 min Winter	99.146	0.146	0.4	1.4	O K
960 min Winter	99.083	0.083	0.4	0.8	O K
1440 min Winter	99.044	0.044	0.3	0.4	O K
2160 min Winter	99.032	0.032	0.2	0.2	O K
2880 min Winter	99.026	0.026	0.2	0.2	O K
4320 min Winter	99.020	0.020	0.1	0.1	O K
5760 min Winter	99.017	0.017	0.1	0.1	O K
7200 min Winter	99.016	0.016	0.1	0.1	O K
8640 min Winter	99.015	0.015	0.1	0.1	O K
10080 min Winter	99.014	0.014	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	31
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	138
240 min Winter	20.570	0.0	178
360 min Winter	15.173	0.0	250
480 min Winter	12.206	0.0	320
600 min Winter	10.302	0.0	386
720 min Winter	8.963	0.0	446
960 min Winter	7.189	0.0	550
1440 min Winter	5.257	0.0	738
2160 min Winter	3.836	0.0	1100
2880 min Winter	3.063	0.0	1468
4320 min Winter	2.226	0.0	2208
5760 min Winter	1.773	0.0	2936
7200 min Winter	1.487	0.0	3680
8640 min Winter	1.289	0.0	4400
10080 min Winter	1.142	0.0	5208

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.010

Time (mins) From:	To:	Area (ha)
0	4	0.010

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ARUN DISTRICT COUNCIL AL/106/19/DOC

Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	3.5
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	9.7	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 151 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.304	0.304	0.6	5.6	O K
30 min Summer	99.390	0.390	0.6	7.3	O K
60 min Summer	99.463	0.463	0.6	8.7	O K
120 min Summer	99.494	0.494	0.6	9.3	O K
180 min Summer	99.487	0.487	0.6	9.2	O K
240 min Summer	99.472	0.472	0.6	8.9	O K
360 min Summer	99.443	0.443	0.6	8.3	O K
480 min Summer	99.412	0.412	0.6	7.7	O K
600 min Summer	99.380	0.380	0.6	7.1	O K
720 min Summer	99.349	0.349	0.6	6.5	O K
960 min Summer	99.290	0.290	0.6	5.4	O K
1440 min Summer	99.189	0.189	0.6	3.4	O K
2160 min Summer	99.090	0.090	0.6	1.5	O K
2880 min Summer	99.050	0.050	0.6	0.8	O K
4320 min Summer	99.037	0.037	0.5	0.5	O K
5760 min Summer	99.029	0.029	0.4	0.4	O K
7200 min Summer	99.025	0.025	0.3	0.3	O K
8640 min Summer	99.022	0.022	0.3	0.2	O K
10080 min Summer	99.020	0.020	0.2	0.2	O K
15 min Winter	99.343	0.343	0.6	6.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	116
180 min Summer	25.552	0.0	146
240 min Summer	20.570	0.0	176
360 min Summer	15.173	0.0	246
480 min Summer	12.206	0.0	314
600 min Summer	10.302	0.0	380
720 min Summer	8.963	0.0	448
960 min Summer	7.189	0.0	578
1440 min Summer	5.257	0.0	822
2160 min Summer	3.836	0.0	1148
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3664
8640 min Summer	1.289	0.0	4384
10080 min Summer	1.142	0.0	5120
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.443	0.443	0.6	8.3	O K
60 min Winter	99.531	0.531	0.6	10.0	O K
120 min Winter	99.579	0.579	0.6	10.9	O K
180 min Winter	99.572	0.572	0.6	10.8	O K
240 min Winter	99.551	0.551	0.6	10.4	O K
360 min Winter	99.508	0.508	0.6	9.6	O K
480 min Winter	99.459	0.459	0.6	8.6	O K
600 min Winter	99.409	0.409	0.6	7.7	O K
720 min Winter	99.360	0.360	0.6	6.7	O K
960 min Winter	99.268	0.268	0.6	4.9	O K
1440 min Winter	99.122	0.122	0.6	2.2	O K
2160 min Winter	99.046	0.046	0.6	0.7	O K
2880 min Winter	99.037	0.037	0.5	0.5	O K
4320 min Winter	99.027	0.027	0.3	0.3	O K
5760 min Winter	99.021	0.021	0.3	0.2	O K
7200 min Winter	99.019	0.019	0.2	0.2	O K
8640 min Winter	99.018	0.018	0.2	0.1	O K
10080 min Winter	99.017	0.017	0.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	168
240 min Winter	20.570	0.0	190
360 min Winter	15.173	0.0	266
480 min Winter	12.206	0.0	342
600 min Winter	10.302	0.0	414
720 min Winter	8.963	0.0	484
960 min Winter	7.189	0.0	614
1440 min Winter	5.257	0.0	838
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1460
4320 min Winter	2.226	0.0	2180
5760 min Winter	1.773	0.0	3000
7200 min Winter	1.487	0.0	3592
8640 min Winter	1.289	0.0	4392
10080 min Winter	1.142	0.0	4960

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.026

Time (mins) From:	To:	Area (ha)
0	4	0.026

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	6.4
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	17.8	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.600

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 129 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.274	0.274	0.5	4.1	O K
30 min Summer	99.348	0.348	0.5	5.2	O K
60 min Summer	99.406	0.406	0.5	6.2	O K
120 min Summer	99.426	0.426	0.5	6.5	O K
180 min Summer	99.417	0.417	0.5	6.3	O K
240 min Summer	99.402	0.402	0.5	6.1	O K
360 min Summer	99.372	0.372	0.5	5.6	O K
480 min Summer	99.342	0.342	0.5	5.1	O K
600 min Summer	99.311	0.311	0.5	4.7	O K
720 min Summer	99.281	0.281	0.5	4.2	O K
960 min Summer	99.225	0.225	0.5	3.3	O K
1440 min Summer	99.136	0.136	0.5	1.9	O K
2160 min Summer	99.062	0.062	0.5	0.7	O K
2880 min Summer	99.045	0.045	0.5	0.5	O K
4320 min Summer	99.033	0.033	0.3	0.3	O K
5760 min Summer	99.028	0.028	0.3	0.2	O K
7200 min Summer	99.026	0.026	0.2	0.2	O K
8640 min Summer	99.024	0.024	0.2	0.2	O K
10080 min Summer	99.023	0.023	0.2	0.1	O K
15 min Winter	99.308	0.308	0.5	4.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	106
180 min Summer	25.552	0.0	138
240 min Summer	20.570	0.0	170
360 min Summer	15.173	0.0	240
480 min Summer	12.206	0.0	308
600 min Summer	10.302	0.0	374
720 min Summer	8.963	0.0	440
960 min Summer	7.189	0.0	566
1440 min Summer	5.257	0.0	796
2160 min Summer	3.836	0.0	1124
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2920
7200 min Summer	1.487	0.0	3632
8640 min Summer	1.289	0.0	4360
10080 min Summer	1.142	0.0	4976
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.395	0.395	0.5	6.0	O K
60 min Winter	99.468	0.468	0.5	7.1	O K
120 min Winter	99.500	0.500	0.5	7.6	O K
180 min Winter	99.487	0.487	0.5	7.4	O K
240 min Winter	99.466	0.466	0.5	7.1	O K
360 min Winter	99.421	0.421	0.5	6.4	O K
480 min Winter	99.372	0.372	0.5	5.6	O K
600 min Winter	99.323	0.323	0.5	4.8	O K
720 min Winter	99.276	0.276	0.5	4.1	O K
960 min Winter	99.191	0.191	0.5	2.8	O K
1440 min Winter	99.072	0.072	0.5	0.9	O K
2160 min Winter	99.041	0.041	0.4	0.4	O K
2880 min Winter	99.033	0.033	0.3	0.3	O K
4320 min Winter	99.027	0.027	0.3	0.2	O K
5760 min Winter	99.024	0.024	0.2	0.2	O K
7200 min Winter	99.022	0.022	0.2	0.1	O K
8640 min Winter	99.021	0.021	0.2	0.1	O K
10080 min Winter	99.019	0.019	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	148
240 min Winter	20.570	0.0	186
360 min Winter	15.173	0.0	262
480 min Winter	12.206	0.0	334
600 min Winter	10.302	0.0	404
720 min Winter	8.963	0.0	470
960 min Winter	7.189	0.0	596
1440 min Winter	5.257	0.0	796
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1452
4320 min Winter	2.226	0.0	2132
5760 min Winter	1.773	0.0	2912
7200 min Winter	1.487	0.0	3656
8640 min Winter	1.289	0.0	4384
10080 min Winter	1.142	0.0	4968

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.019

Time (mins) From:	To:	Area (ha)
0	4	0.019

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	3.5
Membrane Percolation (mm/hr)	1000	Length (m)	15.0
Max Percolation (l/s)	14.6	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.600

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 171 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.344	0.344	0.4	3.5	O K
30 min Summer	99.444	0.444	0.4	4.6	O K
60 min Summer	99.531	0.531	0.4	5.5	O K
120 min Summer	99.577	0.577	0.4	6.0	O K
180 min Summer	99.572	0.572	0.4	5.9	O K
240 min Summer	99.556	0.556	0.4	5.7	O K
360 min Summer	99.527	0.527	0.4	5.4	O K
480 min Summer	99.496	0.496	0.4	5.1	O K
600 min Summer	99.464	0.464	0.4	4.8	O K
720 min Summer	99.433	0.433	0.4	4.4	O K
960 min Summer	99.370	0.370	0.4	3.8	O K
1440 min Summer	99.259	0.259	0.4	2.6	O K
2160 min Summer	99.137	0.137	0.4	1.3	O K
2880 min Summer	99.069	0.069	0.4	0.6	O K
4320 min Summer	99.041	0.041	0.3	0.3	O K
5760 min Summer	99.033	0.033	0.2	0.2	O K
7200 min Summer	99.028	0.028	0.2	0.2	O K
8640 min Summer	99.024	0.024	0.2	0.1	O K
10080 min Summer	99.021	0.021	0.1	0.1	O K
15 min Winter	99.387	0.387	0.4	4.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	33
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	120
180 min Summer	25.552	0.0	154
240 min Summer	20.570	0.0	186
360 min Summer	15.173	0.0	252
480 min Summer	12.206	0.0	320
600 min Summer	10.302	0.0	386
720 min Summer	8.963	0.0	456
960 min Summer	7.189	0.0	588
1440 min Summer	5.257	0.0	836
2160 min Summer	3.836	0.0	1188
2880 min Summer	3.063	0.0	1500
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4320
10080 min Summer	1.142	0.0	5136
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.504	0.504	0.4	5.2	O K
60 min Winter	99.608	0.608	0.4	6.3	O K
120 min Winter	99.674	0.674	0.4	7.0	O K
180 min Winter	99.674	0.674	0.4	7.0	O K
240 min Winter	99.651	0.651	0.4	6.7	O K
360 min Winter	99.611	0.611	0.4	6.3	O K
480 min Winter	99.563	0.563	0.4	5.8	O K
600 min Winter	99.513	0.513	0.4	5.3	O K
720 min Winter	99.463	0.463	0.4	4.8	O K
960 min Winter	99.365	0.365	0.4	3.7	O K
1440 min Winter	99.198	0.198	0.4	2.0	O K
2160 min Winter	99.054	0.054	0.4	0.5	O K
2880 min Winter	99.041	0.041	0.3	0.3	O K
4320 min Winter	99.030	0.030	0.2	0.2	O K
5760 min Winter	99.024	0.024	0.2	0.1	O K
7200 min Winter	99.020	0.020	0.1	0.1	O K
8640 min Winter	99.019	0.019	0.1	0.1	O K
10080 min Winter	99.018	0.018	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	118
180 min Winter	25.552	0.0	172
240 min Winter	20.570	0.0	198
360 min Winter	15.173	0.0	272
480 min Winter	12.206	0.0	348
600 min Winter	10.302	0.0	422
720 min Winter	8.963	0.0	494
960 min Winter	7.189	0.0	628
1440 min Winter	5.257	0.0	868
2160 min Winter	3.836	0.0	1144
2880 min Winter	3.063	0.0	1468
4320 min Winter	2.226	0.0	2180
5760 min Winter	1.773	0.0	2928
7200 min Winter	1.487	0.0	3552
8640 min Winter	1.289	0.0	4256
10080 min Winter	1.142	0.0	5120

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.016

Time (mins) From:	To:	Area (ha)
0	4	0.016

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	3.5
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	9.7	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 105 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.232	0.232	0.4	2.3	O K
30 min Summer	99.294	0.294	0.4	3.0	O K
60 min Summer	99.340	0.340	0.4	3.5	O K
120 min Summer	99.352	0.352	0.4	3.6	O K
180 min Summer	99.344	0.344	0.4	3.5	O K
240 min Summer	99.329	0.329	0.4	3.3	O K
360 min Summer	99.299	0.299	0.4	3.0	O K
480 min Summer	99.268	0.268	0.4	2.7	O K
600 min Summer	99.239	0.239	0.4	2.4	O K
720 min Summer	99.211	0.211	0.4	2.1	O K
960 min Summer	99.161	0.161	0.4	1.6	O K
1440 min Summer	99.089	0.089	0.4	0.8	O K
2160 min Summer	99.048	0.048	0.3	0.4	O K
2880 min Summer	99.039	0.039	0.3	0.3	O K
4320 min Summer	99.028	0.028	0.2	0.2	O K
5760 min Summer	99.023	0.023	0.2	0.1	O K
7200 min Summer	99.020	0.020	0.1	0.1	O K
8640 min Summer	99.018	0.018	0.1	0.1	O K
10080 min Summer	99.017	0.017	0.1	0.1	O K
15 min Winter	99.262	0.262	0.4	2.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	60
120 min Summer	34.307	0.0	100
180 min Summer	25.552	0.0	132
240 min Summer	20.570	0.0	166
360 min Summer	15.173	0.0	234
480 min Summer	12.206	0.0	302
600 min Summer	10.302	0.0	366
720 min Summer	8.963	0.0	430
960 min Summer	7.189	0.0	550
1440 min Summer	5.257	0.0	780
2160 min Summer	3.836	0.0	1104
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2204
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3624
8640 min Summer	1.289	0.0	4288
10080 min Summer	1.142	0.0	5088
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.335	0.335	0.4	3.4	O K
60 min Winter	99.393	0.393	0.4	4.0	O K
120 min Winter	99.412	0.412	0.4	4.2	O K
180 min Winter	99.398	0.398	0.4	4.1	O K
240 min Winter	99.377	0.377	0.4	3.9	O K
360 min Winter	99.330	0.330	0.4	3.4	O K
480 min Winter	99.281	0.281	0.4	2.9	O K
600 min Winter	99.235	0.235	0.4	2.4	O K
720 min Winter	99.192	0.192	0.4	1.9	O K
960 min Winter	99.118	0.118	0.4	1.1	O K
1440 min Winter	99.048	0.048	0.3	0.4	O K
2160 min Winter	99.035	0.035	0.2	0.3	O K
2880 min Winter	99.028	0.028	0.2	0.2	O K
4320 min Winter	99.021	0.021	0.1	0.1	O K
5760 min Winter	99.018	0.018	0.1	0.1	O K
7200 min Winter	99.017	0.017	0.1	0.1	O K
8640 min Winter	99.016	0.016	0.1	0.1	O K
10080 min Winter	99.015	0.015	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	114
180 min Winter	25.552	0.0	142
240 min Winter	20.570	0.0	180
360 min Winter	15.173	0.0	254
480 min Winter	12.206	0.0	326
600 min Winter	10.302	0.0	392
720 min Winter	8.963	0.0	456
960 min Winter	7.189	0.0	570
1440 min Winter	5.257	0.0	738
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1472
4320 min Winter	2.226	0.0	2140
5760 min Winter	1.773	0.0	2936
7200 min Winter	1.487	0.0	3552
8640 min Winter	1.289	0.0	4288
10080 min Winter	1.142	0.0	5144

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.011

Time (mins) From:	To:	Area (ha)
0	4	0.011

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	3.5
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	9.7	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 148 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.299	0.299	0.4	3.0	O K
30 min Summer	99.384	0.384	0.4	3.9	O K
60 min Summer	99.454	0.454	0.4	4.7	O K
120 min Summer	99.484	0.484	0.4	5.0	O K
180 min Summer	99.477	0.477	0.4	4.9	O K
240 min Summer	99.462	0.462	0.4	4.7	O K
360 min Summer	99.433	0.433	0.4	4.4	O K
480 min Summer	99.402	0.402	0.4	4.1	O K
600 min Summer	99.370	0.370	0.4	3.8	O K
720 min Summer	99.339	0.339	0.4	3.5	O K
960 min Summer	99.280	0.280	0.4	2.8	O K
1440 min Summer	99.181	0.181	0.4	1.8	O K
2160 min Summer	99.086	0.086	0.4	0.8	O K
2880 min Summer	99.049	0.049	0.3	0.4	O K
4320 min Summer	99.036	0.036	0.3	0.3	O K
5760 min Summer	99.029	0.029	0.2	0.2	O K
7200 min Summer	99.024	0.024	0.2	0.1	O K
8640 min Summer	99.021	0.021	0.1	0.1	O K
10080 min Summer	99.020	0.020	0.1	0.1	O K
15 min Winter	99.337	0.337	0.4	3.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	114
180 min Summer	25.552	0.0	144
240 min Summer	20.570	0.0	176
360 min Summer	15.173	0.0	244
480 min Summer	12.206	0.0	312
600 min Summer	10.302	0.0	380
720 min Summer	8.963	0.0	446
960 min Summer	7.189	0.0	576
1440 min Summer	5.257	0.0	812
2160 min Summer	3.836	0.0	1148
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2928
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4328
10080 min Summer	1.142	0.0	5080
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.436	0.436	0.4	4.5	O K
60 min Winter	99.521	0.521	0.4	5.4	O K
120 min Winter	99.568	0.568	0.4	5.9	O K
180 min Winter	99.559	0.559	0.4	5.8	O K
240 min Winter	99.539	0.539	0.4	5.5	O K
360 min Winter	99.495	0.495	0.4	5.1	O K
480 min Winter	99.446	0.446	0.4	4.6	O K
600 min Winter	99.396	0.396	0.4	4.1	O K
720 min Winter	99.348	0.348	0.4	3.5	O K
960 min Winter	99.256	0.256	0.4	2.6	O K
1440 min Winter	99.114	0.114	0.4	1.1	O K
2160 min Winter	99.045	0.045	0.3	0.4	O K
2880 min Winter	99.036	0.036	0.3	0.3	O K
4320 min Winter	99.026	0.026	0.2	0.2	O K
5760 min Winter	99.021	0.021	0.1	0.1	O K
7200 min Winter	99.019	0.019	0.1	0.1	O K
8640 min Winter	99.018	0.018	0.1	0.1	O K
10080 min Winter	99.017	0.017	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	168
240 min Winter	20.570	0.0	190
360 min Winter	15.173	0.0	266
480 min Winter	12.206	0.0	340
600 min Winter	10.302	0.0	412
720 min Winter	8.963	0.0	482
960 min Winter	7.189	0.0	610
1440 min Winter	5.257	0.0	836
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1460
4320 min Winter	2.226	0.0	2200
5760 min Winter	1.773	0.0	2928
7200 min Winter	1.487	0.0	3640
8640 min Winter	1.289	0.0	4496
10080 min Winter	1.142	0.0	4952

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.014

Time (mins) From:	To:	Area (ha)
0	4	0.014

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	3.5
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	9.7	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 108 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.234	0.234	0.4	2.6	O K
30 min Summer	99.298	0.298	0.4	3.3	O K
60 min Summer	99.346	0.346	0.4	3.8	O K
120 min Summer	99.360	0.360	0.4	4.0	O K
180 min Summer	99.352	0.352	0.4	3.9	O K
240 min Summer	99.337	0.337	0.4	3.7	O K
360 min Summer	99.307	0.307	0.4	3.4	O K
480 min Summer	99.277	0.277	0.4	3.0	O K
600 min Summer	99.247	0.247	0.4	2.7	O K
720 min Summer	99.219	0.219	0.4	2.4	O K
960 min Summer	99.168	0.168	0.4	1.8	O K
1440 min Summer	99.094	0.094	0.4	1.0	O K
2160 min Summer	99.049	0.049	0.4	0.5	O K
2880 min Summer	99.039	0.039	0.3	0.4	O K
4320 min Summer	99.029	0.029	0.2	0.2	O K
5760 min Summer	99.023	0.023	0.2	0.2	O K
7200 min Summer	99.020	0.020	0.1	0.1	O K
8640 min Summer	99.017	0.017	0.1	0.1	O K
10080 min Summer	99.015	0.015	0.1	0.1	O K
15 min Winter	99.265	0.265	0.4	2.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	60
120 min Summer	34.307	0.0	100
180 min Summer	25.552	0.0	132
240 min Summer	20.570	0.0	166
360 min Summer	15.173	0.0	234
480 min Summer	12.206	0.0	302
600 min Summer	10.302	0.0	368
720 min Summer	8.963	0.0	432
960 min Summer	7.189	0.0	552
1440 min Summer	5.257	0.0	780
2160 min Summer	3.836	0.0	1104
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2912
7200 min Summer	1.487	0.0	3648
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	4992
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.340	0.340	0.4	3.7	O K
60 min Winter	99.400	0.400	0.4	4.4	O K
120 min Winter	99.421	0.421	0.4	4.7	O K
180 min Winter	99.408	0.408	0.4	4.5	O K
240 min Winter	99.387	0.387	0.4	4.3	O K
360 min Winter	99.340	0.340	0.4	3.7	O K
480 min Winter	99.292	0.292	0.4	3.2	O K
600 min Winter	99.245	0.245	0.4	2.7	O K
720 min Winter	99.201	0.201	0.4	2.2	O K
960 min Winter	99.126	0.126	0.4	1.3	O K
1440 min Winter	99.049	0.049	0.4	0.5	O K
2160 min Winter	99.036	0.036	0.3	0.3	O K
2880 min Winter	99.029	0.029	0.2	0.2	O K
4320 min Winter	99.021	0.021	0.2	0.2	O K
5760 min Winter	99.017	0.017	0.1	0.1	O K
7200 min Winter	99.015	0.015	0.1	0.1	O K
8640 min Winter	99.014	0.014	0.1	0.1	O K
10080 min Winter	99.013	0.013	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	114
180 min Winter	25.552	0.0	142
240 min Winter	20.570	0.0	180
360 min Winter	15.173	0.0	256
480 min Winter	12.206	0.0	328
600 min Winter	10.302	0.0	394
720 min Winter	8.963	0.0	458
960 min Winter	7.189	0.0	576
1440 min Winter	5.257	0.0	742
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1472
4320 min Winter	2.226	0.0	2196
5760 min Winter	1.773	0.0	2832
7200 min Winter	1.487	0.0	3560
8640 min Winter	1.289	0.0	4496
10080 min Winter	1.142	0.0	5032

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.012

Time (mins) From:	To:	Area (ha)
0	4	0.012

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	7.5
Max Percolation (l/s)	10.4	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.500

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 119 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.254	0.254	0.4	2.6	O K
30 min Summer	99.324	0.324	0.4	3.3	O K
60 min Summer	99.378	0.378	0.4	3.9	O K
120 min Summer	99.395	0.395	0.4	4.0	O K
180 min Summer	99.387	0.387	0.4	4.0	O K
240 min Summer	99.372	0.372	0.4	3.8	O K
360 min Summer	99.342	0.342	0.4	3.5	O K
480 min Summer	99.311	0.311	0.4	3.2	O K
600 min Summer	99.281	0.281	0.4	2.8	O K
720 min Summer	99.252	0.252	0.4	2.5	O K
960 min Summer	99.198	0.198	0.4	2.0	O K
1440 min Summer	99.115	0.115	0.4	1.1	O K
2160 min Summer	99.054	0.054	0.4	0.5	O K
2880 min Summer	99.042	0.042	0.3	0.3	O K
4320 min Summer	99.031	0.031	0.2	0.2	O K
5760 min Summer	99.025	0.025	0.2	0.2	O K
7200 min Summer	99.021	0.021	0.1	0.1	O K
8640 min Summer	99.019	0.019	0.1	0.1	O K
10080 min Summer	99.018	0.018	0.1	0.1	O K
15 min Winter	99.287	0.287	0.4	2.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	60
120 min Summer	34.307	0.0	104
180 min Summer	25.552	0.0	136
240 min Summer	20.570	0.0	168
360 min Summer	15.173	0.0	238
480 min Summer	12.206	0.0	304
600 min Summer	10.302	0.0	372
720 min Summer	8.963	0.0	436
960 min Summer	7.189	0.0	560
1440 min Summer	5.257	0.0	794
2160 min Summer	3.836	0.0	1104
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2192
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4264
10080 min Summer	1.142	0.0	5120
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.368	0.368	0.4	3.8	O K
60 min Winter	99.436	0.436	0.4	4.5	O K
120 min Winter	99.463	0.463	0.4	4.8	O K
180 min Winter	99.450	0.450	0.4	4.6	O K
240 min Winter	99.430	0.430	0.4	4.4	O K
360 min Winter	99.384	0.384	0.4	3.9	O K
480 min Winter	99.335	0.335	0.4	3.4	O K
600 min Winter	99.287	0.287	0.4	2.9	O K
720 min Winter	99.241	0.241	0.4	2.4	O K
960 min Winter	99.160	0.160	0.4	1.6	O K
1440 min Winter	99.057	0.057	0.4	0.5	O K
2160 min Winter	99.039	0.039	0.3	0.3	O K
2880 min Winter	99.031	0.031	0.2	0.2	O K
4320 min Winter	99.023	0.023	0.2	0.1	O K
5760 min Winter	99.019	0.019	0.1	0.1	O K
7200 min Winter	99.018	0.018	0.1	0.1	O K
8640 min Winter	99.016	0.016	0.1	0.1	O K
10080 min Winter	99.015	0.015	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	146
240 min Winter	20.570	0.0	184
360 min Winter	15.173	0.0	258
480 min Winter	12.206	0.0	332
600 min Winter	10.302	0.0	400
720 min Winter	8.963	0.0	466
960 min Winter	7.189	0.0	588
1440 min Winter	5.257	0.0	778
2160 min Winter	3.836	0.0	1100
2880 min Winter	3.063	0.0	1472
4320 min Winter	2.226	0.0	2176
5760 min Winter	1.773	0.0	2896
7200 min Winter	1.487	0.0	3632
8640 min Winter	1.289	0.0	4376
10080 min Winter	1.142	0.0	5064

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.012

Time (mins) From:	To:	Area (ha)
0	4	0.012

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	3.5
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	9.7	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.500

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 148 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.299	0.299	0.4	3.0	O K
30 min Summer	99.384	0.384	0.4	3.9	O K
60 min Summer	99.454	0.454	0.4	4.7	O K
120 min Summer	99.484	0.484	0.4	5.0	O K
180 min Summer	99.477	0.477	0.4	4.9	O K
240 min Summer	99.462	0.462	0.4	4.7	O K
360 min Summer	99.433	0.433	0.4	4.4	O K
480 min Summer	99.402	0.402	0.4	4.1	O K
600 min Summer	99.370	0.370	0.4	3.8	O K
720 min Summer	99.339	0.339	0.4	3.5	O K
960 min Summer	99.280	0.280	0.4	2.8	O K
1440 min Summer	99.181	0.181	0.4	1.8	O K
2160 min Summer	99.086	0.086	0.4	0.8	O K
2880 min Summer	99.049	0.049	0.3	0.4	O K
4320 min Summer	99.036	0.036	0.3	0.3	O K
5760 min Summer	99.029	0.029	0.2	0.2	O K
7200 min Summer	99.024	0.024	0.2	0.1	O K
8640 min Summer	99.021	0.021	0.1	0.1	O K
10080 min Summer	99.020	0.020	0.1	0.1	O K
15 min Winter	99.337	0.337	0.4	3.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	114
180 min Summer	25.552	0.0	144
240 min Summer	20.570	0.0	176
360 min Summer	15.173	0.0	244
480 min Summer	12.206	0.0	312
600 min Summer	10.302	0.0	380
720 min Summer	8.963	0.0	446
960 min Summer	7.189	0.0	576
1440 min Summer	5.257	0.0	812
2160 min Summer	3.836	0.0	1148
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2928
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4328
10080 min Summer	1.142	0.0	5080
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.436	0.436	0.4	4.5	O K
60 min Winter	99.521	0.521	0.4	5.4	O K
120 min Winter	99.568	0.568	0.4	5.9	O K
180 min Winter	99.559	0.559	0.4	5.8	O K
240 min Winter	99.539	0.539	0.4	5.5	O K
360 min Winter	99.495	0.495	0.4	5.1	O K
480 min Winter	99.446	0.446	0.4	4.6	O K
600 min Winter	99.396	0.396	0.4	4.1	O K
720 min Winter	99.348	0.348	0.4	3.5	O K
960 min Winter	99.256	0.256	0.4	2.6	O K
1440 min Winter	99.114	0.114	0.4	1.1	O K
2160 min Winter	99.045	0.045	0.3	0.4	O K
2880 min Winter	99.036	0.036	0.3	0.3	O K
4320 min Winter	99.026	0.026	0.2	0.2	O K
5760 min Winter	99.021	0.021	0.1	0.1	O K
7200 min Winter	99.019	0.019	0.1	0.1	O K
8640 min Winter	99.018	0.018	0.1	0.1	O K
10080 min Winter	99.017	0.017	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	168
240 min Winter	20.570	0.0	190
360 min Winter	15.173	0.0	266
480 min Winter	12.206	0.0	340
600 min Winter	10.302	0.0	412
720 min Winter	8.963	0.0	482
960 min Winter	7.189	0.0	610
1440 min Winter	5.257	0.0	836
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1460
4320 min Winter	2.226	0.0	2200
5760 min Winter	1.773	0.0	2928
7200 min Winter	1.487	0.0	3640
8640 min Winter	1.289	0.0	4496
10080 min Winter	1.142	0.0	4952

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.014

Time (mins) From:	To:	Area (ha)
0	4	0.014

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	3.5
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	9.7	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.600

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 68 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.159	0.159	0.5	2.2	O K
30 min Summer	99.197	0.197	0.5	2.8	O K
60 min Summer	99.219	0.219	0.5	3.1	O K
120 min Summer	99.220	0.220	0.5	3.2	O K
180 min Summer	99.209	0.209	0.5	3.0	O K
240 min Summer	99.194	0.194	0.5	2.8	O K
360 min Summer	99.165	0.165	0.5	2.3	O K
480 min Summer	99.139	0.139	0.5	1.9	O K
600 min Summer	99.115	0.115	0.5	1.6	O K
720 min Summer	99.095	0.095	0.5	1.3	O K
960 min Summer	99.066	0.066	0.5	0.8	O K
1440 min Summer	99.045	0.045	0.4	0.5	O K
2160 min Summer	99.034	0.034	0.3	0.4	O K
2880 min Summer	99.027	0.027	0.3	0.3	O K
4320 min Summer	99.020	0.020	0.2	0.2	O K
5760 min Summer	99.018	0.018	0.2	0.1	O K
7200 min Summer	99.017	0.017	0.1	0.1	O K
8640 min Summer	99.015	0.015	0.1	0.1	O K
10080 min Summer	99.015	0.015	0.1	0.1	O K
15 min Winter	99.180	0.180	0.5	2.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	17
30 min Summer	85.821	0.0	31
60 min Summer	55.250	0.0	54
120 min Summer	34.307	0.0	86
180 min Summer	25.552	0.0	122
240 min Summer	20.570	0.0	156
360 min Summer	15.173	0.0	222
480 min Summer	12.206	0.0	286
600 min Summer	10.302	0.0	346
720 min Summer	8.963	0.0	404
960 min Summer	7.189	0.0	512
1440 min Summer	5.257	0.0	738
2160 min Summer	3.836	0.0	1100
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2164
5760 min Summer	1.773	0.0	2912
7200 min Summer	1.487	0.0	3600
8640 min Summer	1.289	0.0	4328
10080 min Summer	1.142	0.0	5048
15 min Winter	127.204	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.225	0.225	0.5	3.2	O K
60 min Winter	99.253	0.253	0.5	3.6	O K
120 min Winter	99.253	0.253	0.5	3.6	O K
180 min Winter	99.235	0.235	0.5	3.4	O K
240 min Winter	99.211	0.211	0.5	3.0	O K
360 min Winter	99.166	0.166	0.5	2.3	O K
480 min Winter	99.125	0.125	0.5	1.7	O K
600 min Winter	99.091	0.091	0.5	1.2	O K
720 min Winter	99.065	0.065	0.5	0.8	O K
960 min Winter	99.045	0.045	0.5	0.5	O K
1440 min Winter	99.034	0.034	0.3	0.4	O K
2160 min Winter	99.025	0.025	0.2	0.2	O K
2880 min Winter	99.020	0.020	0.2	0.2	O K
4320 min Winter	99.017	0.017	0.1	0.1	O K
5760 min Winter	99.015	0.015	0.1	0.1	O K
7200 min Winter	99.014	0.014	0.1	0.1	O K
8640 min Winter	99.013	0.013	0.1	0.1	O K
10080 min Winter	99.012	0.012	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	31
60 min Winter	55.250	0.0	58
120 min Winter	34.307	0.0	94
180 min Winter	25.552	0.0	132
240 min Winter	20.570	0.0	170
360 min Winter	15.173	0.0	238
480 min Winter	12.206	0.0	302
600 min Winter	10.302	0.0	358
720 min Winter	8.963	0.0	406
960 min Winter	7.189	0.0	504
1440 min Winter	5.257	0.0	738
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1484
4320 min Winter	2.226	0.0	2224
5760 min Winter	1.773	0.0	2896
7200 min Winter	1.487	0.0	3648
8640 min Winter	1.289	0.0	4256
10080 min Winter	1.142	0.0	5128

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.011

Time (mins) From:	To:	Area (ha)
0	4	0.011

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	13.9	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 106 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.237	0.237	0.8	5.5	O K
30 min Summer	99.300	0.300	0.8	7.1	O K
60 min Summer	99.346	0.346	0.8	8.2	O K
120 min Summer	99.358	0.358	0.8	8.5	O K
180 min Summer	99.349	0.349	0.8	8.3	O K
240 min Summer	99.334	0.334	0.8	7.9	O K
360 min Summer	99.304	0.304	0.8	7.1	O K
480 min Summer	99.273	0.273	0.8	6.4	O K
600 min Summer	99.244	0.244	0.8	5.7	O K
720 min Summer	99.215	0.215	0.8	5.0	O K
960 min Summer	99.165	0.165	0.8	3.7	O K
1440 min Summer	99.092	0.092	0.8	1.9	O K
2160 min Summer	99.048	0.048	0.8	0.9	O K
2880 min Summer	99.039	0.039	0.6	0.6	O K
4320 min Summer	99.029	0.029	0.5	0.4	O K
5760 min Summer	99.025	0.025	0.4	0.3	O K
7200 min Summer	99.023	0.023	0.3	0.2	O K
8640 min Summer	99.021	0.021	0.3	0.2	O K
10080 min Summer	99.020	0.020	0.2	0.2	O K
15 min Winter	99.267	0.267	0.8	6.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	60
120 min Summer	34.307	0.0	100
180 min Summer	25.552	0.0	132
240 min Summer	20.570	0.0	166
360 min Summer	15.173	0.0	234
480 min Summer	12.206	0.0	302
600 min Summer	10.302	0.0	368
720 min Summer	8.963	0.0	432
960 min Summer	7.189	0.0	552
1440 min Summer	5.257	0.0	780
2160 min Summer	3.836	0.0	1104
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2896
7200 min Summer	1.487	0.0	3624
8640 min Summer	1.289	0.0	4392
10080 min Summer	1.142	0.0	5032
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.341	0.341	0.8	8.1	O K
60 min Winter	99.399	0.399	0.8	9.5	O K
120 min Winter	99.419	0.419	0.8	10.0	O K
180 min Winter	99.405	0.405	0.8	9.6	O K
240 min Winter	99.383	0.383	0.8	9.1	O K
360 min Winter	99.336	0.336	0.8	7.9	O K
480 min Winter	99.287	0.287	0.8	6.7	O K
600 min Winter	99.241	0.241	0.8	5.6	O K
720 min Winter	99.197	0.197	0.8	4.5	O K
960 min Winter	99.123	0.123	0.8	2.7	O K
1440 min Winter	99.049	0.049	0.8	0.9	O K
2160 min Winter	99.036	0.036	0.6	0.6	O K
2880 min Winter	99.029	0.029	0.5	0.4	O K
4320 min Winter	99.023	0.023	0.3	0.3	O K
5760 min Winter	99.021	0.021	0.3	0.2	O K
7200 min Winter	99.019	0.019	0.2	0.2	O K
8640 min Winter	99.018	0.018	0.2	0.1	O K
10080 min Winter	99.017	0.017	0.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	114
180 min Winter	25.552	0.0	142
240 min Winter	20.570	0.0	180
360 min Winter	15.173	0.0	256
480 min Winter	12.206	0.0	326
600 min Winter	10.302	0.0	394
720 min Winter	8.963	0.0	456
960 min Winter	7.189	0.0	576
1440 min Winter	5.257	0.0	738
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1452
4320 min Winter	2.226	0.0	2204
5760 min Winter	1.773	0.0	2936
7200 min Winter	1.487	0.0	3640
8640 min Winter	1.289	0.0	4360
10080 min Winter	1.142	0.0	5048

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.026

Time (mins) From:	To:	Area (ha)
0	4	0.026

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	6.3
Membrane Percolation (mm/hr)	1000	Length (m)	13.0
Max Percolation (l/s)	22.8	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 169 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.331	0.331	0.3	3.3	O K
30 min Summer	99.427	0.427	0.3	4.3	O K
60 min Summer	99.509	0.509	0.3	5.1	O K
120 min Summer	99.551	0.551	0.3	5.5	O K
180 min Summer	99.545	0.545	0.3	5.5	O K
240 min Summer	99.530	0.530	0.3	5.3	O K
360 min Summer	99.500	0.500	0.3	5.0	O K
480 min Summer	99.469	0.469	0.3	4.7	O K
600 min Summer	99.438	0.438	0.3	4.4	O K
720 min Summer	99.406	0.406	0.3	4.0	O K
960 min Summer	99.344	0.344	0.3	3.4	O K
1440 min Summer	99.236	0.236	0.3	2.3	O K
2160 min Summer	99.121	0.121	0.3	1.1	O K
2880 min Summer	99.061	0.061	0.3	0.5	O K
4320 min Summer	99.040	0.040	0.3	0.3	O K
5760 min Summer	99.032	0.032	0.2	0.2	O K
7200 min Summer	99.027	0.027	0.2	0.2	O K
8640 min Summer	99.023	0.023	0.2	0.1	O K
10080 min Summer	99.021	0.021	0.1	0.1	O K
15 min Winter	99.373	0.373	0.3	3.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	120
180 min Summer	25.552	0.0	152
240 min Summer	20.570	0.0	182
360 min Summer	15.173	0.0	250
480 min Summer	12.206	0.0	318
600 min Summer	10.302	0.0	386
720 min Summer	8.963	0.0	454
960 min Summer	7.189	0.0	584
1440 min Summer	5.257	0.0	834
2160 min Summer	3.836	0.0	1168
2880 min Summer	3.063	0.0	1496
4320 min Summer	2.226	0.0	2204
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4344
10080 min Summer	1.142	0.0	5136
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.485	0.485	0.3	4.8	O K
60 min Winter	99.584	0.584	0.3	5.9	O K
120 min Winter	99.644	0.644	0.3	6.5	O K
180 min Winter	99.642	0.642	0.3	6.4	O K
240 min Winter	99.619	0.619	0.3	6.2	O K
360 min Winter	99.578	0.578	0.3	5.8	O K
480 min Winter	99.530	0.530	0.3	5.3	O K
600 min Winter	99.480	0.480	0.3	4.8	O K
720 min Winter	99.430	0.430	0.3	4.3	O K
960 min Winter	99.334	0.334	0.3	3.3	O K
1440 min Winter	99.173	0.173	0.3	1.7	O K
2160 min Winter	99.050	0.050	0.3	0.4	O K
2880 min Winter	99.040	0.040	0.3	0.3	O K
4320 min Winter	99.029	0.029	0.2	0.2	O K
5760 min Winter	99.023	0.023	0.2	0.1	O K
7200 min Winter	99.020	0.020	0.1	0.1	O K
8640 min Winter	99.019	0.019	0.1	0.1	O K
10080 min Winter	99.017	0.017	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	118
180 min Winter	25.552	0.0	170
240 min Winter	20.570	0.0	196
360 min Winter	15.173	0.0	270
480 min Winter	12.206	0.0	346
600 min Winter	10.302	0.0	420
720 min Winter	8.963	0.0	492
960 min Winter	7.189	0.0	626
1440 min Winter	5.257	0.0	866
2160 min Winter	3.836	0.0	1100
2880 min Winter	3.063	0.0	1468
4320 min Winter	2.226	0.0	2196
5760 min Winter	1.773	0.0	2936
7200 min Winter	1.487	0.0	3584
8640 min Winter	1.289	0.0	4336
10080 min Winter	1.142	0.0	5048

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.015

Time (mins) From:	To:	Area (ha)
0	4	0.015

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	3.4
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	9.4	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 108 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.232	0.232	0.3	1.7	O K
30 min Summer	99.297	0.297	0.3	2.2	O K
60 min Summer	99.345	0.345	0.3	2.5	O K
120 min Summer	99.360	0.360	0.3	2.7	O K
180 min Summer	99.352	0.352	0.3	2.6	O K
240 min Summer	99.337	0.337	0.3	2.5	O K
360 min Summer	99.307	0.307	0.3	2.3	O K
480 min Summer	99.277	0.277	0.3	2.0	O K
600 min Summer	99.247	0.247	0.3	1.8	O K
720 min Summer	99.219	0.219	0.3	1.6	O K
960 min Summer	99.168	0.168	0.3	1.2	O K
1440 min Summer	99.094	0.094	0.3	0.7	O K
2160 min Summer	99.049	0.049	0.2	0.3	O K
2880 min Summer	99.040	0.040	0.2	0.3	O K
4320 min Summer	99.029	0.029	0.1	0.2	O K
5760 min Summer	99.023	0.023	0.1	0.1	O K
7200 min Summer	99.020	0.020	0.1	0.1	O K
8640 min Summer	99.017	0.017	0.1	0.1	O K
10080 min Summer	99.015	0.015	0.1	0.1	O K
15 min Winter	99.262	0.262	0.3	1.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	60
120 min Summer	34.307	0.0	100
180 min Summer	25.552	0.0	132
240 min Summer	20.570	0.0	166
360 min Summer	15.173	0.0	234
480 min Summer	12.206	0.0	302
600 min Summer	10.302	0.0	368
720 min Summer	8.963	0.0	432
960 min Summer	7.189	0.0	552
1440 min Summer	5.257	0.0	780
2160 min Summer	3.836	0.0	1104
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2904
7200 min Summer	1.487	0.0	3656
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5120
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.338	0.338	0.3	2.5	O K
60 min Winter	99.398	0.398	0.3	2.9	O K
120 min Winter	99.420	0.420	0.3	3.1	O K
180 min Winter	99.408	0.408	0.3	3.0	O K
240 min Winter	99.387	0.387	0.3	2.9	O K
360 min Winter	99.340	0.340	0.3	2.5	O K
480 min Winter	99.292	0.292	0.3	2.2	O K
600 min Winter	99.245	0.245	0.3	1.8	O K
720 min Winter	99.201	0.201	0.3	1.5	O K
960 min Winter	99.126	0.126	0.3	0.9	O K
1440 min Winter	99.049	0.049	0.2	0.3	O K
2160 min Winter	99.036	0.036	0.2	0.2	O K
2880 min Winter	99.029	0.029	0.1	0.2	O K
4320 min Winter	99.021	0.021	0.1	0.1	O K
5760 min Winter	99.017	0.017	0.1	0.1	O K
7200 min Winter	99.014	0.014	0.1	0.1	O K
8640 min Winter	99.012	0.012	0.1	0.1	O K
10080 min Winter	99.011	0.011	0.1	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	114
180 min Winter	25.552	0.0	142
240 min Winter	20.570	0.0	180
360 min Winter	15.173	0.0	256
480 min Winter	12.206	0.0	328
600 min Winter	10.302	0.0	394
720 min Winter	8.963	0.0	458
960 min Winter	7.189	0.0	576
1440 min Winter	5.257	0.0	744
2160 min Winter	3.836	0.0	1100
2880 min Winter	3.063	0.0	1472
4320 min Winter	2.226	0.0	2200
5760 min Winter	1.773	0.0	2832
7200 min Winter	1.487	0.0	3664
8640 min Winter	1.289	0.0	4376
10080 min Winter	1.142	0.0	5144

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.008

Time (mins) From:	To:	Area (ha)
0	4	0.008

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	5.0
Max Percolation (l/s)	6.9	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 84 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.201	0.201	0.4	2.5	O K
30 min Summer	99.252	0.252	0.4	3.2	O K
60 min Summer	99.286	0.286	0.4	3.6	O K
120 min Summer	99.292	0.292	0.4	3.7	O K
180 min Summer	99.281	0.281	0.4	3.6	O K
240 min Summer	99.266	0.266	0.4	3.4	O K
360 min Summer	99.236	0.236	0.4	3.0	O K
480 min Summer	99.207	0.207	0.4	2.6	O K
600 min Summer	99.179	0.179	0.4	2.2	O K
720 min Summer	99.154	0.154	0.4	1.9	O K
960 min Summer	99.111	0.111	0.4	1.3	O K
1440 min Summer	99.059	0.059	0.4	0.6	O K
2160 min Summer	99.041	0.041	0.4	0.4	O K
2880 min Summer	99.034	0.034	0.3	0.3	O K
4320 min Summer	99.025	0.025	0.2	0.2	O K
5760 min Summer	99.023	0.023	0.2	0.1	O K
7200 min Summer	99.021	0.021	0.1	0.1	O K
8640 min Summer	99.019	0.019	0.1	0.1	O K
10080 min Summer	99.018	0.018	0.1	0.1	O K
15 min Winter	99.227	0.227	0.4	2.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	17
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	60
120 min Summer	34.307	0.0	94
180 min Summer	25.552	0.0	126
240 min Summer	20.570	0.0	160
360 min Summer	15.173	0.0	228
480 min Summer	12.206	0.0	294
600 min Summer	10.302	0.0	358
720 min Summer	8.963	0.0	420
960 min Summer	7.189	0.0	538
1440 min Summer	5.257	0.0	752
2160 min Summer	3.836	0.0	1104
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2872
7200 min Summer	1.487	0.0	3624
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5104
15 min Winter	127.204	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.287	0.287	0.4	3.6	O K
60 min Winter	99.331	0.331	0.4	4.2	O K
120 min Winter	99.338	0.338	0.4	4.3	O K
180 min Winter	99.323	0.323	0.4	4.1	O K
240 min Winter	99.300	0.300	0.4	3.8	O K
360 min Winter	99.253	0.253	0.4	3.2	O K
480 min Winter	99.206	0.206	0.4	2.6	O K
600 min Winter	99.164	0.164	0.4	2.0	O K
720 min Winter	99.126	0.126	0.4	1.5	O K
960 min Winter	99.069	0.069	0.4	0.7	O K
1440 min Winter	99.042	0.042	0.4	0.4	O K
2160 min Winter	99.031	0.031	0.3	0.2	O K
2880 min Winter	99.025	0.025	0.2	0.2	O K
4320 min Winter	99.022	0.022	0.2	0.1	O K
5760 min Winter	99.019	0.019	0.1	0.1	O K
7200 min Winter	99.018	0.018	0.1	0.1	O K
8640 min Winter	99.017	0.017	0.1	0.1	O K
10080 min Winter	99.016	0.016	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	31
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	100
180 min Winter	25.552	0.0	138
240 min Winter	20.570	0.0	176
360 min Winter	15.173	0.0	248
480 min Winter	12.206	0.0	316
600 min Winter	10.302	0.0	380
720 min Winter	8.963	0.0	440
960 min Winter	7.189	0.0	540
1440 min Winter	5.257	0.0	736
2160 min Winter	3.836	0.0	1096
2880 min Winter	3.063	0.0	1468
4320 min Winter	2.226	0.0	2128
5760 min Winter	1.773	0.0	2896
7200 min Winter	1.487	0.0	3656
8640 min Winter	1.289	0.0	4344
10080 min Winter	1.142	0.0	4992

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.012

Time (mins) From:	To:	Area (ha)
0	4	0.012

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	3.4
Membrane Percolation (mm/hr)	1000	Length (m)	13.0
Max Percolation (l/s)	12.3	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 108 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.232	0.232	0.3	1.7	O K
30 min Summer	99.297	0.297	0.3	2.2	O K
60 min Summer	99.345	0.345	0.3	2.5	O K
120 min Summer	99.360	0.360	0.3	2.7	O K
180 min Summer	99.352	0.352	0.3	2.6	O K
240 min Summer	99.337	0.337	0.3	2.5	O K
360 min Summer	99.307	0.307	0.3	2.3	O K
480 min Summer	99.277	0.277	0.3	2.0	O K
600 min Summer	99.247	0.247	0.3	1.8	O K
720 min Summer	99.219	0.219	0.3	1.6	O K
960 min Summer	99.168	0.168	0.3	1.2	O K
1440 min Summer	99.094	0.094	0.3	0.7	O K
2160 min Summer	99.049	0.049	0.2	0.3	O K
2880 min Summer	99.040	0.040	0.2	0.3	O K
4320 min Summer	99.029	0.029	0.1	0.2	O K
5760 min Summer	99.023	0.023	0.1	0.1	O K
7200 min Summer	99.020	0.020	0.1	0.1	O K
8640 min Summer	99.017	0.017	0.1	0.1	O K
10080 min Summer	99.015	0.015	0.1	0.1	O K
15 min Winter	99.262	0.262	0.3	1.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	60
120 min Summer	34.307	0.0	100
180 min Summer	25.552	0.0	132
240 min Summer	20.570	0.0	166
360 min Summer	15.173	0.0	234
480 min Summer	12.206	0.0	302
600 min Summer	10.302	0.0	368
720 min Summer	8.963	0.0	432
960 min Summer	7.189	0.0	552
1440 min Summer	5.257	0.0	780
2160 min Summer	3.836	0.0	1104
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2904
7200 min Summer	1.487	0.0	3656
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5120
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.338	0.338	0.3	2.5	O K
60 min Winter	99.398	0.398	0.3	2.9	O K
120 min Winter	99.420	0.420	0.3	3.1	O K
180 min Winter	99.408	0.408	0.3	3.0	O K
240 min Winter	99.387	0.387	0.3	2.9	O K
360 min Winter	99.340	0.340	0.3	2.5	O K
480 min Winter	99.292	0.292	0.3	2.2	O K
600 min Winter	99.245	0.245	0.3	1.8	O K
720 min Winter	99.201	0.201	0.3	1.5	O K
960 min Winter	99.126	0.126	0.3	0.9	O K
1440 min Winter	99.049	0.049	0.2	0.3	O K
2160 min Winter	99.036	0.036	0.2	0.2	O K
2880 min Winter	99.029	0.029	0.1	0.2	O K
4320 min Winter	99.021	0.021	0.1	0.1	O K
5760 min Winter	99.017	0.017	0.1	0.1	O K
7200 min Winter	99.014	0.014	0.1	0.1	O K
8640 min Winter	99.012	0.012	0.1	0.1	O K
10080 min Winter	99.011	0.011	0.1	0.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	114
180 min Winter	25.552	0.0	142
240 min Winter	20.570	0.0	180
360 min Winter	15.173	0.0	256
480 min Winter	12.206	0.0	328
600 min Winter	10.302	0.0	394
720 min Winter	8.963	0.0	458
960 min Winter	7.189	0.0	576
1440 min Winter	5.257	0.0	744
2160 min Winter	3.836	0.0	1100
2880 min Winter	3.063	0.0	1472
4320 min Winter	2.226	0.0	2200
5760 min Winter	1.773	0.0	2832
7200 min Winter	1.487	0.0	3664
8640 min Winter	1.289	0.0	4376
10080 min Winter	1.142	0.0	5144

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.008

Time (mins) From:	To:	Area (ha)
0	4	0.008

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	5.0
Max Percolation (l/s)	6.9	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 66 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.161	0.161	0.6	2.4	O K
30 min Summer	99.197	0.197	0.6	3.0	O K
60 min Summer	99.217	0.217	0.6	3.3	O K
120 min Summer	99.217	0.217	0.6	3.3	O K
180 min Summer	99.205	0.205	0.6	3.1	O K
240 min Summer	99.190	0.190	0.6	2.9	O K
360 min Summer	99.161	0.161	0.6	2.4	O K
480 min Summer	99.134	0.134	0.6	2.0	O K
600 min Summer	99.111	0.111	0.6	1.6	O K
720 min Summer	99.091	0.091	0.6	1.3	O K
960 min Summer	99.063	0.063	0.6	0.8	O K
1440 min Summer	99.044	0.044	0.5	0.5	O K
2160 min Summer	99.033	0.033	0.4	0.3	O K
2880 min Summer	99.030	0.030	0.3	0.2	O K
4320 min Summer	99.025	0.025	0.2	0.2	O K
5760 min Summer	99.023	0.023	0.2	0.1	O K
7200 min Summer	99.021	0.021	0.1	0.1	O K
8640 min Summer	99.019	0.019	0.1	0.1	O K
10080 min Summer	99.018	0.018	0.1	0.1	O K
15 min Winter	99.181	0.181	0.6	2.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	17
30 min Summer	85.821	0.0	31
60 min Summer	55.250	0.0	54
120 min Summer	34.307	0.0	86
180 min Summer	25.552	0.0	120
240 min Summer	20.570	0.0	154
360 min Summer	15.173	0.0	220
480 min Summer	12.206	0.0	284
600 min Summer	10.302	0.0	344
720 min Summer	8.963	0.0	402
960 min Summer	7.189	0.0	512
1440 min Summer	5.257	0.0	736
2160 min Summer	3.836	0.0	1100
2880 min Summer	3.063	0.0	1448
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2872
7200 min Summer	1.487	0.0	3624
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5104
15 min Winter	127.204	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.224	0.224	0.6	3.5	O K
60 min Winter	99.251	0.251	0.6	3.9	O K
120 min Winter	99.248	0.248	0.6	3.9	O K
180 min Winter	99.229	0.229	0.6	3.6	O K
240 min Winter	99.205	0.205	0.6	3.2	O K
360 min Winter	99.160	0.160	0.6	2.4	O K
480 min Winter	99.119	0.119	0.6	1.7	O K
600 min Winter	99.085	0.085	0.6	1.2	O K
720 min Winter	99.061	0.061	0.6	0.7	O K
960 min Winter	99.044	0.044	0.5	0.5	O K
1440 min Winter	99.033	0.033	0.4	0.3	O K
2160 min Winter	99.028	0.028	0.3	0.2	O K
2880 min Winter	99.025	0.025	0.2	0.2	O K
4320 min Winter	99.022	0.022	0.2	0.1	O K
5760 min Winter	99.019	0.019	0.1	0.1	O K
7200 min Winter	99.018	0.018	0.1	0.1	O K
8640 min Winter	99.017	0.017	0.1	0.1	O K
10080 min Winter	99.016	0.016	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	31
60 min Winter	55.250	0.0	58
120 min Winter	34.307	0.0	94
180 min Winter	25.552	0.0	132
240 min Winter	20.570	0.0	168
360 min Winter	15.173	0.0	236
480 min Winter	12.206	0.0	300
600 min Winter	10.302	0.0	356
720 min Winter	8.963	0.0	404
960 min Winter	7.189	0.0	504
1440 min Winter	5.257	0.0	736
2160 min Winter	3.836	0.0	1056
2880 min Winter	3.063	0.0	1468
4320 min Winter	2.226	0.0	2128
5760 min Winter	1.773	0.0	2896
7200 min Winter	1.487	0.0	3656
8640 min Winter	1.289	0.0	4344
10080 min Winter	1.142	0.0	4992

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.012

Time (mins) From:	To:	Area (ha)
0	4	0.012

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	3.4
Membrane Percolation (mm/hr)	1000	Length (m)	16.4
Max Percolation (l/s)	15.5	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 144 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.292	0.292	0.6	5.4	O K
30 min Summer	99.374	0.374	0.6	7.0	O K
60 min Summer	99.442	0.442	0.6	8.3	O K
120 min Summer	99.469	0.469	0.6	8.8	O K
180 min Summer	99.462	0.462	0.6	8.7	O K
240 min Summer	99.447	0.447	0.6	8.4	O K
360 min Summer	99.418	0.418	0.6	7.8	O K
480 min Summer	99.387	0.387	0.6	7.2	O K
600 min Summer	99.355	0.355	0.6	6.6	O K
720 min Summer	99.324	0.324	0.6	6.0	O K
960 min Summer	99.266	0.266	0.6	4.9	O K
1440 min Summer	99.169	0.169	0.6	3.1	O K
2160 min Summer	99.079	0.079	0.6	1.3	O K
2880 min Summer	99.048	0.048	0.6	0.7	O K
4320 min Summer	99.035	0.035	0.5	0.5	O K
5760 min Summer	99.028	0.028	0.4	0.3	O K
7200 min Summer	99.024	0.024	0.3	0.3	O K
8640 min Summer	99.021	0.021	0.3	0.2	O K
10080 min Summer	99.019	0.019	0.2	0.2	O K
15 min Winter	99.329	0.329	0.6	6.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	112
180 min Summer	25.552	0.0	142
240 min Summer	20.570	0.0	174
360 min Summer	15.173	0.0	244
480 min Summer	12.206	0.0	310
600 min Summer	10.302	0.0	380
720 min Summer	8.963	0.0	444
960 min Summer	7.189	0.0	570
1440 min Summer	5.257	0.0	810
2160 min Summer	3.836	0.0	1144
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3624
8640 min Summer	1.289	0.0	4384
10080 min Summer	1.142	0.0	5112
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.425	0.425	0.6	8.0	O K
60 min Winter	99.507	0.507	0.6	9.5	O K
120 min Winter	99.551	0.551	0.6	10.4	O K
180 min Winter	99.541	0.541	0.6	10.2	O K
240 min Winter	99.520	0.520	0.6	9.8	O K
360 min Winter	99.476	0.476	0.6	9.0	O K
480 min Winter	99.428	0.428	0.6	8.0	O K
600 min Winter	99.378	0.378	0.6	7.1	O K
720 min Winter	99.329	0.329	0.6	6.1	O K
960 min Winter	99.240	0.240	0.6	4.4	O K
1440 min Winter	99.102	0.102	0.6	1.8	O K
2160 min Winter	99.044	0.044	0.6	0.7	O K
2880 min Winter	99.035	0.035	0.5	0.5	O K
4320 min Winter	99.026	0.026	0.3	0.3	O K
5760 min Winter	99.021	0.021	0.3	0.2	O K
7200 min Winter	99.019	0.019	0.2	0.2	O K
8640 min Winter	99.017	0.017	0.2	0.1	O K
10080 min Winter	99.016	0.016	0.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	166
240 min Winter	20.570	0.0	188
360 min Winter	15.173	0.0	264
480 min Winter	12.206	0.0	340
600 min Winter	10.302	0.0	410
720 min Winter	8.963	0.0	478
960 min Winter	7.189	0.0	608
1440 min Winter	5.257	0.0	824
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1468
4320 min Winter	2.226	0.0	2188
5760 min Winter	1.773	0.0	2888
7200 min Winter	1.487	0.0	3584
8640 min Winter	1.289	0.0	4248
10080 min Winter	1.142	0.0	5056

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.025

Time (mins) From:	To:	Area (ha)
0	4	0.025

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	6.4
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	17.8	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.600

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 112 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.243	0.243	0.6	4.5	O K
30 min Summer	99.309	0.309	0.6	5.7	O K
60 min Summer	99.358	0.358	0.6	6.7	O K
120 min Summer	99.373	0.373	0.6	7.0	O K
180 min Summer	99.365	0.365	0.6	6.8	O K
240 min Summer	99.350	0.350	0.6	6.5	O K
360 min Summer	99.320	0.320	0.6	5.9	O K
480 min Summer	99.289	0.289	0.6	5.4	O K
600 min Summer	99.259	0.259	0.6	4.8	O K
720 min Summer	99.230	0.230	0.6	4.2	O K
960 min Summer	99.178	0.178	0.6	3.2	O K
1440 min Summer	99.101	0.101	0.6	1.7	O K
2160 min Summer	99.050	0.050	0.6	0.8	O K
2880 min Summer	99.041	0.041	0.5	0.6	O K
4320 min Summer	99.030	0.030	0.4	0.4	O K
5760 min Summer	99.024	0.024	0.3	0.3	O K
7200 min Summer	99.020	0.020	0.3	0.2	O K
8640 min Summer	99.019	0.019	0.2	0.2	O K
10080 min Summer	99.018	0.018	0.2	0.1	O K
15 min Winter	99.274	0.274	0.6	5.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	60
120 min Summer	34.307	0.0	102
180 min Summer	25.552	0.0	134
240 min Summer	20.570	0.0	168
360 min Summer	15.173	0.0	236
480 min Summer	12.206	0.0	304
600 min Summer	10.302	0.0	368
720 min Summer	8.963	0.0	434
960 min Summer	7.189	0.0	558
1440 min Summer	5.257	0.0	782
2160 min Summer	3.836	0.0	1104
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3616
8640 min Summer	1.289	0.0	4264
10080 min Summer	1.142	0.0	5080
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.351	0.351	0.6	6.5	O K
60 min Winter	99.413	0.413	0.6	7.7	O K
120 min Winter	99.437	0.437	0.6	8.2	O K
180 min Winter	99.423	0.423	0.6	7.9	O K
240 min Winter	99.402	0.402	0.6	7.5	O K
360 min Winter	99.356	0.356	0.6	6.6	O K
480 min Winter	99.307	0.307	0.6	5.7	O K
600 min Winter	99.260	0.260	0.6	4.8	O K
720 min Winter	99.215	0.215	0.6	3.9	O K
960 min Winter	99.138	0.138	0.6	2.5	O K
1440 min Winter	99.050	0.050	0.6	0.8	O K
2160 min Winter	99.037	0.037	0.5	0.5	O K
2880 min Winter	99.030	0.030	0.4	0.4	O K
4320 min Winter	99.022	0.022	0.3	0.2	O K
5760 min Winter	99.019	0.019	0.2	0.2	O K
7200 min Winter	99.017	0.017	0.2	0.1	O K
8640 min Winter	99.016	0.016	0.2	0.1	O K
10080 min Winter	99.015	0.015	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	114
180 min Winter	25.552	0.0	144
240 min Winter	20.570	0.0	182
360 min Winter	15.173	0.0	256
480 min Winter	12.206	0.0	328
600 min Winter	10.302	0.0	398
720 min Winter	8.963	0.0	462
960 min Winter	7.189	0.0	578
1440 min Winter	5.257	0.0	750
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1452
4320 min Winter	2.226	0.0	2192
5760 min Winter	1.773	0.0	3008
7200 min Winter	1.487	0.0	3648
8640 min Winter	1.289	0.0	4352
10080 min Winter	1.142	0.0	5232

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.021

Time (mins) From:	To:	Area (ha)
0	4	0.021

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	6.4
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	17.8	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.600

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 88 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.206	0.206	0.6	3.8	O K
30 min Summer	99.260	0.260	0.6	4.8	O K
60 min Summer	99.297	0.297	0.6	5.5	O K
120 min Summer	99.304	0.304	0.6	5.7	O K
180 min Summer	99.295	0.295	0.6	5.5	O K
240 min Summer	99.280	0.280	0.6	5.2	O K
360 min Summer	99.250	0.250	0.6	4.6	O K
480 min Summer	99.220	0.220	0.6	4.0	O K
600 min Summer	99.192	0.192	0.6	3.5	O K
720 min Summer	99.166	0.166	0.6	3.0	O K
960 min Summer	99.122	0.122	0.6	2.1	O K
1440 min Summer	99.065	0.065	0.6	1.1	O K
2160 min Summer	99.043	0.043	0.5	0.6	O K
2880 min Summer	99.035	0.035	0.4	0.5	O K
4320 min Summer	99.026	0.026	0.3	0.3	O K
5760 min Summer	99.020	0.020	0.3	0.2	O K
7200 min Summer	99.019	0.019	0.2	0.2	O K
8640 min Summer	99.017	0.017	0.2	0.1	O K
10080 min Summer	99.016	0.016	0.2	0.1	O K
15 min Winter	99.233	0.233	0.6	4.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	17
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	60
120 min Summer	34.307	0.0	94
180 min Summer	25.552	0.0	128
240 min Summer	20.570	0.0	162
360 min Summer	15.173	0.0	230
480 min Summer	12.206	0.0	296
600 min Summer	10.302	0.0	360
720 min Summer	8.963	0.0	422
960 min Summer	7.189	0.0	540
1440 min Summer	5.257	0.0	764
2160 min Summer	3.836	0.0	1104
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3616
8640 min Summer	1.289	0.0	4272
10080 min Summer	1.142	0.0	5104
15 min Winter	127.204	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.296	0.296	0.6	5.5	O K
60 min Winter	99.343	0.343	0.6	6.4	O K
120 min Winter	99.353	0.353	0.6	6.6	O K
180 min Winter	99.340	0.340	0.6	6.3	O K
240 min Winter	99.317	0.317	0.6	5.9	O K
360 min Winter	99.270	0.270	0.6	5.0	O K
480 min Winter	99.223	0.223	0.6	4.1	O K
600 min Winter	99.179	0.179	0.6	3.2	O K
720 min Winter	99.140	0.140	0.6	2.5	O K
960 min Winter	99.079	0.079	0.6	1.3	O K
1440 min Winter	99.043	0.043	0.6	0.6	O K
2160 min Winter	99.032	0.032	0.4	0.4	O K
2880 min Winter	99.025	0.025	0.3	0.3	O K
4320 min Winter	99.019	0.019	0.2	0.2	O K
5760 min Winter	99.017	0.017	0.2	0.1	O K
7200 min Winter	99.016	0.016	0.2	0.1	O K
8640 min Winter	99.015	0.015	0.1	0.1	O K
10080 min Winter	99.014	0.014	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	31
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	108
180 min Winter	25.552	0.0	138
240 min Winter	20.570	0.0	176
360 min Winter	15.173	0.0	250
480 min Winter	12.206	0.0	318
600 min Winter	10.302	0.0	384
720 min Winter	8.963	0.0	442
960 min Winter	7.189	0.0	548
1440 min Winter	5.257	0.0	736
2160 min Winter	3.836	0.0	1100
2880 min Winter	3.063	0.0	1472
4320 min Winter	2.226	0.0	2196
5760 min Winter	1.773	0.0	2920
7200 min Winter	1.487	0.0	3632
8640 min Winter	1.289	0.0	4256
10080 min Winter	1.142	0.0	5136

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.018

Time (mins) From:	To:	Area (ha)
0	4	0.018

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	6.4
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	17.8	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.600

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 88 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.206	0.206	0.6	3.8	O K
30 min Summer	99.260	0.260	0.6	4.8	O K
60 min Summer	99.297	0.297	0.6	5.5	O K
120 min Summer	99.304	0.304	0.6	5.7	O K
180 min Summer	99.295	0.295	0.6	5.5	O K
240 min Summer	99.280	0.280	0.6	5.2	O K
360 min Summer	99.250	0.250	0.6	4.6	O K
480 min Summer	99.220	0.220	0.6	4.0	O K
600 min Summer	99.192	0.192	0.6	3.5	O K
720 min Summer	99.166	0.166	0.6	3.0	O K
960 min Summer	99.122	0.122	0.6	2.1	O K
1440 min Summer	99.065	0.065	0.6	1.1	O K
2160 min Summer	99.043	0.043	0.5	0.6	O K
2880 min Summer	99.035	0.035	0.4	0.5	O K
4320 min Summer	99.026	0.026	0.3	0.3	O K
5760 min Summer	99.020	0.020	0.3	0.2	O K
7200 min Summer	99.019	0.019	0.2	0.2	O K
8640 min Summer	99.017	0.017	0.2	0.1	O K
10080 min Summer	99.016	0.016	0.2	0.1	O K
15 min Winter	99.233	0.233	0.6	4.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	17
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	60
120 min Summer	34.307	0.0	94
180 min Summer	25.552	0.0	128
240 min Summer	20.570	0.0	162
360 min Summer	15.173	0.0	230
480 min Summer	12.206	0.0	296
600 min Summer	10.302	0.0	360
720 min Summer	8.963	0.0	422
960 min Summer	7.189	0.0	540
1440 min Summer	5.257	0.0	764
2160 min Summer	3.836	0.0	1104
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3616
8640 min Summer	1.289	0.0	4272
10080 min Summer	1.142	0.0	5104
15 min Winter	127.204	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.296	0.296	0.6	5.5	O K
60 min Winter	99.343	0.343	0.6	6.4	O K
120 min Winter	99.353	0.353	0.6	6.6	O K
180 min Winter	99.340	0.340	0.6	6.3	O K
240 min Winter	99.317	0.317	0.6	5.9	O K
360 min Winter	99.270	0.270	0.6	5.0	O K
480 min Winter	99.223	0.223	0.6	4.1	O K
600 min Winter	99.179	0.179	0.6	3.2	O K
720 min Winter	99.140	0.140	0.6	2.5	O K
960 min Winter	99.079	0.079	0.6	1.3	O K
1440 min Winter	99.043	0.043	0.6	0.6	O K
2160 min Winter	99.032	0.032	0.4	0.4	O K
2880 min Winter	99.025	0.025	0.3	0.3	O K
4320 min Winter	99.019	0.019	0.2	0.2	O K
5760 min Winter	99.017	0.017	0.2	0.1	O K
7200 min Winter	99.016	0.016	0.2	0.1	O K
8640 min Winter	99.015	0.015	0.1	0.1	O K
10080 min Winter	99.014	0.014	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	31
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	108
180 min Winter	25.552	0.0	138
240 min Winter	20.570	0.0	176
360 min Winter	15.173	0.0	250
480 min Winter	12.206	0.0	318
600 min Winter	10.302	0.0	384
720 min Winter	8.963	0.0	442
960 min Winter	7.189	0.0	548
1440 min Winter	5.257	0.0	736
2160 min Winter	3.836	0.0	1100
2880 min Winter	3.063	0.0	1472
4320 min Winter	2.226	0.0	2196
5760 min Winter	1.773	0.0	2920
7200 min Winter	1.487	0.0	3632
8640 min Winter	1.289	0.0	4256
10080 min Winter	1.142	0.0	5136

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.018

Time (mins) From:	To:	Area (ha)
0	4	0.018

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	6.4
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	17.8	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.600

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 120 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.255	0.255	0.6	4.7	O K
30 min Summer	99.325	0.325	0.6	6.0	O K
60 min Summer	99.379	0.379	0.6	7.1	O K
120 min Summer	99.396	0.396	0.6	7.4	O K
180 min Summer	99.388	0.388	0.6	7.3	O K
240 min Summer	99.374	0.374	0.6	7.0	O K
360 min Summer	99.344	0.344	0.6	6.4	O K
480 min Summer	99.313	0.313	0.6	5.8	O K
600 min Summer	99.282	0.282	0.6	5.2	O K
720 min Summer	99.253	0.253	0.6	4.7	O K
960 min Summer	99.199	0.199	0.6	3.6	O K
1440 min Summer	99.116	0.116	0.6	2.0	O K
2160 min Summer	99.054	0.054	0.6	0.8	O K
2880 min Summer	99.042	0.042	0.5	0.6	O K
4320 min Summer	99.031	0.031	0.4	0.4	O K
5760 min Summer	99.025	0.025	0.3	0.3	O K
7200 min Summer	99.021	0.021	0.3	0.2	O K
8640 min Summer	99.019	0.019	0.2	0.2	O K
10080 min Summer	99.018	0.018	0.2	0.2	O K
15 min Winter	99.288	0.288	0.6	5.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	60
120 min Summer	34.307	0.0	104
180 min Summer	25.552	0.0	136
240 min Summer	20.570	0.0	168
360 min Summer	15.173	0.0	238
480 min Summer	12.206	0.0	306
600 min Summer	10.302	0.0	372
720 min Summer	8.963	0.0	436
960 min Summer	7.189	0.0	560
1440 min Summer	5.257	0.0	794
2160 min Summer	3.836	0.0	1108
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3664
8640 min Summer	1.289	0.0	4336
10080 min Summer	1.142	0.0	5096
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.369	0.369	0.6	6.9	O K
60 min Winter	99.437	0.437	0.6	8.2	O K
120 min Winter	99.465	0.465	0.6	8.7	O K
180 min Winter	99.452	0.452	0.6	8.5	O K
240 min Winter	99.431	0.431	0.6	8.1	O K
360 min Winter	99.385	0.385	0.6	7.2	O K
480 min Winter	99.336	0.336	0.6	6.3	O K
600 min Winter	99.288	0.288	0.6	5.3	O K
720 min Winter	99.242	0.242	0.6	4.5	O K
960 min Winter	99.161	0.161	0.6	2.9	O K
1440 min Winter	99.058	0.058	0.6	0.9	O K
2160 min Winter	99.039	0.039	0.5	0.5	O K
2880 min Winter	99.031	0.031	0.4	0.4	O K
4320 min Winter	99.023	0.023	0.3	0.2	O K
5760 min Winter	99.019	0.019	0.2	0.2	O K
7200 min Winter	99.018	0.018	0.2	0.1	O K
8640 min Winter	99.016	0.016	0.2	0.1	O K
10080 min Winter	99.015	0.015	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	146
240 min Winter	20.570	0.0	184
360 min Winter	15.173	0.0	258
480 min Winter	12.206	0.0	332
600 min Winter	10.302	0.0	400
720 min Winter	8.963	0.0	466
960 min Winter	7.189	0.0	588
1440 min Winter	5.257	0.0	778
2160 min Winter	3.836	0.0	1100
2880 min Winter	3.063	0.0	1464
4320 min Winter	2.226	0.0	2164
5760 min Winter	1.773	0.0	2832
7200 min Winter	1.487	0.0	3664
8640 min Winter	1.289	0.0	4360
10080 min Winter	1.142	0.0	5016

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.022

Time (mins) From:	To:	Area (ha)
0	4	0.022

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	6.4
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	17.8	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.600

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 108 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.236	0.236	0.5	3.4	O K
30 min Summer	99.300	0.300	0.5	4.4	O K
60 min Summer	99.348	0.348	0.5	5.1	O K
120 min Summer	99.361	0.361	0.5	5.3	O K
180 min Summer	99.352	0.352	0.5	5.1	O K
240 min Summer	99.337	0.337	0.5	4.9	O K
360 min Summer	99.307	0.307	0.5	4.5	O K
480 min Summer	99.277	0.277	0.5	4.0	O K
600 min Summer	99.247	0.247	0.5	3.6	O K
720 min Summer	99.219	0.219	0.5	3.1	O K
960 min Summer	99.168	0.168	0.5	2.4	O K
1440 min Summer	99.094	0.094	0.5	1.3	O K
2160 min Summer	99.049	0.049	0.5	0.6	O K
2880 min Summer	99.039	0.039	0.4	0.4	O K
4320 min Summer	99.029	0.029	0.3	0.3	O K
5760 min Summer	99.023	0.023	0.2	0.2	O K
7200 min Summer	99.020	0.020	0.2	0.1	O K
8640 min Summer	99.019	0.019	0.2	0.1	O K
10080 min Summer	99.017	0.017	0.1	0.1	O K
15 min Winter	99.267	0.267	0.5	3.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	60
120 min Summer	34.307	0.0	100
180 min Summer	25.552	0.0	132
240 min Summer	20.570	0.0	166
360 min Summer	15.173	0.0	234
480 min Summer	12.206	0.0	302
600 min Summer	10.302	0.0	368
720 min Summer	8.963	0.0	432
960 min Summer	7.189	0.0	552
1440 min Summer	5.257	0.0	780
2160 min Summer	3.836	0.0	1104
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2204
5760 min Summer	1.773	0.0	2896
7200 min Summer	1.487	0.0	3656
8640 min Summer	1.289	0.0	4368
10080 min Summer	1.142	0.0	5136
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.341	0.341	0.5	5.0	O K
60 min Winter	99.401	0.401	0.5	5.9	O K
120 min Winter	99.422	0.422	0.5	6.2	O K
180 min Winter	99.409	0.409	0.5	6.0	O K
240 min Winter	99.387	0.387	0.5	5.7	O K
360 min Winter	99.340	0.340	0.5	5.0	O K
480 min Winter	99.292	0.292	0.5	4.2	O K
600 min Winter	99.245	0.245	0.5	3.5	O K
720 min Winter	99.201	0.201	0.5	2.9	O K
960 min Winter	99.126	0.126	0.5	1.7	O K
1440 min Winter	99.049	0.049	0.5	0.6	O K
2160 min Winter	99.036	0.036	0.4	0.4	O K
2880 min Winter	99.029	0.029	0.3	0.3	O K
4320 min Winter	99.021	0.021	0.2	0.2	O K
5760 min Winter	99.018	0.018	0.2	0.1	O K
7200 min Winter	99.017	0.017	0.1	0.1	O K
8640 min Winter	99.016	0.016	0.1	0.1	O K
10080 min Winter	99.015	0.015	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	114
180 min Winter	25.552	0.0	142
240 min Winter	20.570	0.0	180
360 min Winter	15.173	0.0	256
480 min Winter	12.206	0.0	328
600 min Winter	10.302	0.0	394
720 min Winter	8.963	0.0	458
960 min Winter	7.189	0.0	576
1440 min Winter	5.257	0.0	744
2160 min Winter	3.836	0.0	1108
2880 min Winter	3.063	0.0	1472
4320 min Winter	2.226	0.0	2168
5760 min Winter	1.773	0.0	2936
7200 min Winter	1.487	0.0	3472
8640 min Winter	1.289	0.0	4328
10080 min Winter	1.142	0.0	5016

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.016

Time (mins) From:	To:	Area (ha)
0	4	0.016

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	13.9	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 133 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.275	0.275	0.7	5.2	O K
30 min Summer	99.352	0.352	0.7	6.7	O K
60 min Summer	99.413	0.413	0.7	7.9	O K
120 min Summer	99.435	0.435	0.7	8.3	O K
180 min Summer	99.428	0.428	0.7	8.2	O K
240 min Summer	99.413	0.413	0.7	7.9	O K
360 min Summer	99.384	0.384	0.7	7.3	O K
480 min Summer	99.353	0.353	0.7	6.7	O K
600 min Summer	99.321	0.321	0.7	6.1	O K
720 min Summer	99.291	0.291	0.7	5.5	O K
960 min Summer	99.235	0.235	0.7	4.4	O K
1440 min Summer	99.144	0.144	0.7	2.6	O K
2160 min Summer	99.065	0.065	0.7	1.1	O K
2880 min Summer	99.046	0.046	0.6	0.7	O K
4320 min Summer	99.033	0.033	0.4	0.5	O K
5760 min Summer	99.027	0.027	0.3	0.3	O K
7200 min Summer	99.023	0.023	0.3	0.2	O K
8640 min Summer	99.020	0.020	0.3	0.2	O K
10080 min Summer	99.019	0.019	0.2	0.2	O K
15 min Winter	99.310	0.310	0.7	5.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	108
180 min Summer	25.552	0.0	140
240 min Summer	20.570	0.0	172
360 min Summer	15.173	0.0	240
480 min Summer	12.206	0.0	308
600 min Summer	10.302	0.0	376
720 min Summer	8.963	0.0	440
960 min Summer	7.189	0.0	568
1440 min Summer	5.257	0.0	806
2160 min Summer	3.836	0.0	1128
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2204
5760 min Summer	1.773	0.0	2920
7200 min Summer	1.487	0.0	3664
8640 min Summer	1.289	0.0	4344
10080 min Summer	1.142	0.0	5104
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.400	0.400	0.7	7.6	O K
60 min Winter	99.475	0.475	0.7	9.1	O K
120 min Winter	99.511	0.511	0.7	9.8	O K
180 min Winter	99.499	0.499	0.7	9.5	O K
240 min Winter	99.479	0.479	0.7	9.2	O K
360 min Winter	99.434	0.434	0.7	8.3	O K
480 min Winter	99.385	0.385	0.7	7.3	O K
600 min Winter	99.336	0.336	0.7	6.4	O K
720 min Winter	99.289	0.289	0.7	5.4	O K
960 min Winter	99.203	0.203	0.7	3.8	O K
1440 min Winter	99.079	0.079	0.7	1.3	O K
2160 min Winter	99.042	0.042	0.5	0.6	O K
2880 min Winter	99.033	0.033	0.4	0.5	O K
4320 min Winter	99.024	0.024	0.3	0.3	O K
5760 min Winter	99.020	0.020	0.3	0.2	O K
7200 min Winter	99.018	0.018	0.2	0.2	O K
8640 min Winter	99.017	0.017	0.2	0.1	O K
10080 min Winter	99.016	0.016	0.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	150
240 min Winter	20.570	0.0	186
360 min Winter	15.173	0.0	262
480 min Winter	12.206	0.0	336
600 min Winter	10.302	0.0	406
720 min Winter	8.963	0.0	472
960 min Winter	7.189	0.0	598
1440 min Winter	5.257	0.0	808
2160 min Winter	3.836	0.0	1100
2880 min Winter	3.063	0.0	1468
4320 min Winter	2.226	0.0	2200
5760 min Winter	1.773	0.0	2912
7200 min Winter	1.487	0.0	3720
8640 min Winter	1.289	0.0	4400
10080 min Winter	1.142	0.0	5144

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.024

Time (mins) From:	To:	Area (ha)
0	4	0.024

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	6.5
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	18.1	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 129 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.270	0.270	0.7	5.4	O K
30 min Summer	99.344	0.344	0.7	6.9	O K
60 min Summer	99.403	0.403	0.7	8.1	O K
120 min Summer	99.424	0.424	0.7	8.6	O K
180 min Summer	99.416	0.416	0.7	8.4	O K
240 min Summer	99.401	0.401	0.7	8.1	O K
360 min Summer	99.372	0.372	0.7	7.5	O K
480 min Summer	99.341	0.341	0.7	6.8	O K
600 min Summer	99.310	0.310	0.7	6.2	O K
720 min Summer	99.280	0.280	0.7	5.6	O K
960 min Summer	99.224	0.224	0.7	4.4	O K
1440 min Summer	99.135	0.135	0.7	2.6	O K
2160 min Summer	99.062	0.062	0.7	1.1	O K
2880 min Summer	99.045	0.045	0.6	0.7	O K
4320 min Summer	99.033	0.033	0.5	0.5	O K
5760 min Summer	99.026	0.026	0.4	0.3	O K
7200 min Summer	99.022	0.022	0.3	0.2	O K
8640 min Summer	99.020	0.020	0.3	0.2	O K
10080 min Summer	99.019	0.019	0.2	0.2	O K
15 min Winter	99.304	0.304	0.7	6.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	106
180 min Summer	25.552	0.0	138
240 min Summer	20.570	0.0	170
360 min Summer	15.173	0.0	240
480 min Summer	12.206	0.0	308
600 min Summer	10.302	0.0	374
720 min Summer	8.963	0.0	440
960 min Summer	7.189	0.0	566
1440 min Summer	5.257	0.0	796
2160 min Summer	3.836	0.0	1124
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2896
7200 min Summer	1.487	0.0	3664
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5112
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.391	0.391	0.7	7.9	O K
60 min Winter	99.464	0.464	0.7	9.4	O K
120 min Winter	99.498	0.498	0.7	10.1	O K
180 min Winter	99.485	0.485	0.7	9.8	O K
240 min Winter	99.465	0.465	0.7	9.4	O K
360 min Winter	99.420	0.420	0.7	8.5	O K
480 min Winter	99.371	0.371	0.7	7.5	O K
600 min Winter	99.322	0.322	0.7	6.5	O K
720 min Winter	99.275	0.275	0.7	5.5	O K
960 min Winter	99.190	0.190	0.7	3.7	O K
1440 min Winter	99.072	0.072	0.7	1.3	O K
2160 min Winter	99.041	0.041	0.6	0.6	O K
2880 min Winter	99.033	0.033	0.5	0.5	O K
4320 min Winter	99.024	0.024	0.3	0.3	O K
5760 min Winter	99.020	0.020	0.3	0.2	O K
7200 min Winter	99.019	0.019	0.2	0.2	O K
8640 min Winter	99.017	0.017	0.2	0.1	O K
10080 min Winter	99.016	0.016	0.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	148
240 min Winter	20.570	0.0	184
360 min Winter	15.173	0.0	262
480 min Winter	12.206	0.0	334
600 min Winter	10.302	0.0	404
720 min Winter	8.963	0.0	470
960 min Winter	7.189	0.0	596
1440 min Winter	5.257	0.0	796
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1464
4320 min Winter	2.226	0.0	2200
5760 min Winter	1.773	0.0	2928
7200 min Winter	1.487	0.0	3584
8640 min Winter	1.289	0.0	4248
10080 min Winter	1.142	0.0	5056

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.025

Time (mins) From:	To:	Area (ha)
0	4	0.025

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	6.4
Membrane Percolation (mm/hr)	1000	Length (m)	10.8
Max Percolation (l/s)	19.2	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.500

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 151 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.304	0.304	0.6	5.6	O K
30 min Summer	99.390	0.390	0.6	7.3	O K
60 min Summer	99.463	0.463	0.6	8.7	O K
120 min Summer	99.494	0.494	0.6	9.3	O K
180 min Summer	99.487	0.487	0.6	9.2	O K
240 min Summer	99.472	0.472	0.6	8.9	O K
360 min Summer	99.443	0.443	0.6	8.3	O K
480 min Summer	99.412	0.412	0.6	7.7	O K
600 min Summer	99.380	0.380	0.6	7.1	O K
720 min Summer	99.349	0.349	0.6	6.5	O K
960 min Summer	99.290	0.290	0.6	5.4	O K
1440 min Summer	99.189	0.189	0.6	3.4	O K
2160 min Summer	99.090	0.090	0.6	1.5	O K
2880 min Summer	99.050	0.050	0.6	0.8	O K
4320 min Summer	99.037	0.037	0.5	0.5	O K
5760 min Summer	99.029	0.029	0.4	0.4	O K
7200 min Summer	99.025	0.025	0.3	0.3	O K
8640 min Summer	99.022	0.022	0.3	0.2	O K
10080 min Summer	99.020	0.020	0.2	0.2	O K
15 min Winter	99.343	0.343	0.6	6.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	116
180 min Summer	25.552	0.0	146
240 min Summer	20.570	0.0	176
360 min Summer	15.173	0.0	246
480 min Summer	12.206	0.0	314
600 min Summer	10.302	0.0	380
720 min Summer	8.963	0.0	448
960 min Summer	7.189	0.0	578
1440 min Summer	5.257	0.0	822
2160 min Summer	3.836	0.0	1148
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3664
8640 min Summer	1.289	0.0	4384
10080 min Summer	1.142	0.0	5120
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.443	0.443	0.6	8.3	O K
60 min Winter	99.531	0.531	0.6	10.0	O K
120 min Winter	99.579	0.579	0.6	10.9	O K
180 min Winter	99.572	0.572	0.6	10.8	O K
240 min Winter	99.551	0.551	0.6	10.4	O K
360 min Winter	99.508	0.508	0.6	9.6	O K
480 min Winter	99.459	0.459	0.6	8.6	O K
600 min Winter	99.409	0.409	0.6	7.7	O K
720 min Winter	99.360	0.360	0.6	6.7	O K
960 min Winter	99.268	0.268	0.6	4.9	O K
1440 min Winter	99.122	0.122	0.6	2.2	O K
2160 min Winter	99.046	0.046	0.6	0.7	O K
2880 min Winter	99.037	0.037	0.5	0.5	O K
4320 min Winter	99.027	0.027	0.3	0.3	O K
5760 min Winter	99.021	0.021	0.3	0.2	O K
7200 min Winter	99.019	0.019	0.2	0.2	O K
8640 min Winter	99.018	0.018	0.2	0.1	O K
10080 min Winter	99.017	0.017	0.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	168
240 min Winter	20.570	0.0	190
360 min Winter	15.173	0.0	266
480 min Winter	12.206	0.0	342
600 min Winter	10.302	0.0	414
720 min Winter	8.963	0.0	484
960 min Winter	7.189	0.0	614
1440 min Winter	5.257	0.0	838
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1460
4320 min Winter	2.226	0.0	2180
5760 min Winter	1.773	0.0	3000
7200 min Winter	1.487	0.0	3592
8640 min Winter	1.289	0.0	4392
10080 min Winter	1.142	0.0	4960

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.026

Time (mins) From:	To:	Area (ha)
0	4	0.026

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	6.4
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	17.8	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	1.000

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 144 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.292	0.292	0.6	5.4	O K
30 min Summer	99.374	0.374	0.6	7.0	O K
60 min Summer	99.442	0.442	0.6	8.3	O K
120 min Summer	99.469	0.469	0.6	8.8	O K
180 min Summer	99.462	0.462	0.6	8.7	O K
240 min Summer	99.447	0.447	0.6	8.4	O K
360 min Summer	99.418	0.418	0.6	7.8	O K
480 min Summer	99.387	0.387	0.6	7.2	O K
600 min Summer	99.355	0.355	0.6	6.6	O K
720 min Summer	99.324	0.324	0.6	6.0	O K
960 min Summer	99.266	0.266	0.6	4.9	O K
1440 min Summer	99.169	0.169	0.6	3.1	O K
2160 min Summer	99.079	0.079	0.6	1.3	O K
2880 min Summer	99.048	0.048	0.6	0.7	O K
4320 min Summer	99.035	0.035	0.5	0.5	O K
5760 min Summer	99.028	0.028	0.4	0.3	O K
7200 min Summer	99.024	0.024	0.3	0.3	O K
8640 min Summer	99.021	0.021	0.3	0.2	O K
10080 min Summer	99.019	0.019	0.2	0.2	O K
15 min Winter	99.329	0.329	0.6	6.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	112
180 min Summer	25.552	0.0	142
240 min Summer	20.570	0.0	174
360 min Summer	15.173	0.0	244
480 min Summer	12.206	0.0	310
600 min Summer	10.302	0.0	380
720 min Summer	8.963	0.0	444
960 min Summer	7.189	0.0	570
1440 min Summer	5.257	0.0	810
2160 min Summer	3.836	0.0	1144
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3624
8640 min Summer	1.289	0.0	4384
10080 min Summer	1.142	0.0	5112
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.425	0.425	0.6	8.0	O K
60 min Winter	99.507	0.507	0.6	9.5	O K
120 min Winter	99.551	0.551	0.6	10.4	O K
180 min Winter	99.541	0.541	0.6	10.2	O K
240 min Winter	99.520	0.520	0.6	9.8	O K
360 min Winter	99.476	0.476	0.6	9.0	O K
480 min Winter	99.428	0.428	0.6	8.0	O K
600 min Winter	99.378	0.378	0.6	7.1	O K
720 min Winter	99.329	0.329	0.6	6.1	O K
960 min Winter	99.240	0.240	0.6	4.4	O K
1440 min Winter	99.102	0.102	0.6	1.8	O K
2160 min Winter	99.044	0.044	0.6	0.7	O K
2880 min Winter	99.035	0.035	0.5	0.5	O K
4320 min Winter	99.026	0.026	0.3	0.3	O K
5760 min Winter	99.021	0.021	0.3	0.2	O K
7200 min Winter	99.019	0.019	0.2	0.2	O K
8640 min Winter	99.017	0.017	0.2	0.1	O K
10080 min Winter	99.016	0.016	0.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	166
240 min Winter	20.570	0.0	188
360 min Winter	15.173	0.0	264
480 min Winter	12.206	0.0	340
600 min Winter	10.302	0.0	410
720 min Winter	8.963	0.0	478
960 min Winter	7.189	0.0	608
1440 min Winter	5.257	0.0	824
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1468
4320 min Winter	2.226	0.0	2188
5760 min Winter	1.773	0.0	2888
7200 min Winter	1.487	0.0	3584
8640 min Winter	1.289	0.0	4248
10080 min Winter	1.142	0.0	5056

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.025

Time (mins) From:	To:	Area (ha)
0	4	0.025

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	6.4
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	17.8	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 59 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.144	0.144	0.5	2.0	O K
30 min Summer	99.177	0.177	0.5	2.5	O K
60 min Summer	99.194	0.194	0.5	2.8	O K
120 min Summer	99.194	0.194	0.5	2.8	O K
180 min Summer	99.182	0.182	0.5	2.6	O K
240 min Summer	99.167	0.167	0.5	2.4	O K
360 min Summer	99.140	0.140	0.5	1.9	O K
480 min Summer	99.115	0.115	0.5	1.6	O K
600 min Summer	99.094	0.094	0.5	1.3	O K
720 min Summer	99.077	0.077	0.5	1.0	O K
960 min Summer	99.054	0.054	0.5	0.7	O K
1440 min Summer	99.040	0.040	0.4	0.5	O K
2160 min Summer	99.030	0.030	0.3	0.3	O K
2880 min Summer	99.025	0.025	0.2	0.2	O K
4320 min Summer	99.019	0.019	0.2	0.1	O K
5760 min Summer	99.017	0.017	0.1	0.1	O K
7200 min Summer	99.016	0.016	0.1	0.1	O K
8640 min Summer	99.015	0.015	0.1	0.1	O K
10080 min Summer	99.014	0.014	0.1	0.1	O K
15 min Winter	99.162	0.162	0.5	2.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	17
30 min Summer	85.821	0.0	31
60 min Summer	55.250	0.0	52
120 min Summer	34.307	0.0	86
180 min Summer	25.552	0.0	120
240 min Summer	20.570	0.0	154
360 min Summer	15.173	0.0	218
480 min Summer	12.206	0.0	280
600 min Summer	10.302	0.0	340
720 min Summer	8.963	0.0	398
960 min Summer	7.189	0.0	502
1440 min Summer	5.257	0.0	738
2160 min Summer	3.836	0.0	1104
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2192
5760 min Summer	1.773	0.0	2896
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5120
15 min Winter	127.204	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.202	0.202	0.5	2.9	O K
60 min Winter	99.224	0.224	0.5	3.2	O K
120 min Winter	99.221	0.221	0.5	3.2	O K
180 min Winter	99.202	0.202	0.5	2.9	O K
240 min Winter	99.179	0.179	0.5	2.5	O K
360 min Winter	99.135	0.135	0.5	1.9	O K
480 min Winter	99.098	0.098	0.5	1.3	O K
600 min Winter	99.069	0.069	0.5	0.9	O K
720 min Winter	99.051	0.051	0.5	0.6	O K
960 min Winter	99.041	0.041	0.4	0.5	O K
1440 min Winter	99.031	0.031	0.3	0.3	O K
2160 min Winter	99.023	0.023	0.2	0.2	O K
2880 min Winter	99.019	0.019	0.2	0.1	O K
4320 min Winter	99.016	0.016	0.1	0.1	O K
5760 min Winter	99.015	0.015	0.1	0.1	O K
7200 min Winter	99.013	0.013	0.1	0.1	O K
8640 min Winter	99.013	0.013	0.1	0.1	O K
10080 min Winter	99.012	0.012	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	31
60 min Winter	55.250	0.0	58
120 min Winter	34.307	0.0	92
180 min Winter	25.552	0.0	130
240 min Winter	20.570	0.0	166
360 min Winter	15.173	0.0	234
480 min Winter	12.206	0.0	294
600 min Winter	10.302	0.0	346
720 min Winter	8.963	0.0	386
960 min Winter	7.189	0.0	502
1440 min Winter	5.257	0.0	736
2160 min Winter	3.836	0.0	1096
2880 min Winter	3.063	0.0	1468
4320 min Winter	2.226	0.0	2176
5760 min Winter	1.773	0.0	2864
7200 min Winter	1.487	0.0	3536
8640 min Winter	1.289	0.0	4368
10080 min Winter	1.142	0.0	4968

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.010

Time (mins) From:	To:	Area (ha)
0	4	0.010

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	13.9	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.500

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 59 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.144	0.144	0.5	2.0	O K
30 min Summer	99.177	0.177	0.5	2.5	O K
60 min Summer	99.194	0.194	0.5	2.8	O K
120 min Summer	99.194	0.194	0.5	2.8	O K
180 min Summer	99.182	0.182	0.5	2.6	O K
240 min Summer	99.167	0.167	0.5	2.4	O K
360 min Summer	99.140	0.140	0.5	1.9	O K
480 min Summer	99.115	0.115	0.5	1.6	O K
600 min Summer	99.094	0.094	0.5	1.3	O K
720 min Summer	99.077	0.077	0.5	1.0	O K
960 min Summer	99.054	0.054	0.5	0.7	O K
1440 min Summer	99.040	0.040	0.4	0.5	O K
2160 min Summer	99.030	0.030	0.3	0.3	O K
2880 min Summer	99.025	0.025	0.2	0.2	O K
4320 min Summer	99.019	0.019	0.2	0.1	O K
5760 min Summer	99.017	0.017	0.1	0.1	O K
7200 min Summer	99.016	0.016	0.1	0.1	O K
8640 min Summer	99.015	0.015	0.1	0.1	O K
10080 min Summer	99.014	0.014	0.1	0.1	O K
15 min Winter	99.162	0.162	0.5	2.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	17
30 min Summer	85.821	0.0	31
60 min Summer	55.250	0.0	52
120 min Summer	34.307	0.0	86
180 min Summer	25.552	0.0	120
240 min Summer	20.570	0.0	154
360 min Summer	15.173	0.0	218
480 min Summer	12.206	0.0	280
600 min Summer	10.302	0.0	340
720 min Summer	8.963	0.0	398
960 min Summer	7.189	0.0	502
1440 min Summer	5.257	0.0	738
2160 min Summer	3.836	0.0	1104
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2192
5760 min Summer	1.773	0.0	2896
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5120
15 min Winter	127.204	0.0	17

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.202	0.202	0.5	2.9	O K
60 min Winter	99.224	0.224	0.5	3.2	O K
120 min Winter	99.221	0.221	0.5	3.2	O K
180 min Winter	99.202	0.202	0.5	2.9	O K
240 min Winter	99.179	0.179	0.5	2.5	O K
360 min Winter	99.135	0.135	0.5	1.9	O K
480 min Winter	99.098	0.098	0.5	1.3	O K
600 min Winter	99.069	0.069	0.5	0.9	O K
720 min Winter	99.051	0.051	0.5	0.6	O K
960 min Winter	99.041	0.041	0.4	0.5	O K
1440 min Winter	99.031	0.031	0.3	0.3	O K
2160 min Winter	99.023	0.023	0.2	0.2	O K
2880 min Winter	99.019	0.019	0.2	0.1	O K
4320 min Winter	99.016	0.016	0.1	0.1	O K
5760 min Winter	99.015	0.015	0.1	0.1	O K
7200 min Winter	99.013	0.013	0.1	0.1	O K
8640 min Winter	99.013	0.013	0.1	0.1	O K
10080 min Winter	99.012	0.012	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	31
60 min Winter	55.250	0.0	58
120 min Winter	34.307	0.0	92
180 min Winter	25.552	0.0	130
240 min Winter	20.570	0.0	166
360 min Winter	15.173	0.0	234
480 min Winter	12.206	0.0	294
600 min Winter	10.302	0.0	346
720 min Winter	8.963	0.0	386
960 min Winter	7.189	0.0	502
1440 min Winter	5.257	0.0	736
2160 min Winter	3.836	0.0	1096
2880 min Winter	3.063	0.0	1468
4320 min Winter	2.226	0.0	2176
5760 min Winter	1.773	0.0	2864
7200 min Winter	1.487	0.0	3536
8640 min Winter	1.289	0.0	4368
10080 min Winter	1.142	0.0	4968

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.010

Time (mins) From:	To:	Area (ha)
0	4	0.010

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	13.9	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 135 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.281	0.281	0.7	6.0	O K
30 min Summer	99.358	0.358	0.7	7.8	O K
60 min Summer	99.421	0.421	0.7	9.2	O K
120 min Summer	99.444	0.444	0.7	9.7	O K
180 min Summer	99.437	0.437	0.7	9.5	O K
240 min Summer	99.422	0.422	0.7	9.2	O K
360 min Summer	99.392	0.392	0.7	8.5	O K
480 min Summer	99.361	0.361	0.7	7.8	O K
600 min Summer	99.330	0.330	0.7	7.1	O K
720 min Summer	99.300	0.300	0.7	6.5	O K
960 min Summer	99.242	0.242	0.7	5.2	O K
1440 min Summer	99.150	0.150	0.7	3.1	O K
2160 min Summer	99.068	0.068	0.7	1.3	O K
2880 min Summer	99.046	0.046	0.7	0.8	O K
4320 min Summer	99.034	0.034	0.5	0.5	O K
5760 min Summer	99.027	0.027	0.4	0.3	O K
7200 min Summer	99.023	0.023	0.3	0.3	O K
8640 min Summer	99.021	0.021	0.3	0.2	O K
10080 min Summer	99.020	0.020	0.3	0.2	O K
15 min Winter	99.316	0.316	0.7	6.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	110
180 min Summer	25.552	0.0	140
240 min Summer	20.570	0.0	172
360 min Summer	15.173	0.0	242
480 min Summer	12.206	0.0	310
600 min Summer	10.302	0.0	376
720 min Summer	8.963	0.0	442
960 min Summer	7.189	0.0	568
1440 min Summer	5.257	0.0	808
2160 min Summer	3.836	0.0	1128
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2204
5760 min Summer	1.773	0.0	2928
7200 min Summer	1.487	0.0	3600
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5104
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.407	0.407	0.7	8.9	O K
60 min Winter	99.484	0.484	0.7	10.6	O K
120 min Winter	99.522	0.522	0.7	11.4	O K
180 min Winter	99.510	0.510	0.7	11.2	O K
240 min Winter	99.490	0.490	0.7	10.7	O K
360 min Winter	99.445	0.445	0.7	9.7	O K
480 min Winter	99.396	0.396	0.7	8.6	O K
600 min Winter	99.347	0.347	0.7	7.5	O K
720 min Winter	99.299	0.299	0.7	6.4	O K
960 min Winter	99.212	0.212	0.7	4.5	O K
1440 min Winter	99.084	0.084	0.7	1.6	O K
2160 min Winter	99.042	0.042	0.6	0.7	O K
2880 min Winter	99.034	0.034	0.5	0.5	O K
4320 min Winter	99.025	0.025	0.4	0.3	O K
5760 min Winter	99.021	0.021	0.3	0.2	O K
7200 min Winter	99.020	0.020	0.3	0.2	O K
8640 min Winter	99.018	0.018	0.2	0.2	O K
10080 min Winter	99.017	0.017	0.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	152
240 min Winter	20.570	0.0	186
360 min Winter	15.173	0.0	262
480 min Winter	12.206	0.0	336
600 min Winter	10.302	0.0	408
720 min Winter	8.963	0.0	476
960 min Winter	7.189	0.0	600
1440 min Winter	5.257	0.0	810
2160 min Winter	3.836	0.0	1100
2880 min Winter	3.063	0.0	1468
4320 min Winter	2.226	0.0	2180
5760 min Winter	1.773	0.0	2976
7200 min Winter	1.487	0.0	3728
8640 min Winter	1.289	0.0	4360
10080 min Winter	1.142	0.0	4952

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.028

Time (mins) From:	To:	Area (ha)
0	4	0.028

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	6.5
Membrane Percolation (mm/hr)	1000	Length (m)	11.5
Max Percolation (l/s)	20.8	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 127 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.269	0.269	0.8	6.0	O K
30 min Summer	99.342	0.342	0.8	7.7	O K
60 min Summer	99.400	0.400	0.8	9.1	O K
120 min Summer	99.420	0.420	0.8	9.5	O K
180 min Summer	99.412	0.412	0.8	9.4	O K
240 min Summer	99.397	0.397	0.8	9.0	O K
360 min Summer	99.367	0.367	0.8	8.3	O K
480 min Summer	99.336	0.336	0.8	7.6	O K
600 min Summer	99.305	0.305	0.8	6.9	O K
720 min Summer	99.275	0.275	0.8	6.2	O K
960 min Summer	99.220	0.220	0.8	4.9	O K
1440 min Summer	99.132	0.132	0.8	2.8	O K
2160 min Summer	99.060	0.060	0.8	1.1	O K
2880 min Summer	99.044	0.044	0.7	0.8	O K
4320 min Summer	99.033	0.033	0.5	0.5	O K
5760 min Summer	99.026	0.026	0.4	0.3	O K
7200 min Summer	99.023	0.023	0.3	0.3	O K
8640 min Summer	99.022	0.022	0.3	0.2	O K
10080 min Summer	99.020	0.020	0.3	0.2	O K
15 min Winter	99.303	0.303	0.8	6.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	106
180 min Summer	25.552	0.0	138
240 min Summer	20.570	0.0	170
360 min Summer	15.173	0.0	240
480 min Summer	12.206	0.0	306
600 min Summer	10.302	0.0	374
720 min Summer	8.963	0.0	440
960 min Summer	7.189	0.0	566
1440 min Summer	5.257	0.0	796
2160 min Summer	3.836	0.0	1124
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2920
7200 min Summer	1.487	0.0	3648
8640 min Summer	1.289	0.0	4280
10080 min Summer	1.142	0.0	4976
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.389	0.389	0.8	8.8	O K
60 min Winter	99.461	0.461	0.8	10.5	O K
120 min Winter	99.493	0.493	0.8	11.3	O K
180 min Winter	99.480	0.480	0.8	11.0	O K
240 min Winter	99.460	0.460	0.8	10.5	O K
360 min Winter	99.414	0.414	0.8	9.4	O K
480 min Winter	99.365	0.365	0.8	8.3	O K
600 min Winter	99.316	0.316	0.8	7.1	O K
720 min Winter	99.269	0.269	0.8	6.0	O K
960 min Winter	99.185	0.185	0.8	4.0	O K
1440 min Winter	99.069	0.069	0.8	1.3	O K
2160 min Winter	99.040	0.040	0.6	0.7	O K
2880 min Winter	99.032	0.032	0.5	0.5	O K
4320 min Winter	99.024	0.024	0.4	0.3	O K
5760 min Winter	99.022	0.022	0.3	0.2	O K
7200 min Winter	99.020	0.020	0.2	0.2	O K
8640 min Winter	99.018	0.018	0.2	0.2	O K
10080 min Winter	99.017	0.017	0.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	148
240 min Winter	20.570	0.0	184
360 min Winter	15.173	0.0	260
480 min Winter	12.206	0.0	334
600 min Winter	10.302	0.0	404
720 min Winter	8.963	0.0	470
960 min Winter	7.189	0.0	596
1440 min Winter	5.257	0.0	794
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1468
4320 min Winter	2.226	0.0	2240
5760 min Winter	1.773	0.0	2904
7200 min Winter	1.487	0.0	3568
8640 min Winter	1.289	0.0	4424
10080 min Winter	1.142	0.0	5096

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.028

Time (mins) From:	To:	Area (ha)
0	4	0.028

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	6.4
Membrane Percolation (mm/hr)	1000	Length (m)	12.2
Max Percolation (l/s)	21.7	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 120 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.255	0.255	0.6	4.7	O K
30 min Summer	99.325	0.325	0.6	6.0	O K
60 min Summer	99.379	0.379	0.6	7.1	O K
120 min Summer	99.396	0.396	0.6	7.4	O K
180 min Summer	99.388	0.388	0.6	7.3	O K
240 min Summer	99.374	0.374	0.6	7.0	O K
360 min Summer	99.344	0.344	0.6	6.4	O K
480 min Summer	99.313	0.313	0.6	5.8	O K
600 min Summer	99.282	0.282	0.6	5.2	O K
720 min Summer	99.253	0.253	0.6	4.7	O K
960 min Summer	99.199	0.199	0.6	3.6	O K
1440 min Summer	99.116	0.116	0.6	2.0	O K
2160 min Summer	99.054	0.054	0.6	0.8	O K
2880 min Summer	99.042	0.042	0.5	0.6	O K
4320 min Summer	99.031	0.031	0.4	0.4	O K
5760 min Summer	99.025	0.025	0.3	0.3	O K
7200 min Summer	99.021	0.021	0.3	0.2	O K
8640 min Summer	99.019	0.019	0.2	0.2	O K
10080 min Summer	99.018	0.018	0.2	0.2	O K
15 min Winter	99.288	0.288	0.6	5.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	60
120 min Summer	34.307	0.0	104
180 min Summer	25.552	0.0	136
240 min Summer	20.570	0.0	168
360 min Summer	15.173	0.0	238
480 min Summer	12.206	0.0	306
600 min Summer	10.302	0.0	372
720 min Summer	8.963	0.0	436
960 min Summer	7.189	0.0	560
1440 min Summer	5.257	0.0	794
2160 min Summer	3.836	0.0	1108
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3664
8640 min Summer	1.289	0.0	4336
10080 min Summer	1.142	0.0	5096
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.369	0.369	0.6	6.9	O K
60 min Winter	99.437	0.437	0.6	8.2	O K
120 min Winter	99.465	0.465	0.6	8.7	O K
180 min Winter	99.452	0.452	0.6	8.5	O K
240 min Winter	99.431	0.431	0.6	8.1	O K
360 min Winter	99.385	0.385	0.6	7.2	O K
480 min Winter	99.336	0.336	0.6	6.3	O K
600 min Winter	99.288	0.288	0.6	5.3	O K
720 min Winter	99.242	0.242	0.6	4.5	O K
960 min Winter	99.161	0.161	0.6	2.9	O K
1440 min Winter	99.058	0.058	0.6	0.9	O K
2160 min Winter	99.039	0.039	0.5	0.5	O K
2880 min Winter	99.031	0.031	0.4	0.4	O K
4320 min Winter	99.023	0.023	0.3	0.2	O K
5760 min Winter	99.019	0.019	0.2	0.2	O K
7200 min Winter	99.018	0.018	0.2	0.1	O K
8640 min Winter	99.016	0.016	0.2	0.1	O K
10080 min Winter	99.015	0.015	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	146
240 min Winter	20.570	0.0	184
360 min Winter	15.173	0.0	258
480 min Winter	12.206	0.0	332
600 min Winter	10.302	0.0	400
720 min Winter	8.963	0.0	466
960 min Winter	7.189	0.0	588
1440 min Winter	5.257	0.0	778
2160 min Winter	3.836	0.0	1100
2880 min Winter	3.063	0.0	1464
4320 min Winter	2.226	0.0	2164
5760 min Winter	1.773	0.0	2832
7200 min Winter	1.487	0.0	3664
8640 min Winter	1.289	0.0	4360
10080 min Winter	1.142	0.0	5016

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.022

Time (mins) From:	To:	Area (ha)
0	4	0.022

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	6.4
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	17.8	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.600

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 121 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.255	0.255	0.4	2.8	O K
30 min Summer	99.326	0.326	0.4	3.6	O K
60 min Summer	99.381	0.381	0.4	4.2	O K
120 min Summer	99.400	0.400	0.4	4.4	O K
180 min Summer	99.392	0.392	0.4	4.3	O K
240 min Summer	99.378	0.378	0.4	4.2	O K
360 min Summer	99.348	0.348	0.4	3.8	O K
480 min Summer	99.317	0.317	0.4	3.5	O K
600 min Summer	99.287	0.287	0.4	3.1	O K
720 min Summer	99.257	0.257	0.4	2.8	O K
960 min Summer	99.203	0.203	0.4	2.2	O K
1440 min Summer	99.119	0.119	0.4	1.3	O K
2160 min Summer	99.055	0.055	0.4	0.5	O K
2880 min Summer	99.043	0.043	0.3	0.4	O K
4320 min Summer	99.031	0.031	0.2	0.3	O K
5760 min Summer	99.025	0.025	0.2	0.2	O K
7200 min Summer	99.021	0.021	0.2	0.2	O K
8640 min Summer	99.018	0.018	0.1	0.1	O K
10080 min Summer	99.016	0.016	0.1	0.1	O K
15 min Winter	99.288	0.288	0.4	3.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	60
120 min Summer	34.307	0.0	104
180 min Summer	25.552	0.0	136
240 min Summer	20.570	0.0	170
360 min Summer	15.173	0.0	238
480 min Summer	12.206	0.0	306
600 min Summer	10.302	0.0	372
720 min Summer	8.963	0.0	436
960 min Summer	7.189	0.0	560
1440 min Summer	5.257	0.0	794
2160 min Summer	3.836	0.0	1108
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2904
7200 min Summer	1.487	0.0	3664
8640 min Summer	1.289	0.0	4344
10080 min Summer	1.142	0.0	5080
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.371	0.371	0.4	4.1	O K
60 min Winter	99.440	0.440	0.4	4.9	O K
120 min Winter	99.469	0.469	0.4	5.2	O K
180 min Winter	99.457	0.457	0.4	5.1	O K
240 min Winter	99.437	0.437	0.4	4.8	O K
360 min Winter	99.391	0.391	0.4	4.3	O K
480 min Winter	99.342	0.342	0.4	3.8	O K
600 min Winter	99.294	0.294	0.4	3.2	O K
720 min Winter	99.248	0.248	0.4	2.7	O K
960 min Winter	99.166	0.166	0.4	1.8	O K
1440 min Winter	99.060	0.060	0.4	0.6	O K
2160 min Winter	99.039	0.039	0.3	0.4	O K
2880 min Winter	99.031	0.031	0.2	0.3	O K
4320 min Winter	99.023	0.023	0.2	0.2	O K
5760 min Winter	99.018	0.018	0.1	0.1	O K
7200 min Winter	99.015	0.015	0.1	0.1	O K
8640 min Winter	99.014	0.014	0.1	0.1	O K
10080 min Winter	99.013	0.013	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	116
180 min Winter	25.552	0.0	146
240 min Winter	20.570	0.0	184
360 min Winter	15.173	0.0	260
480 min Winter	12.206	0.0	332
600 min Winter	10.302	0.0	402
720 min Winter	8.963	0.0	468
960 min Winter	7.189	0.0	588
1440 min Winter	5.257	0.0	780
2160 min Winter	3.836	0.0	1100
2880 min Winter	3.063	0.0	1468
4320 min Winter	2.226	0.0	2200
5760 min Winter	1.773	0.0	2880
7200 min Winter	1.487	0.0	3624
8640 min Winter	1.289	0.0	4344
10080 min Winter	1.142	0.0	5056

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.013

Time (mins) From:	To:	Area (ha)
0	4	0.013

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	7.5
Max Percolation (l/s)	10.4	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.600

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 102 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.223	0.223	0.3	2.1	O K
30 min Summer	99.285	0.285	0.3	2.7	O K
60 min Summer	99.331	0.331	0.3	3.2	O K
120 min Summer	99.344	0.344	0.3	3.3	O K
180 min Summer	99.336	0.336	0.3	3.2	O K
240 min Summer	99.321	0.321	0.3	3.1	O K
360 min Summer	99.292	0.292	0.3	2.8	O K
480 min Summer	99.261	0.261	0.3	2.5	O K
600 min Summer	99.232	0.232	0.3	2.2	O K
720 min Summer	99.204	0.204	0.3	1.9	O K
960 min Summer	99.155	0.155	0.3	1.5	O K
1440 min Summer	99.085	0.085	0.3	0.8	O K
2160 min Summer	99.047	0.047	0.3	0.4	O K
2880 min Summer	99.038	0.038	0.2	0.3	O K
4320 min Summer	99.028	0.028	0.2	0.2	O K
5760 min Summer	99.022	0.022	0.1	0.2	O K
7200 min Summer	99.019	0.019	0.1	0.1	O K
8640 min Summer	99.016	0.016	0.1	0.1	O K
10080 min Summer	99.015	0.015	0.1	0.1	O K
15 min Winter	99.252	0.252	0.3	2.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	60
120 min Summer	34.307	0.0	98
180 min Summer	25.552	0.0	130
240 min Summer	20.570	0.0	166
360 min Summer	15.173	0.0	234
480 min Summer	12.206	0.0	300
600 min Summer	10.302	0.0	366
720 min Summer	8.963	0.0	428
960 min Summer	7.189	0.0	550
1440 min Summer	5.257	0.0	778
2160 min Summer	3.836	0.0	1100
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2192
5760 min Summer	1.773	0.0	2936
7200 min Summer	1.487	0.0	3672
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5056
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.324	0.324	0.3	3.1	O K
60 min Winter	99.382	0.382	0.3	3.7	O K
120 min Winter	99.401	0.401	0.3	3.9	O K
180 min Winter	99.389	0.389	0.3	3.7	O K
240 min Winter	99.368	0.368	0.3	3.5	O K
360 min Winter	99.321	0.321	0.3	3.1	O K
480 min Winter	99.273	0.273	0.3	2.6	O K
600 min Winter	99.227	0.227	0.3	2.2	O K
720 min Winter	99.184	0.184	0.3	1.7	O K
960 min Winter	99.112	0.112	0.3	1.1	O K
1440 min Winter	99.047	0.047	0.3	0.4	O K
2160 min Winter	99.035	0.035	0.2	0.3	O K
2880 min Winter	99.028	0.028	0.2	0.2	O K
4320 min Winter	99.020	0.020	0.1	0.2	O K
5760 min Winter	99.016	0.016	0.1	0.1	O K
7200 min Winter	99.014	0.014	0.1	0.1	O K
8640 min Winter	99.012	0.012	0.1	0.1	O K
10080 min Winter	99.011	0.011	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	114
180 min Winter	25.552	0.0	142
240 min Winter	20.570	0.0	180
360 min Winter	15.173	0.0	254
480 min Winter	12.206	0.0	324
600 min Winter	10.302	0.0	392
720 min Winter	8.963	0.0	456
960 min Winter	7.189	0.0	568
1440 min Winter	5.257	0.0	748
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1472
4320 min Winter	2.226	0.0	2204
5760 min Winter	1.773	0.0	2848
7200 min Winter	1.487	0.0	3568
8640 min Winter	1.289	0.0	4408
10080 min Winter	1.142	0.0	5184

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.010

Time (mins) From:	To:	Area (ha)
0	4	0.010

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	9.5
Membrane Percolation (mm/hr)	1000	Length (m)	3.4
Max Percolation (l/s)	9.0	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 179 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.354	0.354	0.3	3.5	O K
30 min Summer	99.458	0.458	0.3	4.6	O K
60 min Summer	99.549	0.549	0.3	5.5	O K
120 min Summer	99.599	0.599	0.3	6.0	O K
180 min Summer	99.594	0.594	0.3	6.0	O K
240 min Summer	99.579	0.579	0.3	5.8	O K
360 min Summer	99.550	0.550	0.3	5.5	O K
480 min Summer	99.519	0.519	0.3	5.2	O K
600 min Summer	99.487	0.487	0.3	4.9	O K
720 min Summer	99.455	0.455	0.3	4.5	O K
960 min Summer	99.392	0.392	0.3	3.9	O K
1440 min Summer	99.279	0.279	0.3	2.7	O K
2160 min Summer	99.152	0.152	0.3	1.4	O K
2880 min Summer	99.077	0.077	0.3	0.7	O K
4320 min Summer	99.043	0.043	0.3	0.3	O K
5760 min Summer	99.034	0.034	0.2	0.2	O K
7200 min Summer	99.029	0.029	0.2	0.2	O K
8640 min Summer	99.025	0.025	0.2	0.1	O K
10080 min Summer	99.022	0.022	0.2	0.1	O K
15 min Winter	99.399	0.399	0.3	4.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	33
60 min Summer	55.250	0.0	62
120 min Summer	34.307	0.0	120
180 min Summer	25.552	0.0	156
240 min Summer	20.570	0.0	188
360 min Summer	15.173	0.0	252
480 min Summer	12.206	0.0	322
600 min Summer	10.302	0.0	388
720 min Summer	8.963	0.0	456
960 min Summer	7.189	0.0	588
1440 min Summer	5.257	0.0	838
2160 min Summer	3.836	0.0	1188
2880 min Summer	3.063	0.0	1504
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2920
7200 min Summer	1.487	0.0	3616
8640 min Summer	1.289	0.0	4400
10080 min Summer	1.142	0.0	5136
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.520	0.520	0.3	5.2	O K
60 min Winter	99.628	0.628	0.3	6.3	O K
120 min Winter	99.699	0.699	0.3	7.0	O K
180 min Winter	99.702	0.702	0.3	7.1	Flood Risk
240 min Winter	99.679	0.679	0.3	6.8	O K
360 min Winter	99.638	0.638	0.3	6.4	O K
480 min Winter	99.591	0.591	0.3	5.9	O K
600 min Winter	99.541	0.541	0.3	5.4	O K
720 min Winter	99.490	0.490	0.3	4.9	O K
960 min Winter	99.392	0.392	0.3	3.9	O K
1440 min Winter	99.221	0.221	0.3	2.2	O K
2160 min Winter	99.062	0.062	0.3	0.5	O K
2880 min Winter	99.042	0.042	0.3	0.3	O K
4320 min Winter	99.031	0.031	0.2	0.2	O K
5760 min Winter	99.025	0.025	0.2	0.1	O K
7200 min Winter	99.021	0.021	0.1	0.1	O K
8640 min Winter	99.019	0.019	0.1	0.1	O K
10080 min Winter	99.018	0.018	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	118
180 min Winter	25.552	0.0	172
240 min Winter	20.570	0.0	218
360 min Winter	15.173	0.0	274
480 min Winter	12.206	0.0	350
600 min Winter	10.302	0.0	424
720 min Winter	8.963	0.0	498
960 min Winter	7.189	0.0	634
1440 min Winter	5.257	0.0	880
2160 min Winter	3.836	0.0	1168
2880 min Winter	3.063	0.0	1472
4320 min Winter	2.226	0.0	2196
5760 min Winter	1.773	0.0	2880
7200 min Winter	1.487	0.0	3656
8640 min Winter	1.289	0.0	4448
10080 min Winter	1.142	0.0	5048

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.016

Time (mins) From:	To:	Area (ha)
0	4	0.016

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	3.4
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	9.4	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 114 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	99.247	0.247	0.7	5.1	O K
30 min Summer	99.314	0.314	0.7	6.6	O K
60 min Summer	99.364	0.364	0.7	7.7	O K
120 min Summer	99.379	0.379	0.7	8.0	O K
180 min Summer	99.370	0.370	0.7	7.8	O K
240 min Summer	99.355	0.355	0.7	7.5	O K
360 min Summer	99.325	0.325	0.7	6.8	O K
480 min Summer	99.295	0.295	0.7	6.2	O K
600 min Summer	99.265	0.265	0.7	5.5	O K
720 min Summer	99.236	0.236	0.7	4.9	O K
960 min Summer	99.183	0.183	0.7	3.7	O K
1440 min Summer	99.105	0.105	0.7	2.0	O K
2160 min Summer	99.051	0.051	0.7	0.9	O K
2880 min Summer	99.041	0.041	0.6	0.6	O K
4320 min Summer	99.030	0.030	0.4	0.4	O K
5760 min Summer	99.024	0.024	0.4	0.3	O K
7200 min Summer	99.022	0.022	0.3	0.2	O K
8640 min Summer	99.020	0.020	0.3	0.2	O K
10080 min Summer	99.019	0.019	0.2	0.2	O K
15 min Winter	99.278	0.278	0.7	5.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	127.204	0.0	18
30 min Summer	85.821	0.0	32
60 min Summer	55.250	0.0	60
120 min Summer	34.307	0.0	102
180 min Summer	25.552	0.0	134
240 min Summer	20.570	0.0	168
360 min Summer	15.173	0.0	236
480 min Summer	12.206	0.0	304
600 min Summer	10.302	0.0	368
720 min Summer	8.963	0.0	434
960 min Summer	7.189	0.0	558
1440 min Summer	5.257	0.0	782
2160 min Summer	3.836	0.0	1104
2880 min Summer	3.063	0.0	1468
4320 min Summer	2.226	0.0	2200
5760 min Summer	1.773	0.0	2904
7200 min Summer	1.487	0.0	3656
8640 min Summer	1.289	0.0	4288
10080 min Summer	1.142	0.0	5120
15 min Winter	127.204	0.0	18

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	99.356	0.356	0.7	7.5	O K
60 min Winter	99.420	0.420	0.7	8.9	O K
120 min Winter	99.444	0.444	0.7	9.4	O K
180 min Winter	99.431	0.431	0.7	9.1	O K
240 min Winter	99.409	0.409	0.7	8.6	O K
360 min Winter	99.363	0.363	0.7	7.6	O K
480 min Winter	99.314	0.314	0.7	6.6	O K
600 min Winter	99.266	0.266	0.7	5.5	O K
720 min Winter	99.222	0.222	0.7	4.6	O K
960 min Winter	99.143	0.143	0.7	2.9	O K
1440 min Winter	99.052	0.052	0.7	0.9	O K
2160 min Winter	99.037	0.037	0.5	0.6	O K
2880 min Winter	99.030	0.030	0.4	0.4	O K
4320 min Winter	99.022	0.022	0.3	0.2	O K
5760 min Winter	99.020	0.020	0.3	0.2	O K
7200 min Winter	99.018	0.018	0.2	0.2	O K
8640 min Winter	99.017	0.017	0.2	0.1	O K
10080 min Winter	99.016	0.016	0.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	85.821	0.0	32
60 min Winter	55.250	0.0	60
120 min Winter	34.307	0.0	114
180 min Winter	25.552	0.0	144
240 min Winter	20.570	0.0	182
360 min Winter	15.173	0.0	258
480 min Winter	12.206	0.0	330
600 min Winter	10.302	0.0	398
720 min Winter	8.963	0.0	462
960 min Winter	7.189	0.0	580
1440 min Winter	5.257	0.0	752
2160 min Winter	3.836	0.0	1104
2880 min Winter	3.063	0.0	1472
4320 min Winter	2.226	0.0	2156
5760 min Winter	1.773	0.0	2912
7200 min Winter	1.487	0.0	3544
8640 min Winter	1.289	0.0	4280
10080 min Winter	1.142	0.0	5144

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Rainfall Details

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)	19.500	Shortest Storm (mins)	15
Ratio R	0.342	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.024

Time (mins) From:	To:	Area (ha)
0	4	0.024

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.07200	Width (m)	6.4
Membrane Percolation (mm/hr)	1000	Length (m)	11.3
Max Percolation (l/s)	20.1	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	0
Porosity	0.30	Evaporation (mm/day)	0
Invert Level (m)	99.000	Cap Volume Depth (m)	0.800

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