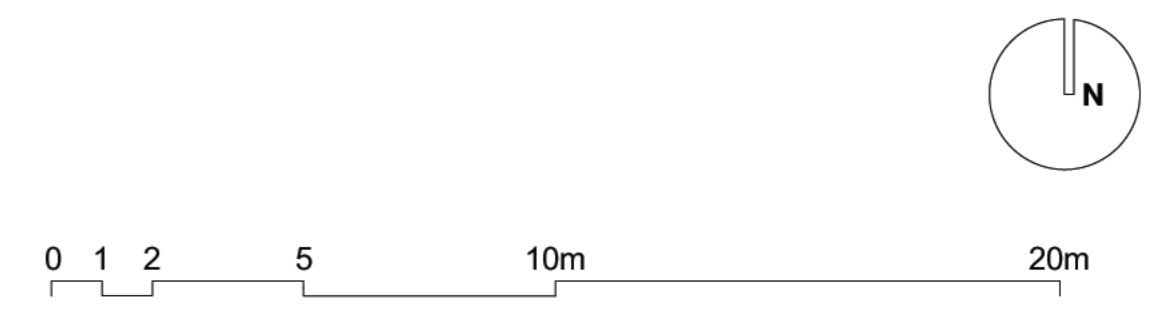


Downs Villas



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Legend:

- - - Site boundary
- - - Existing right of way
- - - Existing fencing (TBD)
- - - Potential curtilage

- Plot A - 6 units**
 A1 - 3B6p 165sqm (single storey)
 A2 - 3B6p 210sqm
 A3 - 2B4-5p 140sqm
 A4 - 4B8p 235sqm
 A5 - 4B8p 230sqm
 A6 - 2B4-5p 130sqm

- Plot A - Parking**
 2 visitors space
 3 space per 4B+ dwellings
 2 space per 2B & 3B dwellings



Plot A

Planning Application



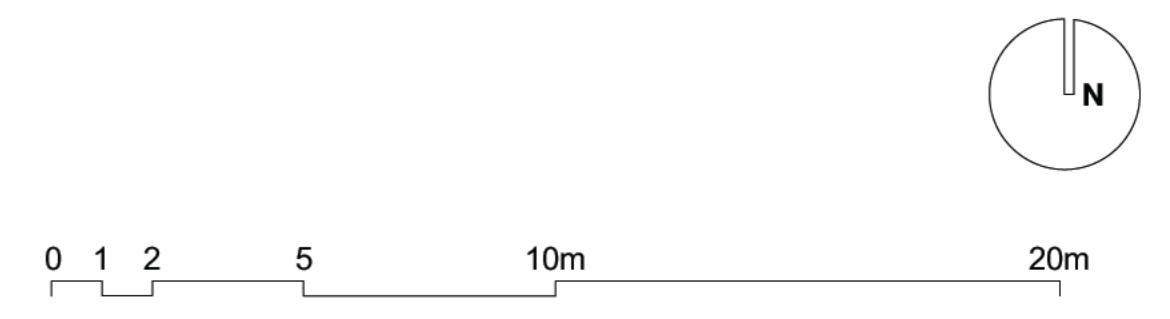
Stebbing development
 Land adjacent to Stebbing, Dunmow, Essex
 Plot 1a CM6 3SH/ Plot 1b CM6 3RA

PROJECT NO. 21202
 DWG NO. DR_0200A
 REV. -
 TITLE Proposed Ground floor - Plot A2

DATE 20/09/2022 SCALE 1:150 @ A0 / 1:300 @ A2

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Downs Villas



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Legend:

- Site boundary
- Existing right of way
- Existing fencing (TBD)
- Potential curtilage

Plot A - 6 units
 A1 - 3B6p 165sqm (single storey)
 A2 - 3B6p 210sqm
 A3 - 2B4-5p 140sqm
 A4 - 4B8p 235sqm
 A5 - 4B8p 230sqm
 A6 - 2B4-5p 130sqm

Plot A - Parking
 2 visitors space
 3 space per 4B+ dwellings
 2 space per 2B & 3B dwellings



Plot A

Planning Application

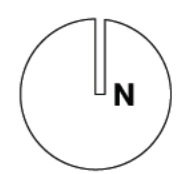


Stebbing development
 Land adjacent to Stebbing, Dunmow, Essex
 Plot 1a CM6 3SH/ Plot 1b CM6 3RA

PROJECT NO. 21202
 DWG NO. DR_0201A
 REV. -
 TITLE
 Proposed First floor - Plot A2

DATE 20/09/2022
 SCALE 1:150 @ A0 / 1:300 @ A2

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0 1 2 5 10m 20m

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Legend:

- - - Site boundary
- - - Existing right of way
- - - Existing fencing (TBD)
- - - Potential curtilage

- Plot B - 5 units**
 B1 - 2b4p/(3B5p) 140sqm
 B2 - 2b4-5p 130sqm
 B3 - 4b8p 230sqm
 B4 - 2b4p/(3B5p) 140sqm
 B5 - 3b6p 140sqm

- Plot B - Parking**
 2 visitors space
 2 space per 2B & 3B dwellings
 3 space per 4B+ dwellings



Planning Application

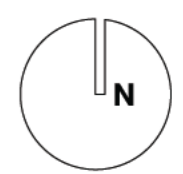
Stepping development
 Land adjacent to Stebbing, Dunmow, Essex
 Plot 1a CM6 3SH/ Plot 1b CM6 3RA

PROJECT NO.	DWG NO.	REV.
21202	DR_0190B	-

TITLE
 Proposed Site plan - Plot B2

DATE	SCALE
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0 1 2 5 10m 20m

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Legend:

- - - Site boundary
- - - Existing right of way
- - - Existing fencing (TBD)
- - - Potential curtilage

- Plot B - 5 units**
 B1 - 2b4p/(3B5p) 140sqm
 B2 - 2b4-5p 130sqm
 B3 - 4b8p 230sqm
 B4 - 2b4p/(3B5p) 140sqm
 B5 - 3b6p 140sqm

- Plot B - Parking**
 2 visitors space
 2 space per 2B & 3B dwellings
 3 space per 4B+ dwellings



Planning Application

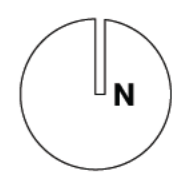
Stepping development
 Land adjacent to Stebbing, Dunmow, Essex
 Plot 1a CM6 3SH/ Plot 1b CM6 3RA

PROJECT NO.	DWG NO.	REV.
21202	DR_0200B	-

TITLE
 Proposed Ground floor - Plot B2

DATE	SCALE
20/09/2022	1:150 @ A0 / 1:300 @ A2

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0 1 2 5 10m 20m

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Legend:

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- - - Existing fencing (TBD)
- - - Potential curtilage

- Plot B - 5 units**
 B1 - 2b4p/(3B5p) 140sqm
 B2 - 2b4-5p 130sqm
 B3 - 4b8p 230sqm
 B4 - 2b4p/(3B5p) 140sqm
 B5 - 3b6p 140sqm

- Plot B - Parking**
 2 visitors space
 2 space per 2B & 3B dwellings
 3 space per 4B+ dwellings



Planning Application

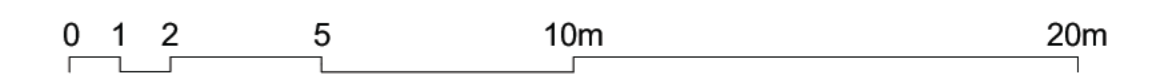
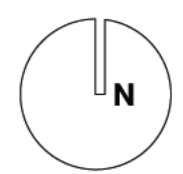
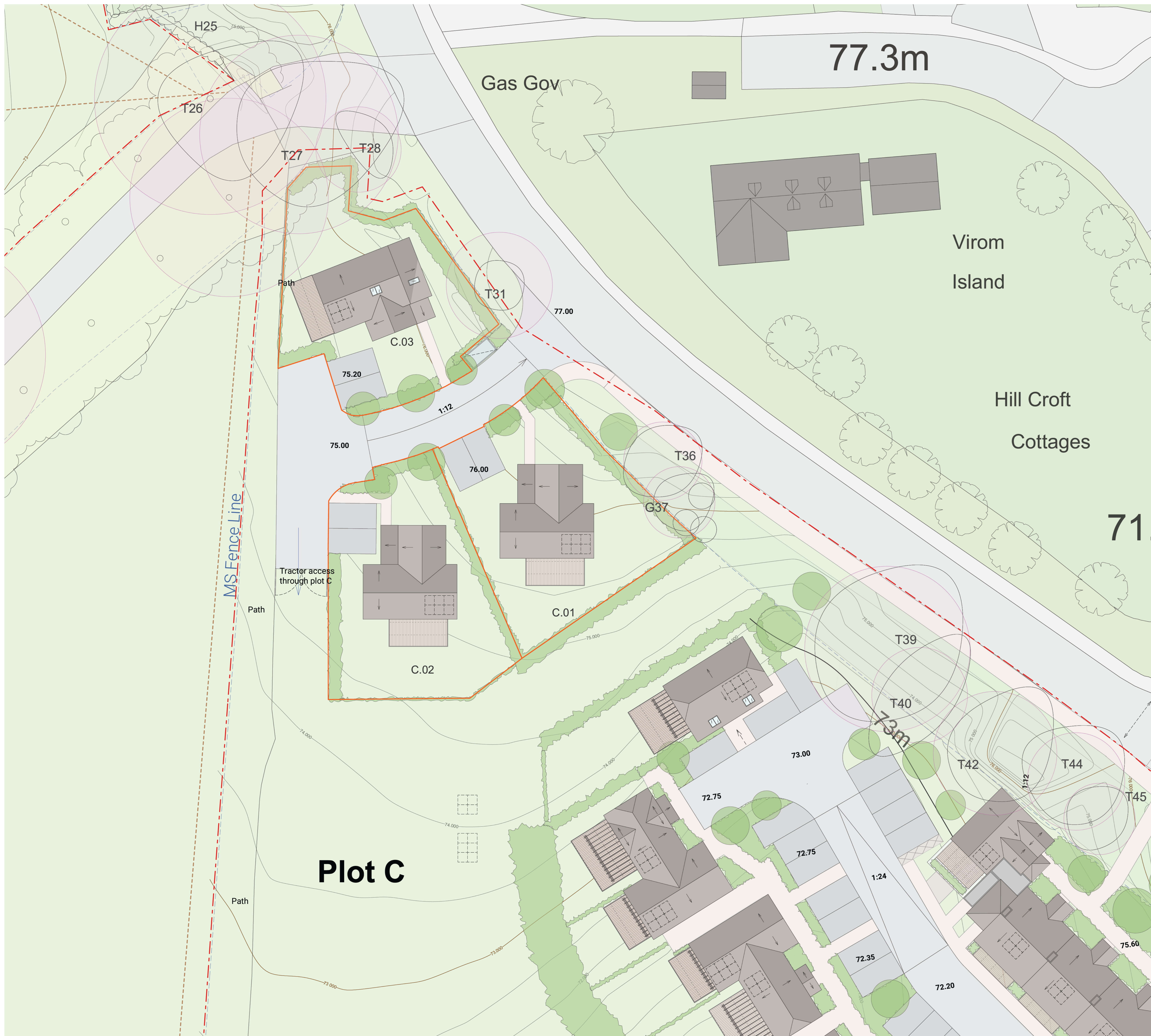
Stepping development
 Land adjacent to Stebbing, Dunmow, Essex
 Plot 1a CM6 3SH/ Plot 1b CM6 3RA

PROJECT NO. 21202	DWG NO. DR_0201B	REV. -
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TITLE
Proposed First floor - Plot B2

DATE 20/09/2022	SCALE 1:150 @ A0 / 1:300 @ A2
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Legend:

- Site boundary
- Existing right of way
- Existing fencing (TBD)
- Potential curtilage

Plot C - 3 units (Self-build)

- C1 - 3b6p 140sqm
- C2 - 3b6p 140sqm
- C3 - 2b4-5p 140sqm

Plot C - Parking

2 space per 2B & 3B dwellings

Plot C

Planning Application



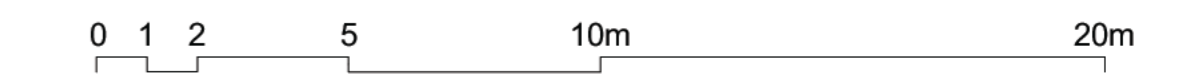
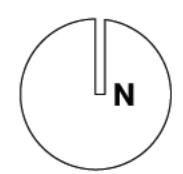
Stepping development
Land adjacent to Stebbing, Dunmow, Essex
Plot 1a CM6 3SH/ Plot 1b CM6 3RA

PROJECT NO. 21202 DWG NO. DR_190C REV. -

TITLE
Proposed Site plan - Plot C2

DATE 20/09/2022 SCALE 1:150 @ A0 / 1:300 @ A2

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Legend:

- Site boundary
- Existing right of way
- Existing fencing (TBD)
- Potential curtilage

Plot C - 3 units (Self-build)
 C1 - 3b6p 140sqm
 C2 - 3b6p 140sqm
 C3 - 2b4-5p 140sqm

Plot C - Parking
 2 space per 2B & 3B dwellings

Plot C

Planning Application

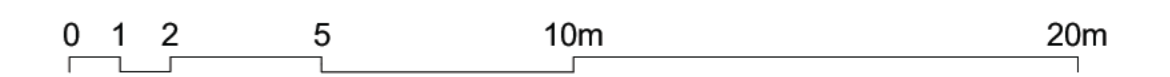
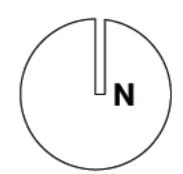


Stepping development
 Land adjacent to Stebbing, Dunmow, Essex
 Plot 1a CM6 3SH/ Plot 1b CM6 3RA

PROJECT NO. 21202 DWG NO. DR_200C REV. -
 TITLE
 Proposed Ground floor - Plot C2

DATE 20/09/2022 SCALE 1:150 @ A0 / 1:300 @ A2

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Legend:

- Site boundary
- Existing right of way
- Existing fencing (TBD)
- Potential curtilage

Plot C - 3 units (Self-build)
 C1 - 3b6p 140sqm
 C2 - 3b6p 140sqm
 C3 - 2b4-5p 140sqm

Plot C - Parking
 2 space per 2B & 3B dwellings

Planning Application



Stepping development
 Land adjacent to Stebbing, Dunmow, Essex
 Plot 1a CM6 3SH/ Plot 1b CM6 3RA

PROJECT NO.	DWG NO.	REV.
21202	DR_201C	-

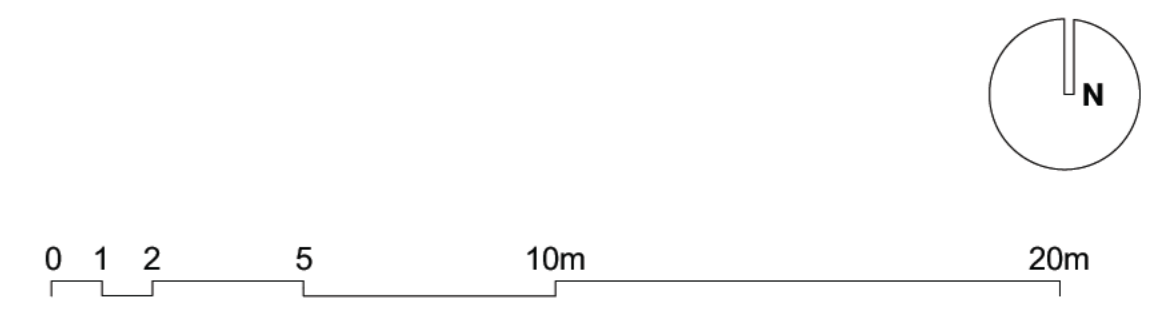
TITLE
 Proposed First floor - Plot C2

DATE	SCALE
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Plot D



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 2. This drawing may not be based on survey drawings and areas are therefore subject to change as part of the general design process and/or the obtention of a survey drawing study.

Legend:

- Site boundary
- Existing right of way
- Existing fencing (TBD)
- Potential curtilage
- First home
- Shared ownership
- Affordable rent
- Affordable rent - Wheelchair accessible

Plot D - 14 units + 1 commercial unit

Alms houses (Affordable rent)
 5no. units - inc. wheelchair accessible
 D1 - 1b2p / 54sqm AR
 D2 - 2b4p W / 72sqm AR
 D3 - 1b2p W / 54sqm AR
 D4 - 2b4p W / 72sqm AR
 D5 - 1b2p / 54sqm AR

West houses (3 affordable rent/3 shared ownership & 3 first home)

9no. units
 D6 - 1b2p / 53sqm FH
 D7 - 1b2p / 53sqm FH
 D8 - 2b4p / 79sqm AR
 D9 - 1b2p / 52sqm FH
 D10 - 2b4p / 82sqm AR
 D11 - 3b5p / 96sqm AR
 D12 - 3b5p / 96sqm SO
 D13 - 2b4p / 82sqm SO
 D14 - 3b5p / 102sqm SO

Plot D - Commercial (D.15)
 2no. units (can be subdivided)
 GF GIA - 104sqm
 1st GIA - 61sqm

Plot D - Parking
 23 parking space for office/school
 4 visitors space
 2 space per 2B & 3B dwellings
 1 space per 1B dwellings

Planning Application

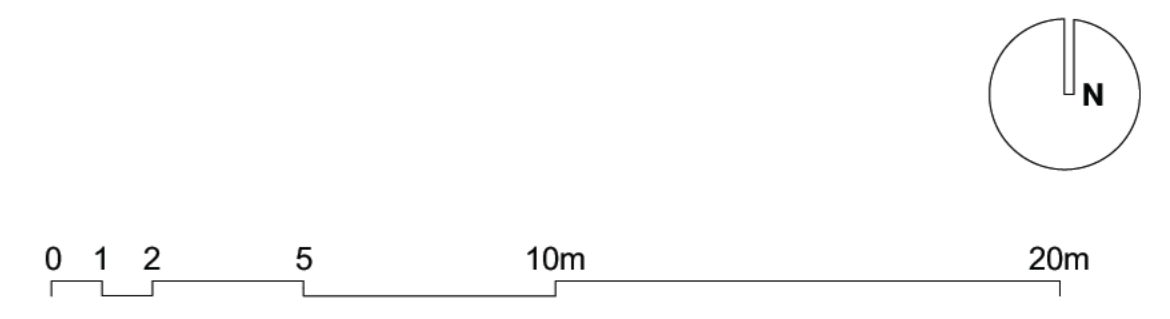


Stepping development
 Land adjacent to Stebbing, Dunmow, Essex
 Plot 1a CM6 3SH/ Plot 1b CM6 3RA

PROJECT NO. 21202 DWG NO. DR_0190 D2 REV. -
 TITLE Proposed Site plan - Plot D-2

DATE 20/09/2022 SCALE 1:150 @ A0 / 1:300 @ A2

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Legend:

- Site boundary
- Existing right of way
- Existing fencing (TBD)
- Potential curtilage
- First home
- Shared ownership
- Affordable rent
- Affordable rent - Wheelchair accessible

Plot D - 14 units + 1 commercial unit

Alms houses (Affordable rent)
 5no. units - inc. wheelchair accessible
 D1 - 1b2p / 54sqm AR
 D2 - 2b4p W / 72sqm AR
 D3 - 1b2p W / 54sqm AR
 D4 - 2b4p W / 72sqm AR
 D5 - 1b2p / 54sqm AR

**West houses
 (3 affordable rent/3 shared ownership
 & 3 first home)**
 9no. units
 D6 - 1b2p / 53sqm FH
 D7 - 1b2p / 53sqm FH
 D8 - 2b4p / 79sqm AR
 D9 - 1b2p / 52sqm FH
 D10 - 2b4p / 82sqm AR
 D11 - 3b5p / 96sqm AR
 D12 - 3b5p / 96sqm SO
 D13 - 2b4p / 82sqm SO
 D14 - 3b5p / 102sqm SO

Plot D - Commercial (D.15)
 2no. units (can be subdivided)
 GF GIA - 104sqm
 1st GIA - 61sqm

Plot D - Parking
 23 parking space for office/school
 4 visitors space
 2 space per 2B & 3B dwellings
 1 space per 1B dwellings

Plot D

Consented 1 storey scheme

Laurel House

Planning Application

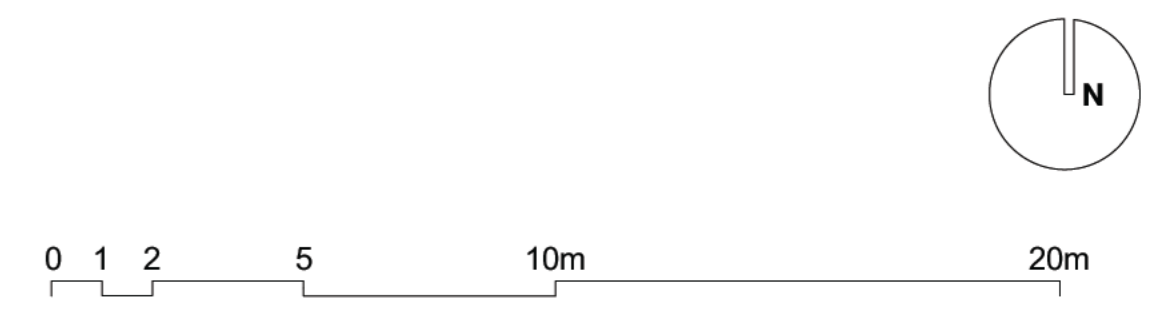


Stepping development
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 Plot 1a CM6 3SH/ Plot 1b CM6 3RA

PROJECT NO.	DWG NO.	REV.
21202	DR_0199 D2	-
TITLE		
Proposed Lower - Plot D-2		

DATE	SCALE
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Legend:

- Site boundary
- Existing right of way
- Existing fencing (TBD)
- Potential curtilage
- First home
- Shared ownership
- Affordable rent
- Affordable rent - Wheelchair accessible

Plot D - 14 units + 1 commercial unit

- Alms houses (Affordable rent)**
 5no. units - inc. wheelchair accessible
 D1 - 1b2p / 54sqm AR
 D2 - 2b4p W / 72sqm AR
 D3 - 1b2p W / 54sqm AR
 D4 - 2b4p W / 72sqm AR
 D5 - 1b2p / 54sqm AR

- West houses
 (3 affordable rent/3 shared ownership
 & 3 first home)**
 9no. units
 D6 - 1b2p / 53sqm FH
 D7 - 1b2p / 53sqm FH
 D8 - 2b4p / 79sqm AR
 D9 - 1b2p / 52sqm FH
 D10 - 2b4p / 82sqm AR
 D11 - 3b5p / 96sqm AR
 D12 - 3b5p / 96sqm SO
 D13 - 2b4p / 82sqm SO
 D14 - 3b5p / 102sqm SO

- Plot D - Commercial (D.15)**
 2no. units (can be subdivided)
 GF GIA - 104sqm
 1st GIA - 61sqm

- Plot D - Parking**
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 4 visitors space
 2 space per 2B & 3B dwellings
 1 space per 1B dwellings

Plot D

Consented 1 storey scheme

Laurel House

Planning Application



Stepping development
 Land adjacent to Stebbing, Dunmow, Essex
 Plot 1a CM6 3SH/ Plot 1b CM6 3RA

PROJECT NO.	DWG NO.	REV.
21202	DR_0200 D2	-
TITLE		
Proposed GF - Plot D-2		

DATE	SCALE
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Appendix E Surface Water Drainage Strategy

- Greenfield Runoff Rates 1ha
- Stantec Drawings 332511125/203/001-002
- MicroDrainage Source Control Cascade Outputs:
 - 1 in 30 AP +35%cc and 1 in 10 (10%) AP events (for half drain time)
 - 1 in 100 AP +45%cc

FEH Greenfield Runoff

Using the 2008 Statistical Method QMED Equation



Project Title	Land at Stebbing, Dunmow, Essex	
Project No	332511125	100

Methodology as set out in SuDS Manual 24.3.2

[SU DS Manual Chapter 24](#)

1 Retrieve FEH Catchment Information

Define BFIHOST definition source

FEH see note 1

Catchment Descriptors

BFIHOST	0.634	
SAAR	585.0	see note 1
FARL	1.0	see note 2

2 Derive QBAR (mean annual flood)

Define area

Site Area	1.0	ha	
Applied Area	50.0	ha	see note 3

FEH Index Flood (SuDS Manual Equation 24.2)

QMED (Q₂)	1.1	l/s	see note 4
-----------------------------	-----	-----	------------

Calculate QBAR by dividing QMED by 2yr growth factor

QBAR	1.2	l/s	see note 5
-------------	-----	-----	------------

3 Select appropriate growth factors

FSR Hydrological Region

6

(refer to FSR Hydrological Region tab)

100yr Growth Curve Factor

GQ₁₀₀ 3.19

30yr Growth Curve Factor

GQ₃₀ 2.40

10yr Growth Curve Factor

GQ₁₀ 1.62

2yr Growth Curve Factor

GQ₂ 0.88

1yr Growth Curve Factor

GQ₁ 0.85



Figure 24.1 Hydrological areas

4 Derive Flood Frequency

Greenfield Runoff per 1ha

100yr Peak Runoff Rate

Q₁₀₀ 3.9 l/s

Q₁₀₀ 3.9 l/s/ha

30yr Peak Runoff Rate

Q₃₀ 3.0 l/s

Q₃₀ 3.0 l/s/ha

10yr Growth Curve Rate

Q₁₀ 2.0 l/s

Q₁₀ 2.0 l/s/ha

QBAR Peak Runoff Rate

QBAR 1.2 l/s

QBAR 1.2 l/s/ha

2yr Peak Runoff Rate

Q₂ 1.1 l/s

Q₂ 1.1 l/s/ha

1yr Peak Runoff Rate

Q₁ 1.0 l/s

Q₁ 1.0 l/s/ha

DOCUMENT ISSUE RECORD

Rev	Comments	Prepared	Date	Checked	Date
-	Original calculation	E Edney	12/05/2022	D Burgess	20/09/2023

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- MASTERPLAN PROVIDED BY ALISTAIR DOWNIE STUDIO DRAWING 21202_DR_020 AND AUSTIN DESIGN WORKS DRAWINGS SD200 & SD201, BOTH DATED SEPTEMBER 2023
- PERMEABLE PAVEMENT TO INCORPORATE CHECK DAMS AT REGULAR INTERVALS. RAMP AREAS AND FOOTPATHS WHILST SHOWN AS A PERMEABLE SURFACE HAVE BEEN EXCLUDED FROM THE ATTENUATION STORAGE CALCULATIONS AS THESE AREAS WILL LIKELY HOUSE UTILITIES AND/OR ARE STEEP SO PERCOLATION THROUGH THE SURFACE WILL NOT BE EFFICIENT.
- FOOTPATH ROUTES AND ATTENUATION BASIN DIMENSIONS TO BE CONFIRMED AT DETAILED DESIGN STAGE AND SUBJECT TO EASEMENTS AND EARTHWORKS.
- AT THIS DESIGN STAGE, IT HAS NOT BEEN POSSIBLE TO ELIMINATE ALL THE HEALTH AND SAFETY RISKS AND RESIDUAL RISKS TO THE PROPOSED GROUND WORKS, FOR EXAMPLE IN RELATION TO THE LOCATION/DEPTH OF UNDERGROUND UTILITIES, GROUND CONDITIONS AND SLOPE STABILITY.
- IN ACCORDANCE WITH THE CONSTRUCTION (DESIGN & MANAGEMENT) (CDM) REGULATIONS 2015, SUCH RESIDUAL RISKS NEED TO BE MITIGATED FOR BY THE CLIENT AND COMMUNICATED TO FUTURE DESIGN TEAMS SO AN ATTEMPT CAN BE MADE TO DESIGN THEM OUT AS THE DETAILED DESIGN IS PROGRESSED AND SITE CONSTRAINTS ARE FULLY UNDERSTOOD. ANY RISKS THAT ARE NOT DESIGNED OUT DURING THE DETAILED DESIGN STAGE MUST BE COMMUNICATED FURTHER TO THE CONSTRUCTION TEAM AND END USER SO THAT ADEQUATE MEASURES CAN BE PLANNED FOR AND MANAGED.
- SWALES AND ATTENUATION BASINS HAVE BEEN SIZED TO ALLOW FOR SOME CONTRIBUTION FROM OPEN SPACE FLOWS IN EXTREME EVENTS.
- SWALE A AND BASIN NORTH HAVE BEEN SIZED TO INCLUDE AN ALLOWANCE FROM OFF-SITE EXCEEDANCE FLOWS FROM 'THE DOWNS' IN EXTREME EVENTS.

POI	FIRST ISSUE	EE	RMF	2023.09.27
Issued/Revision		By	Appd	YYYY.MM.DD
		Dwn.	Dsgn.	Chkd.
		EE	RMF	2023.09.27
		Dwn.	Dsgn.	Chkd.

Issue Status
FOR INFORMATION

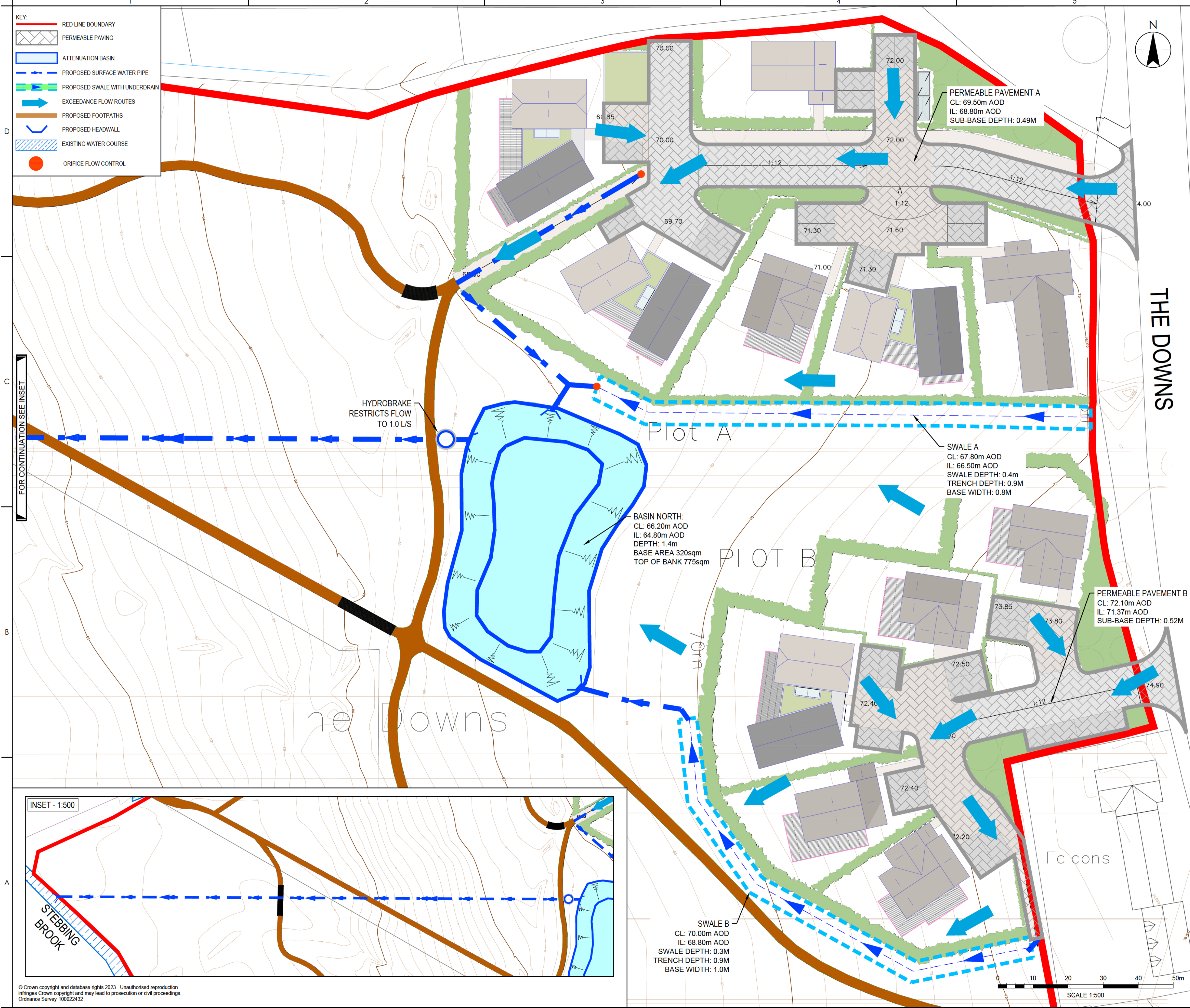
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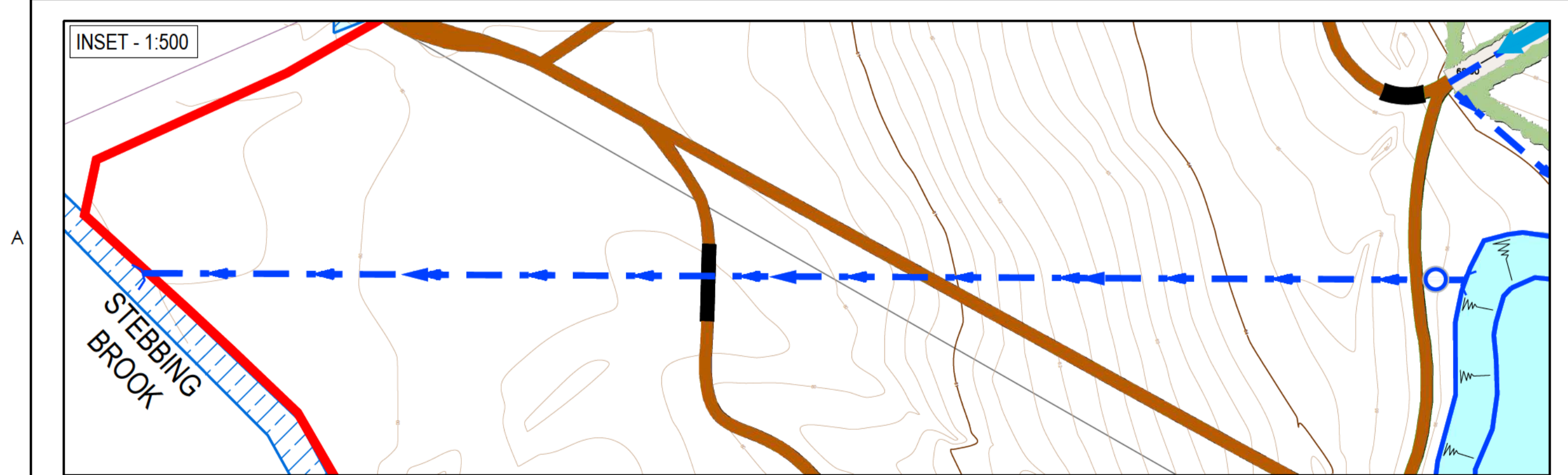
Client/Project
MONTARE
 LAND AT STEBBING, DUNMOW, ESSEX

Title
SURFACE WATER DRAINAGE STRATEGY - PLOTS A & B

Project No.	332511125	A1 Scale	1:250
Revision	PO	Drawing No.	48172/4002/001



FOR CONTINUATION SEE INSET



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PD	FIRST ISSUE	EE	RMF	2023.09.27
Issued/Revision		By	Appd	YYYY.MM.DD
		EE	RMF	2023.09.27
		Dwn.	Dsgn.	Chkd.
				YYYY.MM.DD

Issue Status

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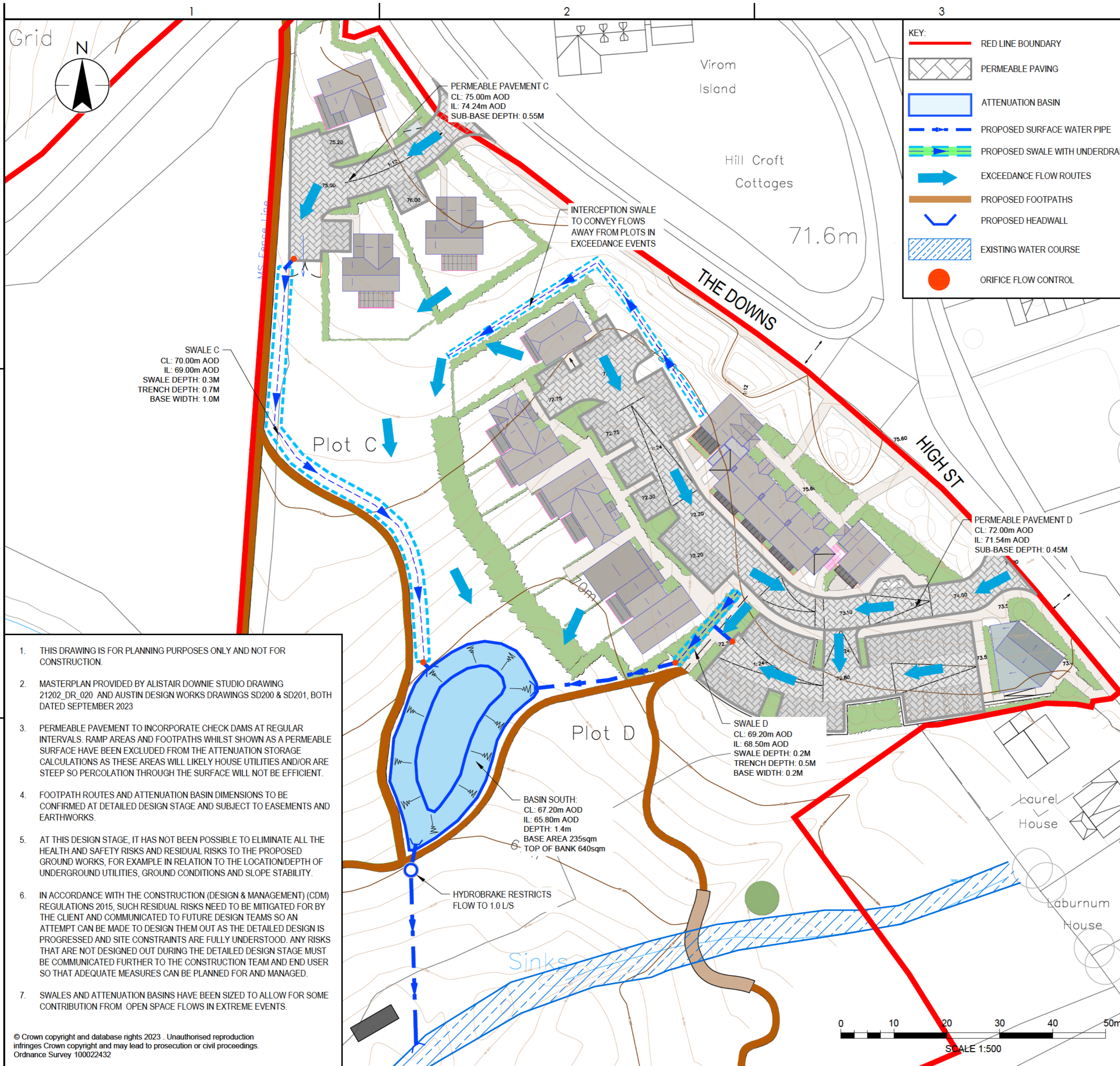
Client/Project
MONTARE

LAND AT STEBBING, DUNMOW, ESSEX

Title
SURFACE WATER DRAINAGE STRATEGY - PLOTS C & D

Project No. 332511125 A2 Scale 1:500


Revision P01 Drawing No. 48172/4002/002



- THIS DRAWING IS FOR PLANNING PURPOSES ONLY AND NOT FOR CONSTRUCTION.
- MASTERPLAN PROVIDED BY ALISTAIR DOWNIE STUDIO DRAWING 21202_DR_020 AND AUSTIN DESIGN WORKS DRAWINGS SD200 & SD201, BOTH DATED SEPTEMBER 2023
- PERMEABLE PAVEMENT TO INCORPORATE CHECK DAMS AT REGULAR INTERVALS. RAMP AREAS AND FOOTPATHS WHILST SHOWN AS A PERMEABLE SURFACE HAVE BEEN EXCLUDED FROM THE ATTENUATION STORAGE CALCULATIONS AS THESE AREAS WILL LIKELY HOUSE UTILITIES AND/OR ARE STEEP SO PERCOLATION THROUGH THE SURFACE WILL NOT BE EFFICIENT.
- FOOTPATH ROUTES AND ATTENUATION BASIN DIMENSIONS TO BE CONFIRMED AT DETAILED DESIGN STAGE AND SUBJECT TO EASEMENTS AND EARTHWORKS.
- AT THIS DESIGN STAGE, IT HAS NOT BEEN POSSIBLE TO ELIMINATE ALL THE HEALTH AND SAFETY RISKS AND RESIDUAL RISKS TO THE PROPOSED GROUND WORKS, FOR EXAMPLE IN RELATION TO THE LOCATION/DEPTH OF UNDERGROUND UTILITIES, GROUND CONDITIONS AND SLOPE STABILITY.
- IN ACCORDANCE WITH THE CONSTRUCTION (DESIGN & MANAGEMENT) (CDM) REGULATIONS 2015, SUCH RESIDUAL RISKS NEED TO BE MITIGATED FOR BY THE CLIENT AND COMMUNICATED TO FUTURE DESIGN TEAMS SO AN ATTEMPT CAN BE MADE TO DESIGN THEM OUT AS THE DETAILED DESIGN IS PROGRESSED AND SITE CONSTRAINTS ARE FULLY UNDERSTOOD. ANY RISKS THAT ARE NOT DESIGNED OUT DURING THE DETAILED DESIGN STAGE MUST BE COMMUNICATED FURTHER TO THE CONSTRUCTION TEAM AND END USER SO THAT ADEQUATE MEASURES CAN BE PLANNED FOR AND MANAGED.
- SWALES AND ATTENUATION BASINS HAVE BEEN SIZED TO ALLOW FOR SOME CONTRIBUTION FROM OPEN SPACE FLOWS IN EXTREME EVENTS.

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Plotted: By: Onwell, Evans
 ORIGINAL SHEET - 60A2 - \\cbrh-vh-001\cbrh\projects\332511125 - land at to stebbing, dunmow\cadd\dwg\332511125_203_001

Stantec UK Ltd		Page 1
Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Permeable Pavement Plot A	
Date 25/09/2023 10:22 File 332511125_ Stebbing Flo...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	


Cascade Rainfall Details for 230925 Permeable Pavement Plot A 10yr.SRCX

Rainfall Model	FEH
Return Period (years)	10
FEH Rainfall Version	2013
Site Location	GB 565839 224532 TL 65839 24532
Data Type	Point
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	1.000
Cv (Winter)	1.000
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.188

Time (mins)		Area
From:	To:	(ha)
0	4	0.188

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Permeable Pavement Plot A	
Date 25/09/2023 10:22 File 332511125_ Stebbing Flo...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	

Cascade Model Details for 230925 Permeable Pavement Plot A 10yr.SRCX


Storage is Online Cover Level (m) 69.500

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	70.0
Max Percolation (l/s)	194.4	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	68.800	Cap Volume Depth (m)	0.490

Orifice Outflow Control

Diameter (m) 0.080 Discharge Coefficient 0.600 Invert Level (m) 68.800

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Swale A	
Date 25/09/2023 10:23 File 332511125_ Stebbing Flo...	Designed by eedney Checked by	
Innovyze	Source Control 2020.1	


Cascade Rainfall Details for 230925 Swale A 10yr.SRCX

Rainfall Model	FEH
Return Period (years)	10
FEH Rainfall Version	2013
Site Location	GB 565839 224532 TL 65839 24532
Data Type	Point
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	1.000
Cv (Winter)	1.000
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.138

Time (mins)	Area
From:	To: (ha)
0	4 0.138

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Swale A	
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Innovyze	Source Control 2020.1	

Cascade Model Details for 230925 Swale A 10yr.SRCX


Storage is Online Cover Level (m) 67.800

Dry Swale Structure

Infiltration Coefficient Base (m/hr)	0.00000	Trench Length (m)	71.0
Infiltration Coefficient Side (m/hr)	0.00000	Trench Infiltration Side (m/hr)	0.00000
Safety Factor	2.0	Trench Porosity	0.30
Porosity	1.00	Side Slope (1:X)	3.0
Invert Level (m)	66.500	Slope (1:X)	100.0
Trench Height (m)	0.900	Cap Volume Depth (m)	1.150
Trench Width (m)	0.8	Cap Infiltration Depth (m)	0.000

Orifice Outflow Control

Diameter (m) 0.150 Discharge Coefficient 0.600 Invert Level (m) 66.500

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Permeable Pavement Plot B	
Date 25/09/2023 10:24 File 332511125_ Stebbing Flo...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	


Cascade Rainfall Details for 230925 Permeable Pavement Plot B 10yr.SRCX

Rainfall Model	FEH
Return Period (years)	10
FEH Rainfall Version	2013
Site Location	GB 565839 224532 TL 65839 24532
Data Type	Point
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	1.000
Cv (Winter)	1.000
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.156

Time (mins)		Area
From:	To:	(ha)
0	4	0.156

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Permeable Pavement Plot B	
Date 25/09/2023 10:24 File 332511125_ Stebbing Flo...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	

Cascade Model Details for 230925 Permeable Pavement Plot B 10yr.SRCX


Storage is Online Cover Level (m) 72.100

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	54.0
Max Percolation (l/s)	150.0	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	71.370	Cap Volume Depth (m)	0.520

Orifice Outflow Control

Diameter (m) 0.060 Discharge Coefficient 0.600 Invert Level (m) 71.370

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Swale B	
Date 25/09/2023 10:24 File 332511125_ Stebbing Flo...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	


Cascade Rainfall Details for 230925 Swale B 10yr.SRCX

Rainfall Model	FEH
Return Period (years)	10
FEH Rainfall Version	2013
Site Location	GB 565839 224532 TL 65839 24532
Data Type	Point
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	1.000
Cv (Winter)	1.000
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.020

Time (mins)		Area
From:	To:	(ha)
0	4	0.020

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Swale B	
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Innovyze	Source Control 2020.1	

Cascade Model Details for 230925 Swale B 10yr.SRCX


Storage is Online Cover Level (m) 70.000

Dry Swale Structure

Infiltration Coefficient Base (m/hr)	0.00000	Trench Length (m)	67.0
Infiltration Coefficient Side (m/hr)	0.00000	Trench Infiltration Side (m/hr)	0.00000
Safety Factor	2.0	Trench Porosity	0.30
Porosity	1.00	Side Slope (1:X)	3.0
Invert Level (m)	68.800	Slope (1:X)	120.0
Trench Height (m)	0.900	Cap Volume Depth (m)	1.050
Trench Width (m)	1.0	Cap Infiltration Depth (m)	0.000

Orifice Outflow Control

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 68.800

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Land at Stebbing Basin North	
Date 25/09/2023 10:25 File 332511125_ Stebbing Flo...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	

Cascade Rainfall Details for 230925 Basin North 10yr.SRCX


Rainfall Model	FEH
Return Period (years)	10
FEH Rainfall Version	2013
Site Location	GB 565839 224532 TL 65839 24532
Data Type	Point
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	1.000
Cv (Winter)	1.000
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.059

Time (mins) Area
From: To: (ha)

0 4 0.059

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Land at Stebbing Basin North	
Date 25/09/2023 10:25 File 332511125_ Stebbing Flo...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	

Cascade Model Details for 230925 Basin North 10yr.SRCX

Storage is Online Cover Level (m) 66.200

Tank or Pond Structure

Invert Level (m) 64.800

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	350.0	1.400	820.0


Hydro-Brake® Optimum Outflow Control

Unit Reference	MD-SHE-0046-1000-1100-1000
Design Head (m)	1.100
Design Flow (l/s)	1.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	46
Invert Level (m)	64.800
Minimum Outlet Pipe Diameter (mm)	75
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.100	1.0
Flush-Flo™	0.200	0.8
Kick-Flo®	0.408	0.6
Mean Flow over Head Range	-	0.8

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	0.7	1.200	1.0	3.000	1.6	7.000	2.3
0.200	0.8	1.400	1.1	3.500	1.7	7.500	2.4
0.300	0.8	1.600	1.2	4.000	1.8	8.000	2.5
0.400	0.7	1.800	1.2	4.500	1.9	8.500	2.5
0.500	0.7	2.000	1.3	5.000	2.0	9.000	2.6
0.600	0.8	2.200	1.4	5.500	2.1	9.500	2.7
0.800	0.9	2.400	1.4	6.000	2.2		
1.000	1.0	2.600	1.5	6.500	2.2		

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Permeable Pavement Plot A	
Date 25/09/2023 10:31 File 332511125_ Stebbing Flo...	Designed by eedney Checked by	
Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230922 Permeable Pavement Plot
A 100yr45cc.SRCX


Upstream Structures Outflow To Overflow To

(None) 230922_Swale A_100yr45cc.SRCX (None)

Half Drain Time : 83 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ (l/s)	Max Outflow Volume (m³)	Status
15 min Summer	69.246	0.446	0.0	8.5	8.5	56.9	O K
30 min Summer	69.316	0.516	0.0	9.2	9.2	71.4	O K
60 min Summer	69.368	0.568	0.0	9.7	9.7	80.7	O K
120 min Summer	69.409	0.609	0.0	10.1	10.1	87.0	O K
180 min Summer	69.408	0.608	0.0	10.1	10.1	86.8	O K
240 min Summer	69.389	0.589	0.0	9.9	9.9	84.2	O K
360 min Summer	69.342	0.542	0.0	9.5	9.5	76.3	O K
480 min Summer	69.299	0.499	0.0	9.1	9.1	68.1	O K
600 min Summer	69.263	0.463	0.0	8.7	8.7	60.5	O K
720 min Summer	69.231	0.431	0.0	8.4	8.4	53.7	O K
960 min Summer	69.177	0.377	0.0	7.8	7.8	42.3	O K
1440 min Summer	69.099	0.299	0.0	6.8	6.8	26.7	O K
2160 min Summer	69.020	0.220	0.0	5.7	5.7	14.6	O K
2880 min Summer	68.971	0.171	0.0	4.8	4.8	8.8	O K
4320 min Summer	68.919	0.119	0.0	3.8	3.8	4.3	O K
5760 min Summer	68.901	0.101	0.0	3.0	3.0	3.0	O K
7200 min Summer	68.890	0.090	0.0	2.6	2.6	2.4	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	140.814	0.0	62.7	18
30 min Summer	91.968	0.0	82.9	32
60 min Summer	57.414	0.0	104.4	60
120 min Summer	36.102	0.0	132.1	92
180 min Summer	26.993	0.0	148.5	126
240 min Summer	21.742	0.0	159.7	160
360 min Summer	15.776	0.0	173.9	230
480 min Summer	12.433	0.0	182.8	296
600 min Summer	10.289	0.0	189.1	362
720 min Summer	8.792	0.0	193.8	426
960 min Summer	6.832	0.0	200.6	550
1440 min Summer	4.769	0.0	209.6	792
2160 min Summer	3.340	0.0	219.4	1144
2880 min Summer	2.609	0.0	227.7	1496
4320 min Summer	1.874	0.0	243.9	2204
5760 min Summer	1.502	0.0	259.2	2936
7200 min Summer	1.275	0.0	273.6	3656

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Permeable Pavement Plot A	
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Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230922 Permeable Pavement Plot
A 100yr45cc.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (1/s)	Max Control (1/s)	Max Σ Outflow (1/s)	Max Volume (m ³)	Status
8640 min Summer	68.883	0.083	0.0	2.3	2.3	2.1	O K
10080 min Summer	68.878	0.078	0.0	2.1	2.1	1.8	O K
15 min Winter	69.246	0.446	0.0	8.5	8.5	57.0	O K
30 min Winter	69.317	0.517	0.0	9.2	9.2	71.6	O K
60 min Winter	69.371	0.571	0.0	9.7	9.7	81.2	O K
120 min Winter	69.407	0.607	0.0	10.1	10.1	86.7	O K
180 min Winter	69.398	0.598	0.0	10.0	10.0	85.4	O K
240 min Winter	69.371	0.571	0.0	9.7	9.7	81.3	O K
360 min Winter	69.311	0.511	0.0	9.2	9.2	70.5	O K
480 min Winter	69.259	0.459	0.0	8.6	8.6	59.7	O K
600 min Winter	69.214	0.414	0.0	8.2	8.2	50.1	O K
720 min Winter	69.174	0.374	0.0	7.7	7.7	41.9	O K
960 min Winter	69.111	0.311	0.0	7.0	7.0	29.0	O K
1440 min Winter	69.019	0.219	0.0	5.7	5.7	14.4	O K
2160 min Winter	68.942	0.142	0.0	4.3	4.3	6.1	O K
2880 min Winter	68.909	0.109	0.0	3.4	3.4	3.6	O K
4320 min Winter	68.887	0.087	0.0	2.5	2.5	2.3	O K
5760 min Winter	68.876	0.076	0.0	2.0	2.0	1.7	O K
7200 min Winter	68.869	0.069	0.0	1.7	1.7	1.4	O K
8640 min Winter	68.864	0.064	0.0	1.5	1.5	1.2	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
8640 min Summer	1.123	0.0	287.9	4336
10080 min Summer	1.015	0.0	302.4	5072
15 min Winter	140.814	0.0	62.7	17
30 min Winter	91.968	0.0	82.9	31
60 min Winter	57.414	0.0	104.4	58
120 min Winter	36.102	0.0	132.1	96
180 min Winter	26.993	0.0	148.5	134
240 min Winter	21.742	0.0	159.7	172
360 min Winter	15.776	0.0	173.9	244
480 min Winter	12.433	0.0	182.8	314
600 min Winter	10.289	0.0	189.1	380
720 min Winter	8.792	0.0	193.8	444
960 min Winter	6.832	0.0	200.6	566
1440 min Winter	4.769	0.0	209.6	794
2160 min Winter	3.340	0.0	219.4	1128
2880 min Winter	2.609	0.0	227.7	1460
4320 min Winter	1.874	0.0	243.9	2180
5760 min Winter	1.502	0.0	259.2	2888
7200 min Winter	1.275	0.0	273.6	3568
8640 min Winter	1.123	0.0	287.9	4272

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Permeable Pavement Plot A	
Date 25/09/2023 10:31 File 332511125_ Stebbing Flo...	Designed by eedney Checked by	
Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230922 Permeable Pavement Plot
A 100yr45cc.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (1/s)	Max Control (1/s)	Max Σ (1/s)	Max Outflow (1/s)	Max Volume (m ³)	Status
10080 min Winter	68.859	0.059	0.0	1.3	1.3	1.0		O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
10080 min Winter	1.015	0.0	302.5	5040

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Swale A	
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Innovyze	Source Control 2020.1	


Cascade Summary of Results for 230922 Swale A 100yr45cc.SRCX

Upstream Structures	Outflow To	Overflow To
230922_Permeable Pavement Plot A_100yr45cc.SRCX	230922_Basin North_100yr45cc.SRCX	(None)

Half Drain Time : 5 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	67.780	1.280	0.0	51.5	51.5	23.2	O K
30 min Summer	67.785	1.285	0.0	51.7	51.7	23.5	O K
60 min Summer	67.693	1.193	0.0	49.7	49.7	19.0	O K
120 min Summer	67.540	1.040	0.0	46.1	46.1	12.5	O K
180 min Summer	67.345	0.845	0.0	41.2	41.2	8.4	O K
240 min Summer	67.192	0.692	0.0	36.9	36.9	5.7	O K
360 min Summer	67.000	0.500	0.0	30.6	30.6	3.0	O K
480 min Summer	66.886	0.386	0.0	26.2	26.2	1.8	O K
600 min Summer	66.816	0.316	0.0	23.0	23.0	1.2	O K
720 min Summer	66.768	0.268	0.0	20.6	20.6	0.9	O K
960 min Summer	66.713	0.213	0.0	17.4	17.4	0.5	O K
1440 min Summer	66.680	0.180	0.0	13.6	13.6	0.4	O K
2160 min Summer	66.652	0.152	0.0	10.6	10.6	0.3	O K
2880 min Summer	66.636	0.136	0.0	8.8	8.8	0.2	O K
4320 min Summer	66.614	0.114	0.0	6.6	6.6	0.2	O K
5760 min Summer	66.598	0.098	0.0	5.3	5.3	0.1	O K
7200 min Summer	66.588	0.088	0.0	4.6	4.6	0.1	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	140.814	0.0	111.2	13
30 min Summer	91.968	0.0	146.4	21
60 min Summer	57.414	0.0	183.6	38
120 min Summer	36.102	0.0	231.7	68
180 min Summer	26.993	0.0	260.2	98
240 min Summer	21.742	0.0	279.7	128
360 min Summer	15.776	0.0	304.5	186
480 min Summer	12.433	0.0	320.1	246
600 min Summer	10.289	0.0	331.0	306
720 min Summer	8.792	0.0	339.4	366
960 min Summer	6.832	0.0	351.5	488
1440 min Summer	4.769	0.0	367.6	734
2160 min Summer	3.340	0.0	385.3	1096
2880 min Summer	2.609	0.0	400.5	1464
4320 min Summer	1.874	0.0	430.1	2196
5760 min Summer	1.502	0.0	458.1	2872
7200 min Summer	1.275	0.0	484.6	3640

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Swale A	
Date 25/09/2023 10:31 File 332511125_ Stebbing Flo...	Designed by eedney Checked by	
Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230922 Swale A 100yr45cc.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (1/s)	Max Control (1/s)	Max Σ Outflow (1/s)	Max Volume (m³)	Status
8640 min Summer	66.584	0.084	0.0	4.1	4.1	0.1	O K
10080 min Summer	66.579	0.079	0.0	3.6	3.6	0.1	O K
15 min Winter	67.763	1.263	0.0	51.2	51.2	22.5	O K
30 min Winter	67.734	1.234	0.0	50.6	50.6	21.0	O K
60 min Winter	67.590	1.090	0.0	47.3	47.3	14.2	O K
120 min Winter	67.282	0.782	0.0	39.5	39.5	7.3	O K
180 min Winter	67.078	0.578	0.0	33.3	33.3	4.0	O K
240 min Winter	66.953	0.453	0.0	28.9	28.9	2.5	O K
360 min Winter	66.818	0.318	0.0	23.1	23.1	1.2	O K
480 min Winter	66.750	0.250	0.0	19.7	19.7	0.8	O K
600 min Winter	66.712	0.212	0.0	17.3	17.3	0.5	O K
720 min Winter	66.697	0.197	0.0	15.6	15.6	0.5	O K
960 min Winter	66.675	0.175	0.0	13.1	13.1	0.4	O K
1440 min Winter	66.648	0.148	0.0	10.1	10.1	0.3	O K
2160 min Winter	66.624	0.124	0.0	7.5	7.5	0.2	O K
2880 min Winter	66.606	0.106	0.0	6.0	6.0	0.1	O K
4320 min Winter	66.586	0.086	0.0	4.3	4.3	0.1	O K
5760 min Winter	66.578	0.078	0.0	3.5	3.5	0.1	O K
7200 min Winter	66.573	0.073	0.0	3.0	3.0	0.1	O K
8640 min Winter	66.569	0.069	0.0	2.6	2.6	0.1	O K
10080 min Winter	66.565	0.065	0.0	2.3	2.3	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
8640 min Summer	1.123	0.0	511.0	4336
10080 min Summer	1.015	0.0	537.8	4992
15 min Winter	140.814	0.0	111.2	13
30 min Winter	91.968	0.0	146.4	22
60 min Winter	57.414	0.0	183.6	38
120 min Winter	36.102	0.0	231.7	68
180 min Winter	26.993	0.0	260.2	98
240 min Winter	21.742	0.0	279.7	128
360 min Winter	15.776	0.0	304.5	188
480 min Winter	12.433	0.0	320.1	246
600 min Winter	10.289	0.0	331.0	308
720 min Winter	8.792	0.0	339.4	366
960 min Winter	6.832	0.0	351.5	490
1440 min Winter	4.769	0.0	367.6	748
2160 min Winter	3.340	0.0	385.3	1100
2880 min Winter	2.609	0.0	400.5	1460
4320 min Winter	1.874	0.0	430.1	2196
5760 min Winter	1.502	0.0	458.1	2936
7200 min Winter	1.275	0.0	484.6	3600
8640 min Winter	1.123	0.0	511.0	4344
10080 min Winter	1.015	0.0	537.8	5008

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Permeable Pavement Plot B	
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Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230922 Permeable Pavement Plot
B 100yr45cc.SRCX


Upstream Outflow To Overflow To
Structures

(None) 230922_Swale B_100yr45cc.SRCX (None)

Half Drain Time : 139 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ (l/s)	Max Outflow Volume (m³)	Status
15 min Summer	71.807	0.437	0.0	4.8	4.8	48.9	O K
30 min Summer	71.890	0.520	0.0	5.3	5.3	62.3	O K
60 min Summer	71.966	0.596	0.0	5.7	5.7	73.0	O K
120 min Summer	72.053	0.683	0.0	6.1	6.1	81.0	O K
180 min Summer	72.079	0.709	0.0	6.2	6.2	82.5	O K
240 min Summer	72.067	0.697	0.0	6.1	6.1	81.8	O K
360 min Summer	72.010	0.640	0.0	5.9	5.9	77.6	O K
480 min Summer	71.958	0.588	0.0	5.6	5.6	72.0	O K
600 min Summer	71.917	0.547	0.0	5.4	5.4	66.5	O K
720 min Summer	71.883	0.513	0.0	5.2	5.2	61.3	O K
960 min Summer	71.827	0.457	0.0	4.9	4.9	52.2	O K
1440 min Summer	71.742	0.372	0.0	4.4	4.4	38.3	O K
2160 min Summer	71.659	0.289	0.0	3.8	3.8	24.9	O K
2880 min Summer	71.607	0.237	0.0	3.4	3.4	16.8	O K
4320 min Summer	71.541	0.171	0.0	2.8	2.8	8.8	O K
5760 min Summer	71.503	0.133	0.0	2.4	2.4	5.3	O K
7200 min Summer	71.479	0.109	0.0	2.1	2.1	3.6	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	140.814	0.0	52.2	18
30 min Summer	91.968	0.0	69.0	32
60 min Summer	57.414	0.0	86.8	62
120 min Summer	36.102	0.0	109.8	106
180 min Summer	26.993	0.0	123.4	138
240 min Summer	21.742	0.0	132.7	170
360 min Summer	15.776	0.0	144.6	240
480 min Summer	12.433	0.0	151.9	310
600 min Summer	10.289	0.0	157.1	378
720 min Summer	8.792	0.0	161.1	444
960 min Summer	6.832	0.0	166.8	576
1440 min Summer	4.769	0.0	174.2	824
2160 min Summer	3.340	0.0	182.4	1188
2880 min Summer	2.609	0.0	189.4	1532
4320 min Summer	1.874	0.0	202.9	2248
5760 min Summer	1.502	0.0	215.7	2944
7200 min Summer	1.275	0.0	227.8	3672

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Permeable Pavement Plot B	
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Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230922 Permeable Pavement Plot
B 100yr45cc.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (1/s)	Max Control (1/s)	Max Outflow (1/s)	Max Volume (m ³)	Status
8640 min Summer	71.463	0.093	0.0	1.9	1.9	2.6	O K
10080 min Summer	71.453	0.083	0.0	1.7	1.7	2.1	O K
15 min Winter	71.807	0.437	0.0	4.8	4.8	49.0	O K
30 min Winter	71.891	0.521	0.0	5.3	5.3	62.5	O K
60 min Winter	71.968	0.598	0.0	5.7	5.7	73.3	O K
120 min Winter	72.062	0.692	0.0	6.1	6.1	81.6	O K
180 min Winter	72.078	0.708	0.0	6.2	6.2	82.4	O K
240 min Winter	72.057	0.687	0.0	6.1	6.1	81.2	O K
360 min Winter	71.987	0.617	0.0	5.8	5.8	75.3	O K
480 min Winter	71.927	0.557	0.0	5.5	5.5	68.0	O K
600 min Winter	71.881	0.511	0.0	5.2	5.2	60.9	O K
720 min Winter	71.841	0.471	0.0	5.0	5.0	54.4	O K
960 min Winter	71.771	0.401	0.0	4.6	4.6	43.2	O K
1440 min Winter	71.672	0.302	0.0	3.9	3.9	27.1	O K
2160 min Winter	71.584	0.214	0.0	3.2	3.2	13.7	O K
2880 min Winter	71.528	0.158	0.0	2.7	2.7	7.5	O K
4320 min Winter	71.472	0.102	0.0	2.0	2.0	3.1	O K
5760 min Winter	71.451	0.081	0.0	1.6	1.6	1.9	O K
7200 min Winter	71.442	0.072	0.0	1.4	1.4	1.6	O K
8640 min Winter	71.436	0.066	0.0	1.2	1.2	1.3	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
8640 min Summer	1.123	0.0	239.8	4400
10080 min Summer	1.015	0.0	252.0	5136
15 min Winter	140.814	0.0	52.2	18
30 min Winter	91.968	0.0	69.0	32
60 min Winter	57.414	0.0	86.8	60
120 min Winter	36.102	0.0	109.8	114
180 min Winter	26.993	0.0	123.4	142
240 min Winter	21.742	0.0	132.7	180
360 min Winter	15.776	0.0	144.6	258
480 min Winter	12.433	0.0	151.9	332
600 min Winter	10.289	0.0	157.1	404
720 min Winter	8.792	0.0	161.1	472
960 min Winter	6.832	0.0	166.8	606
1440 min Winter	4.769	0.0	174.2	852
2160 min Winter	3.340	0.0	182.4	1208
2880 min Winter	2.609	0.0	189.4	1532
4320 min Winter	1.874	0.0	202.9	2208
5760 min Winter	1.502	0.0	215.7	2912
7200 min Winter	1.275	0.0	227.8	3672
8640 min Winter	1.123	0.0	239.8	4320

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Permeable Pavement Plot B	
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Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230922 Permeable Pavement Plot
B 100yr45cc.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (1/s)	Max Control (1/s)	Max Σ (1/s)	Max Outflow (1/s)	Max Volume (m ³)	Status
10080 min Winter	71.432	0.062	0.0	1.1	1.1	1.1	1.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
10080 min Winter	1.015	0.0	252.1	5144

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Swale B	
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Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230922 Swale B 100yr45cc.SRCX

Upstream Structures	Outflow To	Overflow To
230922_Permeable Pavement Plot B_100yr45cc.SRCX	230922_Basin North_100yr45cc.SRCX	(None)

Half Drain Time : 37 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	69.489	0.689	0.0	4.3	4.3	8.2	O K
30 min Summer	69.626	0.826	0.0	4.7	4.7	11.0	O K
60 min Summer	69.761	0.961	0.0	5.0	5.0	13.9	O K
120 min Summer	69.884	1.084	0.0	5.4	5.4	18.3	O K
180 min Summer	69.942	1.142	0.0	5.5	5.5	20.5	O K
240 min Summer	69.965	1.165	0.0	5.6	5.6	21.4	O K
360 min Summer	69.947	1.147	0.0	5.5	5.5	20.7	O K
480 min Summer	69.906	1.106	0.0	5.4	5.4	19.1	O K
600 min Summer	69.871	1.071	0.0	5.3	5.3	17.7	O K
720 min Summer	69.840	1.040	0.0	5.3	5.3	16.4	O K
960 min Summer	69.777	0.977	0.0	5.1	5.1	14.3	O K
1440 min Summer	69.633	0.833	0.0	4.7	4.7	11.1	O K
2160 min Summer	69.461	0.661	0.0	4.2	4.2	7.7	O K
2880 min Summer	69.344	0.544	0.0	3.8	3.8	5.3	O K
4320 min Summer	69.188	0.388	0.0	3.1	3.1	2.7	O K
5760 min Summer	69.092	0.292	0.0	2.7	2.7	1.5	O K
7200 min Summer	69.032	0.232	0.0	2.4	2.4	1.0	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	140.814	0.0	59.2	70
30 min Summer	91.968	0.0	78.2	90
60 min Summer	57.414	0.0	98.3	116
120 min Summer	36.102	0.0	124.2	166
180 min Summer	26.993	0.0	139.6	208
240 min Summer	21.742	0.0	150.1	250
360 min Summer	15.776	0.0	163.5	354
480 min Summer	12.433	0.0	171.8	408
600 min Summer	10.289	0.0	177.7	464
720 min Summer	8.792	0.0	182.2	518
960 min Summer	6.832	0.0	188.6	634
1440 min Summer	4.769	0.0	197.1	880
2160 min Summer	3.340	0.0	206.5	1236
2880 min Summer	2.609	0.0	214.5	1588
4320 min Summer	1.874	0.0	229.9	2272
5760 min Summer	1.502	0.0	244.6	2960
7200 min Summer	1.275	0.0	258.4	3672



Cascade Summary of Results for 230922 Swale B 100yr45cc.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (1/s)	Max Control (1/s)	Max Σ Outflow (1/s)	Max Volume (m³)	Status
8640 min Summer	68.990	0.190	0.0	2.1	2.1	0.7	O K
10080 min Summer	68.961	0.161	0.0	1.9	1.9	0.5	O K
15 min Winter	69.490	0.690	0.0	4.3	4.3	8.3	O K
30 min Winter	69.626	0.826	0.0	4.7	4.7	11.0	O K
60 min Winter	69.761	0.961	0.0	5.0	5.0	13.9	O K
120 min Winter	69.885	1.085	0.0	5.4	5.4	18.3	O K
180 min Winter	69.942	1.142	0.0	5.5	5.5	20.5	O K
240 min Winter	69.962	1.162	0.0	5.6	5.6	21.3	O K
360 min Winter	69.945	1.145	0.0	5.5	5.5	20.6	O K
480 min Winter	69.896	1.096	0.0	5.4	5.4	18.7	O K
600 min Winter	69.854	1.054	0.0	5.3	5.3	17.0	O K
720 min Winter	69.811	1.011	0.0	5.2	5.2	15.4	O K
960 min Winter	69.709	0.909	0.0	4.9	4.9	12.7	O K
1440 min Winter	69.503	0.703	0.0	4.3	4.3	8.5	O K
2160 min Winter	69.298	0.498	0.0	3.6	3.6	4.5	O K
2880 min Winter	69.161	0.361	0.0	3.0	3.0	2.3	O K
4320 min Winter	69.015	0.215	0.0	2.3	2.3	0.8	O K
5760 min Winter	68.949	0.149	0.0	1.8	1.8	0.4	O K
7200 min Winter	68.914	0.114	0.0	1.6	1.6	0.2	O K
8640 min Winter	68.894	0.094	0.0	1.4	1.4	0.2	O K
10080 min Winter	68.881	0.081	0.0	1.2	1.2	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
8640 min Summer	1.123	0.0	272.1	4400
10080 min Summer	1.015	0.0	286.1	5064
15 min Winter	140.814	0.0	59.2	70
30 min Winter	91.968	0.0	78.2	89
60 min Winter	57.414	0.0	98.3	116
120 min Winter	36.102	0.0	124.2	166
180 min Winter	26.993	0.0	139.6	208
240 min Winter	21.742	0.0	150.1	250
360 min Winter	15.776	0.0	163.5	350
480 min Winter	12.433	0.0	171.8	416
600 min Winter	10.289	0.0	177.7	470
720 min Winter	8.792	0.0	182.2	530
960 min Winter	6.832	0.0	188.6	654
1440 min Winter	4.769	0.0	197.1	904
2160 min Winter	3.340	0.0	206.5	1240
2880 min Winter	2.609	0.0	214.5	1564
4320 min Winter	1.874	0.0	229.9	2244
5760 min Winter	1.502	0.0	244.6	2920
7200 min Winter	1.275	0.0	258.4	3600
8640 min Winter	1.123	0.0	272.2	4336
10080 min Winter	1.015	0.0	286.2	5064

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Land at Stebbing Basin North	
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Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230922 Basin North 100yr45cc.SRCX

Upstream Structures	Outflow To	Overflow To
230922_Swale A_100yr45cc.SRCX	(None)	(None)
230922_Permeable Pavement Plot A_100yr45cc.SRCX		
230922_Swale B_100yr45cc.SRCX		
230922_Permeable Pavement Plot B_100yr45cc.SRCX		


Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
15 min Summer	65.237	0.437	0.8	179.8	O K
30 min Summer	65.354	0.554	0.8	237.7	O K
60 min Summer	65.469	0.669	0.8	298.6	O K
120 min Summer	65.605	0.805	0.9	376.7	O K
180 min Summer	65.681	0.881	0.9	422.7	O K
240 min Summer	65.730	0.930	0.9	453.8	O K
360 min Summer	65.790	0.990	1.0	492.8	O K
480 min Summer	65.825	1.025	1.0	516.4	O K
600 min Summer	65.849	1.049	1.0	532.5	O K
720 min Summer	65.866	1.066	1.0	544.1	O K
960 min Summer	65.887	1.087	1.0	559.1	O K
1440 min Summer	65.897	1.097	1.0	565.5	O K
2160 min Summer	65.892	1.092	1.0	562.3	O K
2880 min Summer	65.882	1.082	1.0	555.0	O K
4320 min Summer	65.860	1.060	1.0	539.9	O K
5760 min Summer	65.847	1.047	1.0	531.4	O K
7200 min Summer	65.841	1.041	1.0	526.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
15 min Summer	140.814	0.0	59.4	267
30 min Summer	91.968	0.0	61.0	328
60 min Summer	57.414	0.0	127.5	390
120 min Summer	36.102	0.0	139.5	474
180 min Summer	26.993	0.0	145.4	530
240 min Summer	21.742	0.0	148.8	576
360 min Summer	15.776	0.0	152.3	654
480 min Summer	12.433	0.0	153.8	724
600 min Summer	10.289	0.0	154.4	792
720 min Summer	8.792	0.0	154.3	858
960 min Summer	6.832	0.0	153.3	998
1440 min Summer	4.769	0.0	149.6	1448
2160 min Summer	3.340	0.0	300.3	2164
2880 min Summer	2.609	0.0	295.5	2884
4320 min Summer	1.874	0.0	282.6	4048
5760 min Summer	1.502	0.0	561.3	4728
7200 min Summer	1.275	0.0	556.3	5480

Cascade Summary of Results for 230922 Basin North 100yr45cc.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
8640 min Summer	65.839	1.039	1.0	525.8	O K
10080 min Summer	65.842	1.042	1.0	527.9	O K
15 min Winter	65.237	0.437	0.8	179.8	O K
30 min Winter	65.354	0.554	0.8	237.7	O K
60 min Winter	65.469	0.669	0.8	298.5	O K
120 min Winter	65.605	0.805	0.9	376.7	O K
180 min Winter	65.681	0.881	0.9	422.8	O K
240 min Winter	65.730	0.930	0.9	453.8	O K
360 min Winter	65.790	0.990	1.0	493.0	O K
480 min Winter	65.826	1.026	1.0	516.7	O K
600 min Winter	65.850	1.050	1.0	532.9	O K
720 min Winter	65.867	1.067	1.0	544.6	O K
960 min Winter	65.889	1.089	1.0	559.9	O K
1440 min Winter	65.900	1.100	1.0	567.5	O K
2160 min Winter	65.897	1.097	1.0	565.4	O K
2880 min Winter	65.888	1.088	1.0	559.5	O K
4320 min Winter	65.871	1.071	1.0	547.5	O K
5760 min Winter	65.853	1.053	1.0	535.3	O K
7200 min Winter	65.844	1.044	1.0	529.1	O K
8640 min Winter	65.839	1.039	1.0	525.9	O K
10080 min Winter	65.838	1.038	1.0	525.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
8640 min Summer	1.123	0.0	546.8	6256
10080 min Summer	1.015	0.0	533.3	7080
15 min Winter	140.814	0.0	59.4	267
30 min Winter	91.968	0.0	61.0	328
60 min Winter	57.414	0.0	127.5	390
120 min Winter	36.102	0.0	139.5	474
180 min Winter	26.993	0.0	145.3	530
240 min Winter	21.742	0.0	148.7	576
360 min Winter	15.776	0.0	152.2	654
480 min Winter	12.433	0.0	153.6	722
600 min Winter	10.289	0.0	154.1	790
720 min Winter	8.792	0.0	154.0	856
960 min Winter	6.832	0.0	152.9	994
1440 min Winter	4.769	0.0	148.9	1428
2160 min Winter	3.340	0.0	299.3	2120
2880 min Winter	2.609	0.0	294.0	2796
4320 min Winter	1.874	0.0	280.4	4108
5760 min Winter	1.502	0.0	559.3	5240
7200 min Winter	1.275	0.0	554.2	5640
8640 min Winter	1.123	0.0	545.0	6584
10080 min Winter	1.015	0.0	531.9	7560


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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Land at Stebbing Basin North	
Date 25/09/2023 10:26 File 332511125_ Stebbing Flo...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230925 Basin North 10yr.SRCX

Upstream Structures	Outflow To	Overflow To
230925_Swale A_10yr.SRCX	(None)	(None)
230925_Permeable Pavement Plot A_10yr.SRCX		
230925_Swale B_10yr.SRCX		
230925_Permeable Pavement Plot B_10yr.SRCX		

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
15 min Summer	64.983	0.183	0.8	68.6	O K
30 min Summer	65.036	0.236	0.8	90.4	O K
60 min Summer	65.090	0.290	0.8	113.1	O K
120 min Summer	65.175	0.375	0.8	150.8	O K
180 min Summer	65.222	0.422	0.8	172.4	O K
240 min Summer	65.251	0.451	0.8	186.5	O K
360 min Summer	65.287	0.487	0.8	203.7	O K
480 min Summer	65.307	0.507	0.8	213.5	O K
600 min Summer	65.317	0.517	0.8	218.8	O K
720 min Summer	65.323	0.523	0.8	221.6	O K
960 min Summer	65.327	0.527	0.8	224.0	O K
1440 min Summer	65.325	0.525	0.8	222.8	O K
2160 min Summer	65.313	0.513	0.8	216.6	O K
2880 min Summer	65.301	0.501	0.8	210.7	O K
4320 min Summer	65.287	0.487	0.8	204.0	O K
5760 min Summer	65.279	0.479	0.8	200.2	O K
7200 min Summer	65.275	0.475	0.8	198.1	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
15 min Summer	57.931	0.0	60.0	137
30 min Summer	37.261	0.0	65.5	172
60 min Summer	22.931	0.0	114.1	212
120 min Summer	15.007	0.0	128.8	278
180 min Summer	11.355	0.0	125.0	326
240 min Summer	9.199	0.0	121.9	364
360 min Summer	6.716	0.0	118.3	436
480 min Summer	5.311	0.0	116.2	508
600 min Summer	4.409	0.0	114.6	612
720 min Summer	3.780	0.0	113.3	730
960 min Summer	2.959	0.0	111.1	966
1440 min Summer	2.093	0.0	107.7	1442
2160 min Summer	1.493	0.0	229.2	2144
2880 min Summer	1.185	0.0	220.1	2448
4320 min Summer	0.871	0.0	201.7	3216
5760 min Summer	0.710	0.0	359.1	4040
7200 min Summer	0.613	0.0	383.5	4896

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Land at Stebbing Basin North	
Date 25/09/2023 10:26 File 332511125_ Stebbing Flo...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230925 Basin North 10yr.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
8640 min Summer	65.273	0.473	0.8	197.1	O K
10080 min Summer	65.273	0.473	0.8	197.1	O K
15 min Winter	64.983	0.183	0.8	68.6	O K
30 min Winter	65.036	0.236	0.8	90.4	O K
60 min Winter	65.090	0.290	0.8	113.1	O K
120 min Winter	65.175	0.375	0.8	150.8	O K
180 min Winter	65.222	0.422	0.8	172.4	O K
240 min Winter	65.251	0.451	0.8	186.5	O K
360 min Winter	65.287	0.487	0.8	203.7	O K
480 min Winter	65.307	0.507	0.8	213.6	O K
600 min Winter	65.318	0.518	0.8	219.0	O K
720 min Winter	65.323	0.523	0.8	221.9	O K
960 min Winter	65.328	0.528	0.8	224.4	O K
1440 min Winter	65.326	0.526	0.8	223.4	O K
2160 min Winter	65.315	0.515	0.8	217.9	O K
2880 min Winter	65.301	0.501	0.8	210.9	O K
4320 min Winter	65.281	0.481	0.8	201.0	O K
5760 min Winter	65.266	0.466	0.8	193.6	O K
7200 min Winter	65.253	0.453	0.8	187.3	O K
8640 min Winter	65.242	0.442	0.8	181.9	O K
10080 min Winter	65.232	0.432	0.8	177.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
8640 min Summer	0.548	0.0	399.4	5720
10080 min Summer	0.501	0.0	384.8	6560
15 min Winter	57.931	0.0	60.0	137
30 min Winter	37.261	0.0	65.5	172
60 min Winter	22.931	0.0	114.2	212
120 min Winter	15.007	0.0	128.9	278
180 min Winter	11.355	0.0	125.1	324
240 min Winter	9.199	0.0	122.0	364
360 min Winter	6.716	0.0	118.4	434
480 min Winter	5.311	0.0	116.4	504
600 min Winter	4.409	0.0	114.8	604
720 min Winter	3.780	0.0	113.5	718
960 min Winter	2.959	0.0	111.3	950
1440 min Winter	2.093	0.0	108.0	1410
2160 min Winter	1.493	0.0	230.0	2072
2880 min Winter	1.185	0.0	221.4	2684
4320 min Winter	0.871	0.0	204.3	3340
5760 min Winter	0.710	0.0	359.3	4280
7200 min Winter	0.613	0.0	384.1	5248
8640 min Winter	0.548	0.0	403.7	6152
10080 min Winter	0.501	0.0	397.4	7080


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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Land at Stebbing Basin North	
Date 25/09/2023 10:42 File 332511125_ Stebbing Flo...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230925 Basin North 30yr35cc.SRCX

Upstream Structures	Outflow To	Overflow To
230925_Swale A_30yr35cc.SRCX	(None)	(None)
230925_Permeable Pavement Plot A_30yr35cc.SRCX		
230925_Swale B_30yr35cc.SRCX		
230925_Permeable Pavement Plot B_30yr35cc.SRCX		

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	65.122	0.322	0.8	127.2	O K
30 min Summer	65.212	0.412	0.8	167.9	O K
60 min Summer	65.301	0.501	0.8	210.7	O K
120 min Summer	65.415	0.615	0.8	269.5	O K
180 min Summer	65.477	0.677	0.8	302.7	O K
240 min Summer	65.516	0.716	0.8	324.7	O K
360 min Summer	65.563	0.763	0.8	351.5	O K
480 min Summer	65.591	0.791	0.9	367.9	O K
600 min Summer	65.609	0.809	0.9	379.1	O K
720 min Summer	65.623	0.823	0.9	387.3	O K
960 min Summer	65.636	0.836	0.9	394.8	O K
1440 min Summer	65.641	0.841	0.9	398.1	O K
2160 min Summer	65.638	0.838	0.9	396.2	O K
2880 min Summer	65.629	0.829	0.9	390.9	O K
4320 min Summer	65.615	0.815	0.9	382.2	O K
5760 min Summer	65.610	0.810	0.9	379.2	O K
7200 min Summer	65.609	0.809	0.9	379.1	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	102.143	0.0	66.1	211
30 min Summer	66.066	0.0	61.1	261
60 min Summer	40.995	0.0	121.1	314
120 min Summer	26.040	0.0	121.9	390
180 min Summer	19.483	0.0	127.5	440
240 min Summer	15.678	0.0	130.7	482
360 min Summer	11.348	0.0	134.1	556
480 min Summer	8.940	0.0	135.6	624
600 min Summer	7.404	0.0	136.3	692
720 min Summer	6.335	0.0	136.4	762
960 min Summer	4.940	0.0	135.9	970
1440 min Summer	3.476	0.0	133.2	1446
2160 min Summer	2.467	0.0	263.7	2164
2880 min Summer	1.949	0.0	261.2	2880
4320 min Summer	1.422	0.0	251.7	3636
5760 min Summer	1.153	0.0	496.3	4432
7200 min Summer	0.990	0.0	486.9	5192

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Land at Stebbing Basin North	
Date 25/09/2023 10:42 File 332511125_ Stebbing Flo...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230925 Basin North 30yr35cc.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
8640 min Summer	65.613	0.813	0.9	381.3	O K
10080 min Summer	65.619	0.819	0.9	385.1	O K
15 min Winter	65.122	0.322	0.8	127.2	O K
30 min Winter	65.212	0.412	0.8	167.9	O K
60 min Winter	65.301	0.501	0.8	210.7	O K
120 min Winter	65.415	0.615	0.8	269.5	O K
180 min Winter	65.477	0.677	0.8	302.7	O K
240 min Winter	65.516	0.716	0.8	324.7	O K
360 min Winter	65.563	0.763	0.8	351.6	O K
480 min Winter	65.591	0.791	0.9	368.1	O K
600 min Winter	65.610	0.810	0.9	379.4	O K
720 min Winter	65.624	0.824	0.9	387.7	O K
960 min Winter	65.637	0.837	0.9	395.9	O K
1440 min Winter	65.644	0.844	0.9	399.7	O K
2160 min Winter	65.642	0.842	0.9	398.8	O K
2880 min Winter	65.636	0.836	0.9	395.0	O K
4320 min Winter	65.620	0.820	0.9	385.5	O K
5760 min Winter	65.611	0.811	0.9	380.1	O K
7200 min Winter	65.607	0.807	0.9	377.8	O K
8640 min Winter	65.606	0.806	0.9	376.9	O K
10080 min Winter	65.606	0.806	0.9	377.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
8640 min Summer	0.880	0.0	481.5	6048
10080 min Summer	0.802	0.0	471.9	6872
15 min Winter	102.143	0.0	66.1	211
30 min Winter	66.066	0.0	61.1	261
60 min Winter	40.995	0.0	121.1	314
120 min Winter	26.040	0.0	121.9	390
180 min Winter	19.483	0.0	127.5	440
240 min Winter	15.678	0.0	130.7	482
360 min Winter	11.348	0.0	134.0	554
480 min Winter	8.940	0.0	135.5	622
600 min Winter	7.404	0.0	136.1	688
720 min Winter	6.335	0.0	136.3	758
960 min Winter	4.940	0.0	135.7	956
1440 min Winter	3.476	0.0	132.7	1420
2160 min Winter	2.467	0.0	263.1	2100
2880 min Winter	1.949	0.0	260.3	2768
4320 min Winter	1.422	0.0	250.5	4004
5760 min Winter	1.153	0.0	495.3	4536
7200 min Winter	0.990	0.0	486.5	5480
8640 min Winter	0.880	0.0	481.8	6408
10080 min Winter	0.802	0.0	473.0	7368

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Permeable Pavement Plot C	
Date 25/09/2023 09:01 File 332511125_Stebbing Plot...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	


Cascade Rainfall Details for 230925 Permeable Pavement Plot C 100yr
+45cc.SRCX

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	2013
Site Location	GB 565839 224532 TL 65839 24532
Data Type	Point
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	1.000
Cv (Winter)	1.000
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+45

Time Area Diagram

Total Area (ha) 0.070

Time (mins)	Area
From:	To: (ha)
0	4 0.070

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Permeable Pavement Plot C	
Date 25/09/2023 09:01 File 332511125_Stebbing Plot...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	

Cascade Model Details for 230925 Permeable Pavement Plot C 100yr +45cc.SRCX


Storage is Online Cover Level (m) 75.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	28.0
Max Percolation (l/s)	77.8	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	74.240	Cap Volume Depth (m)	0.550

Orifice Outflow Control

Diameter (m) 0.030 Discharge Coefficient 0.600 Invert Level (m) 74.240

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Swale C	
Date 25/09/2023 09:02 File 332511125_Stebbing Plot...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	


Cascade Rainfall Details for 230925 Swale C 100yr +45cc.SRCX

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	2013
Site Location	GB 565839 224532 TL 65839 24532
Data Type	Point
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	1.000
Cv (Winter)	1.000
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+45

Time Area Diagram

Total Area (ha) 0.089

Time (mins)		Area
From:	To:	(ha)
0	4	0.089

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Swale C	
Date 25/09/2023 09:02 File 332511125_Stebbing Plot...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	

Cascade Model Details for 230925 Swale C 100yr +45cc.SRCX


Storage is Online Cover Level (m) 70.000

Dry Swale Structure

Infiltration Coefficient Base (m/hr)	0.00000	Trench Length (m)	87.0
Infiltration Coefficient Side (m/hr)	0.00000	Trench Infiltration Side (m/hr)	0.00000
Safety Factor	2.0	Trench Porosity	0.30
Porosity	1.00	Side Slope (1:X)	3.0
Invert Level (m)	69.000	Slope (1:X)	180.0
Trench Height (m)	0.700	Cap Volume Depth (m)	0.850
Trench Width (m)	1.0	Cap Infiltration Depth (m)	0.000

Orifice Outflow Control

Diameter (m) 0.080 Discharge Coefficient 0.600 Invert Level (m) 69.000

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Permeable Pavement Plot D	
Date 25/09/2023 09:03 File 332511125_Stebbing Plot...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	


Cascade Rainfall Details for 230925 Permeable Pavement Plot D 100yr
+45cc.SRCX

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	2013
Site Location	GB 565839 224532 TL 65839 24532
Data Type	Point
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	1.000
Cv (Winter)	1.000
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+45

Time Area Diagram

Total Area (ha) 0.360

Time (mins)	Area
From:	To: (ha)
0	4 0.360

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Permeable Pavement Plot D	
Date 25/09/2023 09:03 File 332511125_Stebbing Plot...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	

Cascade Model Details for 230925 Permeable Pavement Plot D 100yr +45cc.SRCX

Storage is Online Cover Level (m) 72.200

Complex Structure

Cellular Storage

Invert Level (m) 71.540 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000


Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	1013.0	1013.0	0.301	0.0	1079.8
0.300	1013.0	1079.8			

Porous Car Park

Infiltration Coefficient Base (m/hr) 0.00000 Width (m) 10.0
 Membrane Percolation (mm/hr) 1000 Length (m) 101.3
 Max Percolation (l/s) 281.4 Slope (1:X) 150.0
 Safety Factor 2.0 Depression Storage (mm) 5
 Porosity 0.30 Evaporation (mm/day) 3
 Invert Level (m) 71.840 Cap Volume Depth (m) 0.150

Orifice Outflow Control

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 71.540

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Swale D	
Date 25/09/2023 09:03 File 332511125_Stebbing Plot...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	


Cascade Rainfall Details for 230925 Swale D 100yr +45cc.SRCX

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	2013
Site Location	GB 565839 224532 TL 65839 24532
Data Type	Point
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	1.000
Cv (Winter)	1.000
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+45

Time Area Diagram

Total Area (ha) 0.000

Time (mins)		Area
From:	To:	(ha)
0	4	0.000

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Stebbing Swale D	
Date 25/09/2023 09:03 File 332511125_Stebbing Plot...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	

Cascade Model Details for 230925 Swale D 100yr +45cc.SRCX


Storage is Online Cover Level (m) 69.200

Dry Swale Structure

Infiltration Coefficient Base (m/hr)	0.00000	Trench Length (m)	17.0
Infiltration Coefficient Side (m/hr)	0.00000	Trench Infiltration Side (m/hr)	0.00000
Safety Factor	2.0	Trench Porosity	0.30
Porosity	1.00	Side Slope (1:X)	3.0
Invert Level (m)	68.500	Slope (1:X)	150.0
Trench Height (m)	0.500	Cap Volume Depth (m)	0.550
Trench Width (m)	0.2	Cap Infiltration Depth (m)	0.000

Orifice Outflow Control

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 68.500

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Land at Stebbing Basin South	
Date 25/09/2023 09:04 File 332511125_Stebbing Plot...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	


Cascade Rainfall Details for 230925 Basin South 100yr +45cc.SRCX

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	2013
Site Location	GB 565839 224532 TL 65839 24532
Data Type	Point
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	1.000
Cv (Winter)	1.000
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+45

Time Area Diagram

Total Area (ha) 0.069

Time (mins)		Area
From:	To:	(ha)
0	4	0.069

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Land at Stebbing Basin South	
Date 25/09/2023 09:04 File 332511125_Stebbing Plot...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	

Cascade Model Details for 230925 Basin South 100yr +45cc.SRCX

Storage is Online Cover Level (m) 67.200

Tank or Pond Structure

Invert Level (m) 65.800

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	235.0	1.400	640.0


Hydro-Brake® Optimum Outflow Control

Unit Reference	MD-SHE-0043-1000-1400-1000
Design Head (m)	1.400
Design Flow (l/s)	1.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	43
Invert Level (m)	65.800
Minimum Outlet Pipe Diameter (mm)	75
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.400	1.0
Flush-Flo™	0.189	0.7
Kick-Flo®	0.383	0.6
Mean Flow over Head Range	-	0.7

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

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	0.6	1.200	0.9	3.000	1.4	7.000	2.1
0.200	0.7	1.400	1.0	3.500	1.5	7.500	2.1
0.300	0.7	1.600	1.1	4.000	1.6	8.000	2.2
0.400	0.6	1.800	1.1	4.500	1.7	8.500	2.3
0.500	0.6	2.000	1.2	5.000	1.8	9.000	2.3
0.600	0.7	2.200	1.2	5.500	1.9	9.500	2.4
0.800	0.8	2.400	1.3	6.000	1.9		
1.000	0.9	2.600	1.3	6.500	2.0		

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Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230925 Permeable Pavement Plot C 100yr
+45cc.SRCX


Upstream Structures Outflow To Overflow To

(None) 230925_Swale C_100yr +45cc.SRCX (None)

Half Drain Time : 299 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	74.578	0.338	0.0	1.1	1.1	22.5	O K
30 min Summer	74.659	0.419	0.0	1.2	1.2	29.3	O K
60 min Summer	74.734	0.494	0.0	1.3	1.3	35.6	O K
120 min Summer	74.817	0.577	0.0	1.4	1.4	42.4	O K
180 min Summer	74.860	0.620	0.0	1.5	1.5	44.8	O K
240 min Summer	74.873	0.633	0.0	1.5	1.5	45.3	O K
360 min Summer	74.861	0.621	0.0	1.5	1.5	44.8	O K
480 min Summer	74.836	0.596	0.0	1.4	1.4	43.6	O K
600 min Summer	74.811	0.571	0.0	1.4	1.4	42.0	O K
720 min Summer	74.790	0.550	0.0	1.4	1.4	40.3	O K
960 min Summer	74.751	0.511	0.0	1.3	1.3	37.0	O K
1440 min Summer	74.683	0.443	0.0	1.2	1.2	31.3	O K
2160 min Summer	74.609	0.369	0.0	1.1	1.1	25.1	O K
2880 min Summer	74.557	0.317	0.0	1.0	1.0	20.7	O K
4320 min Summer	74.488	0.248	0.0	0.9	0.9	14.9	O K
5760 min Summer	74.444	0.204	0.0	0.8	0.8	11.3	O K
7200 min Summer	74.415	0.175	0.0	0.8	0.8	8.8	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	140.814	0.0	23.2	19
30 min Summer	91.968	0.0	30.8	33
60 min Summer	57.414	0.0	38.8	62
120 min Summer	36.102	0.0	49.1	122
180 min Summer	26.993	0.0	55.2	180
240 min Summer	21.742	0.0	59.3	226
360 min Summer	15.776	0.0	64.6	284
480 min Summer	12.433	0.0	67.9	348
600 min Summer	10.289	0.0	70.3	416
720 min Summer	8.792	0.0	72.0	484
960 min Summer	6.832	0.0	74.6	618
1440 min Summer	4.769	0.0	77.9	894
2160 min Summer	3.340	0.0	81.5	1280
2880 min Summer	2.609	0.0	84.6	1668
4320 min Summer	1.874	0.0	90.5	2380
5760 min Summer	1.502	0.0	96.2	3120
7200 min Summer	1.275	0.0	101.5	3824

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Cascade Summary of Results for 230925 Permeable Pavement Plot C 100yr
+45cc.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (1/s)	Max Control (1/s)	Max Σ Outflow (1/s)	Max Volume (m ³)	Status
8640 min Summer	74.393	0.153	0.0	0.7	0.7	7.0	O K
10080 min Summer	74.378	0.138	0.0	0.7	0.7	5.8	O K
15 min Winter	74.578	0.338	0.0	1.1	1.1	22.5	O K
30 min Winter	74.659	0.419	0.0	1.2	1.2	29.3	O K
60 min Winter	74.735	0.495	0.0	1.3	1.3	35.7	O K
120 min Winter	74.819	0.579	0.0	1.4	1.4	42.5	O K
180 min Winter	74.867	0.627	0.0	1.5	1.5	45.1	O K
240 min Winter	74.887	0.647	0.0	1.5	1.5	45.7	O K
360 min Winter	74.862	0.622	0.0	1.5	1.5	44.9	O K
480 min Winter	74.832	0.592	0.0	1.4	1.4	43.4	O K
600 min Winter	74.804	0.564	0.0	1.4	1.4	41.4	O K
720 min Winter	74.779	0.539	0.0	1.4	1.4	39.4	O K
960 min Winter	74.730	0.490	0.0	1.3	1.3	35.3	O K
1440 min Winter	74.646	0.406	0.0	1.2	1.2	28.2	O K
2160 min Winter	74.557	0.317	0.0	1.0	1.0	20.7	O K
2880 min Winter	74.496	0.256	0.0	0.9	0.9	15.6	O K
4320 min Winter	74.421	0.181	0.0	0.8	0.8	9.3	O K
5760 min Winter	74.379	0.139	0.0	0.7	0.7	5.8	O K
7200 min Winter	74.352	0.112	0.0	0.6	0.6	3.8	O K
8640 min Winter	74.334	0.094	0.0	0.5	0.5	2.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
8640 min Summer	1.123	0.0	106.7	4576
10080 min Summer	1.015	0.0	112.1	5248
15 min Winter	140.814	0.0	23.2	18
30 min Winter	91.968	0.0	30.8	33
60 min Winter	57.414	0.0	38.8	62
120 min Winter	36.102	0.0	49.1	118
180 min Winter	26.993	0.0	55.2	176
240 min Winter	21.742	0.0	59.3	230
360 min Winter	15.776	0.0	64.6	290
480 min Winter	12.433	0.0	67.9	366
600 min Winter	10.289	0.0	70.3	442
720 min Winter	8.792	0.0	72.0	520
960 min Winter	6.832	0.0	74.6	664
1440 min Winter	4.769	0.0	77.9	950
2160 min Winter	3.340	0.0	81.5	1344
2880 min Winter	2.609	0.0	84.6	1728
4320 min Winter	1.874	0.0	90.5	2464
5760 min Winter	1.502	0.0	96.2	3168
7200 min Winter	1.275	0.0	101.5	3824
8640 min Winter	1.123	0.0	106.8	4504

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Cascade Summary of Results for 230925 Permeable Pavement Plot C 100yr
+45cc.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (1/s)	Max Control (1/s)	Max Σ (1/s)	Max Outflow (1/s)	Max Volume (m ³)	Status
10080 min Winter	74.321	0.081	0.0	0.5	0.5	2.0		O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
10080 min Winter	1.015	0.0	112.1	5240

Cascade Summary of Results for 230925 Swale C 100yr +45cc.SRCX

Upstream Structures	Outflow To	Overflow To
230925_Permeable Pavement Plot C_100yr +45cc.SRCX	230925_Basin South_100yr +45cc.SRCX	(None)
Half Drain Time : 21 minutes.		

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ (l/s)	Max Outflow Volume (m³)	Status
15 min Summer	69.943	0.943	0.0	12.7	12.7	23.0	O K
30 min Summer	69.996	0.996	0.0	13.1	13.1	25.9	O K
60 min Summer	69.997	0.997	0.0	13.1	13.1	25.9	O K
120 min Summer	69.962	0.962	0.0	12.8	12.8	24.1	O K
180 min Summer	69.905	0.905	0.0	12.4	12.4	21.0	O K
240 min Summer	69.850	0.850	0.0	12.0	12.0	17.9	O K
360 min Summer	69.733	0.733	0.0	11.1	11.1	12.9	O K
480 min Summer	69.603	0.603	0.0	10.0	10.0	9.4	O K
600 min Summer	69.507	0.507	0.0	9.1	9.1	6.9	O K
720 min Summer	69.435	0.435	0.0	8.4	8.4	5.1	O K
960 min Summer	69.331	0.331	0.0	7.2	7.2	3.0	O K
1440 min Summer	69.215	0.215	0.0	5.6	5.6	1.2	O K
2160 min Summer	69.139	0.139	0.0	4.2	4.2	0.5	O K
2880 min Summer	69.110	0.110	0.0	3.4	3.4	0.3	O K
4320 min Summer	69.092	0.092	0.0	2.7	2.7	0.2	O K
5760 min Summer	69.082	0.082	0.0	2.2	2.2	0.2	O K
7200 min Summer	69.076	0.076	0.0	2.0	2.0	0.2	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	140.814	0.0	54.6	16
30 min Summer	91.968	0.0	71.7	25
60 min Summer	57.414	0.0	89.9	42
120 min Summer	36.102	0.0	113.3	76
180 min Summer	26.993	0.0	127.3	110
240 min Summer	21.742	0.0	136.7	142
360 min Summer	15.776	0.0	148.9	202
480 min Summer	12.433	0.0	156.5	262
600 min Summer	10.289	0.0	161.8	320
720 min Summer	8.792	0.0	165.9	378
960 min Summer	6.832	0.0	171.9	494
1440 min Summer	4.769	0.0	179.8	736
2160 min Summer	3.340	0.0	188.5	1100
2880 min Summer	2.609	0.0	196.0	1468
4320 min Summer	1.874	0.0	210.6	2196
5760 min Summer	1.502	0.0	224.5	2920
7200 min Summer	1.275	0.0	237.6	3640



Cascade Summary of Results for 230925 Swale C 100yr +45cc.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (1/s)	Max Control (1/s)	Max Σ Outflow (1/s)	Max Volume (m ³)	Status
8640 min Summer	69.071	0.071	0.0	1.8	1.8	0.1	O K
10080 min Summer	69.068	0.068	0.0	1.7	1.7	0.1	O K
15 min Winter	69.944	0.944	0.0	12.7	12.7	23.1	O K
30 min Winter	69.995	0.995	0.0	13.1	13.1	25.8	O K
60 min Winter	69.979	0.979	0.0	12.9	12.9	24.9	O K
120 min Winter	69.909	0.909	0.0	12.5	12.5	21.2	O K
180 min Winter	69.830	0.830	0.0	11.9	11.9	16.8	O K
240 min Winter	69.740	0.740	0.0	11.2	11.2	13.1	O K
360 min Winter	69.549	0.549	0.0	9.5	9.5	8.0	O K
480 min Winter	69.425	0.425	0.0	8.3	8.3	4.9	O K
600 min Winter	69.337	0.337	0.0	7.3	7.3	3.1	O K
720 min Winter	69.275	0.275	0.0	6.5	6.5	2.0	O K
960 min Winter	69.198	0.198	0.0	5.3	5.3	1.1	O K
1440 min Winter	69.129	0.129	0.0	4.0	4.0	0.4	O K
2160 min Winter	69.100	0.100	0.0	3.0	3.0	0.3	O K
2880 min Winter	69.088	0.088	0.0	2.5	2.5	0.2	O K
4320 min Winter	69.074	0.074	0.0	1.9	1.9	0.1	O K
5760 min Winter	69.067	0.067	0.0	1.6	1.6	0.1	O K
7200 min Winter	69.061	0.061	0.0	1.4	1.4	0.1	O K
8640 min Winter	69.056	0.056	0.0	1.2	1.2	0.1	O K
10080 min Winter	69.053	0.053	0.0	1.1	1.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
8640 min Summer	1.123	0.0	250.6	4336
10080 min Summer	1.015	0.0	263.9	5136
15 min Winter	140.814	0.0	54.6	16
30 min Winter	91.968	0.0	71.7	26
60 min Winter	57.414	0.0	89.9	44
120 min Winter	36.102	0.0	113.3	82
180 min Winter	26.993	0.0	127.3	114
240 min Winter	21.742	0.0	136.7	146
360 min Winter	15.776	0.0	148.9	208
480 min Winter	12.433	0.0	156.5	266
600 min Winter	10.289	0.0	161.8	322
720 min Winter	8.792	0.0	165.9	378
960 min Winter	6.832	0.0	171.9	494
1440 min Winter	4.769	0.0	179.8	734
2160 min Winter	3.340	0.0	188.5	1100
2880 min Winter	2.609	0.0	196.0	1496
4320 min Winter	1.874	0.0	210.6	2204
5760 min Winter	1.502	0.0	224.5	2976
7200 min Winter	1.275	0.0	237.6	3632
8640 min Winter	1.123	0.0	250.7	4336
10080 min Winter	1.015	0.0	263.9	5112

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Cascade Summary of Results for 230925 Permeable Pavement Plot D 100yr
+45cc.SRCX


Upstream Structures Outflow To Overflow To

(None) 230925_Swale D_100yr +45cc.SRCX (None)

Half Drain Time : 881 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	71.665	0.125	0.0	1.7	1.7	120.7	O K
30 min Summer	71.705	0.165	0.0	2.0	2.0	158.4	O K
60 min Summer	71.745	0.205	0.0	2.2	2.2	197.1	O K
120 min Summer	71.794	0.254	0.0	2.5	2.5	244.6	O K
180 min Summer	71.821	0.281	0.0	2.6	2.6	270.2	O K
240 min Summer	71.837	0.297	0.0	2.7	2.7	285.6	O K
360 min Summer	72.052	0.512	0.0	3.6	3.6	298.3	O K
480 min Summer	72.078	0.538	0.0	3.7	3.7	300.0	O K
600 min Summer	72.052	0.512	0.0	3.6	3.6	298.3	O K
720 min Summer	72.024	0.484	0.0	3.5	3.5	296.4	O K
960 min Summer	71.962	0.422	0.0	3.3	3.3	292.4	O K
1440 min Summer	71.834	0.294	0.0	2.7	2.7	282.8	O K
2160 min Summer	71.817	0.277	0.0	2.6	2.6	267.0	O K
2880 min Summer	71.804	0.264	0.0	2.5	2.5	253.6	O K
4320 min Summer	71.782	0.242	0.0	2.4	2.4	232.9	O K
5760 min Summer	71.765	0.225	0.0	2.3	2.3	216.8	O K
7200 min Summer	71.751	0.211	0.0	2.3	2.3	203.4	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	140.814	0.0	86.1	19
30 min Summer	91.968	0.0	113.9	34
60 min Summer	57.414	0.0	178.6	64
120 min Summer	36.102	0.0	226.2	124
180 min Summer	26.993	0.0	253.2	182
240 min Summer	21.742	0.0	270.9	242
360 min Summer	15.776	0.0	293.1	362
480 min Summer	12.433	0.0	305.8	480
600 min Summer	10.289	0.0	313.5	560
720 min Summer	8.792	0.0	317.9	614
960 min Summer	6.832	0.0	319.7	750
1440 min Summer	4.769	0.0	311.5	1052
2160 min Summer	3.340	0.0	405.4	1452
2880 min Summer	2.609	0.0	418.4	1848
4320 min Summer	1.874	0.0	436.4	2680
5760 min Summer	1.502	0.0	494.4	3464
7200 min Summer	1.275	0.0	521.4	4248

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Cascade Summary of Results for 230925 Permeable Pavement Plot D 100yr
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Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (1/s)	Max Control (1/s)	Max Σ Outflow (1/s)	Max Volume (m³)	Status
8640 min Summer	71.740	0.200	0.0	2.2	2.2	192.7	O K
10080 min Summer	71.731	0.191	0.0	2.1	2.1	184.0	O K
15 min Winter	71.665	0.125	0.0	1.7	1.7	120.7	O K
30 min Winter	71.705	0.165	0.0	2.0	2.0	158.4	O K
60 min Winter	71.745	0.205	0.0	2.2	2.2	197.0	O K
120 min Winter	71.794	0.254	0.0	2.5	2.5	244.7	O K
180 min Winter	71.821	0.281	0.0	2.6	2.6	270.4	O K
240 min Winter	71.837	0.297	0.0	2.7	2.7	285.8	O K
360 min Winter	72.062	0.522	0.0	3.7	3.7	299.0	O K
480 min Winter	72.101	0.561	0.0	3.8	3.8	301.6	O K
600 min Winter	72.084	0.544	0.0	3.8	3.8	300.4	O K
720 min Winter	72.044	0.504	0.0	3.6	3.6	297.7	O K
960 min Winter	71.964	0.424	0.0	3.3	3.3	292.5	O K
1440 min Winter	71.832	0.292	0.0	2.7	2.7	280.7	O K
2160 min Winter	71.811	0.271	0.0	2.6	2.6	260.3	O K
2880 min Winter	71.792	0.252	0.0	2.5	2.5	242.3	O K
4320 min Winter	71.762	0.222	0.0	2.3	2.3	214.0	O K
5760 min Winter	71.739	0.199	0.0	2.2	2.2	191.9	O K
7200 min Winter	71.721	0.181	0.0	2.1	2.1	174.3	O K
8640 min Winter	71.706	0.166	0.0	2.0	2.0	160.1	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
8640 min Summer	1.123	0.0	547.2	5016
10080 min Summer	1.015	0.0	570.7	5752
15 min Winter	140.814	0.0	86.1	19
30 min Winter	91.968	0.0	113.9	33
60 min Winter	57.414	0.0	178.6	62
120 min Winter	36.102	0.0	226.2	122
180 min Winter	26.993	0.0	253.2	180
240 min Winter	21.742	0.0	271.0	238
360 min Winter	15.776	0.0	293.2	352
480 min Winter	12.433	0.0	305.9	462
600 min Winter	10.289	0.0	313.6	568
720 min Winter	8.792	0.0	318.1	668
960 min Winter	6.832	0.0	320.2	768
1440 min Winter	4.769	0.0	312.1	1098
2160 min Winter	3.340	0.0	405.5	1556
2880 min Winter	2.609	0.0	418.5	1992
4320 min Winter	1.874	0.0	436.7	2852
5760 min Winter	1.502	0.0	494.4	3680
7200 min Winter	1.275	0.0	521.5	4464
8640 min Winter	1.123	0.0	547.4	5264

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Cascade Summary of Results for 230925 Permeable Pavement Plot D 100yr
+45cc.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (1/s)	Max Control (1/s)	Max Σ (1/s)	Max Outflow (1/s)	Max Volume (m ³)	Status
10080 min Winter	71.695	0.155	0.0	1.9	1.9	148.8	0 K	

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
10080 min Winter	1.015	0.0	571.4	5960

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Cascade Summary of Results for 230925 Swale D 100yr +45cc.SRCX

Upstream Structures	Outflow To	Overflow To
230925_Permeable Pavement Plot D_100yr +45cc.SRCX	230925_Basin South_100yr +45cc.SRCX	(None)

Half Drain Time : 1 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ (l/s)	Max Outflow Volume (m³)	Status
15 min Summer	68.625	0.125	0.0	1.6	1.6	0.1	O K
30 min Summer	68.664	0.164	0.0	1.9	1.9	0.1	O K
60 min Summer	68.704	0.204	0.0	2.2	2.2	0.2	O K
120 min Summer	68.754	0.254	0.0	2.5	2.5	0.2	O K
180 min Summer	68.780	0.280	0.0	2.6	2.6	0.2	O K
240 min Summer	68.796	0.296	0.0	2.7	2.7	0.2	O K
360 min Summer	69.008	0.508	0.0	3.6	3.6	0.5	O K
480 min Summer	69.036	0.536	0.0	3.7	3.7	0.5	O K
600 min Summer	69.012	0.512	0.0	3.6	3.6	0.5	O K
720 min Summer	68.984	0.484	0.0	3.5	3.5	0.4	O K
960 min Summer	68.922	0.422	0.0	3.3	3.3	0.4	O K
1440 min Summer	68.794	0.294	0.0	2.7	2.7	0.2	O K
2160 min Summer	68.777	0.277	0.0	2.6	2.6	0.2	O K
2880 min Summer	68.764	0.264	0.0	2.5	2.5	0.2	O K
4320 min Summer	68.742	0.242	0.0	2.4	2.4	0.2	O K
5760 min Summer	68.726	0.226	0.0	2.3	2.3	0.2	O K
7200 min Summer	68.711	0.211	0.0	2.3	2.3	0.2	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	140.814	0.0	86.1	27
30 min Summer	91.968	0.0	113.8	42
60 min Summer	57.414	0.0	178.6	68
120 min Summer	36.102	0.0	226.2	128
180 min Summer	26.993	0.0	253.2	188
240 min Summer	21.742	0.0	270.9	246
360 min Summer	15.776	0.0	293.1	364
480 min Summer	12.433	0.0	305.8	482
600 min Summer	10.289	0.0	313.4	556
720 min Summer	8.792	0.0	317.9	612
960 min Summer	6.832	0.0	319.6	760
1440 min Summer	4.769	0.0	311.5	1064
2160 min Summer	3.340	0.0	405.4	1420
2880 min Summer	2.609	0.0	418.4	1872
4320 min Summer	1.874	0.0	436.4	2680
5760 min Summer	1.502	0.0	494.4	3504
7200 min Summer	1.275	0.0	521.4	4192



Cascade Summary of Results for 230925 Swale D 100yr +45cc.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (1/s)	Max Control (1/s)	Max Σ Outflow (1/s)	Max Volume (m ³)	Status
8640 min Summer	68.700	0.200	0.0	2.2	2.2	0.1	O K
10080 min Summer	68.691	0.191	0.0	2.1	2.1	0.1	O K
15 min Winter	68.625	0.125	0.0	1.6	1.6	0.1	O K
30 min Winter	68.664	0.164	0.0	1.9	1.9	0.1	O K
60 min Winter	68.704	0.204	0.0	2.2	2.2	0.2	O K
120 min Winter	68.754	0.254	0.0	2.5	2.5	0.2	O K
180 min Winter	68.781	0.281	0.0	2.6	2.6	0.2	O K
240 min Winter	68.797	0.297	0.0	2.7	2.7	0.2	O K
360 min Winter	69.019	0.519	0.0	3.7	3.7	0.5	O K
480 min Winter	69.054	0.554	0.0	3.8	3.8	0.6	O K
600 min Winter	69.042	0.542	0.0	3.8	3.8	0.5	O K
720 min Winter	69.004	0.504	0.0	3.6	3.6	0.5	O K
960 min Winter	68.924	0.424	0.0	3.3	3.3	0.4	O K
1440 min Winter	68.792	0.292	0.0	2.7	2.7	0.2	O K
2160 min Winter	68.771	0.271	0.0	2.6	2.6	0.2	O K
2880 min Winter	68.752	0.252	0.0	2.5	2.5	0.2	O K
4320 min Winter	68.722	0.222	0.0	2.3	2.3	0.2	O K
5760 min Winter	68.699	0.199	0.0	2.2	2.2	0.1	O K
7200 min Winter	68.681	0.181	0.0	2.1	2.1	0.1	O K
8640 min Winter	68.666	0.166	0.0	2.0	2.0	0.1	O K
10080 min Winter	68.655	0.155	0.0	1.9	1.9	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
8640 min Summer	1.123	0.0	547.2	5048
10080 min Summer	1.015	0.0	570.7	5736
15 min Winter	140.814	0.0	86.1	27
30 min Winter	91.968	0.0	113.9	39
60 min Winter	57.414	0.0	178.6	66
120 min Winter	36.102	0.0	226.2	126
180 min Winter	26.993	0.0	253.2	186
240 min Winter	21.742	0.0	271.0	242
360 min Winter	15.776	0.0	293.2	356
480 min Winter	12.433	0.0	305.9	472
600 min Winter	10.289	0.0	313.6	576
720 min Winter	8.792	0.0	318.0	672
960 min Winter	6.832	0.0	320.2	770
1440 min Winter	4.769	0.0	312.1	1088
2160 min Winter	3.340	0.0	405.5	1596
2880 min Winter	2.609	0.0	418.5	2020
4320 min Winter	1.874	0.0	436.7	2796
5760 min Winter	1.502	0.0	494.4	3592
7200 min Winter	1.275	0.0	521.5	4552
8640 min Winter	1.123	0.0	547.4	5328
10080 min Winter	1.015	0.0	571.4	5944

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Innovyze	Source Control 2020.1	


Cascade Summary of Results for 230925 Basin South 100yr +45cc.SRCX

Upstream Structures	Outflow To	Overflow To
230925_Swale C_100yr +45cc.SRCX	(None)	(None)
230925_Permeable Pavement Plot C_100yr +45cc.SRCX		
230925_Swale D_100yr +45cc.SRCX		
230925_Permeable Pavement Plot D_100yr +45cc.SRCX		

Outflow is too low. Design is unsatisfactory.

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
15 min Summer	66.207	0.407	0.7	114.9	O K
30 min Summer	66.344	0.544	0.7	163.0	O K
60 min Summer	66.473	0.673	0.7	212.7	O K
120 min Summer	66.623	0.823	0.8	276.6	O K
180 min Summer	66.705	0.905	0.8	314.5	O K
240 min Summer	66.758	0.958	0.8	340.3	O K
360 min Summer	66.825	1.025	0.9	373.9	O K
480 min Summer	66.866	1.066	0.9	394.8	O K
600 min Summer	66.892	1.092	0.9	409.0	O K
720 min Summer	66.912	1.112	0.9	419.3	O K
960 min Summer	66.934	1.134	0.9	431.7	O K
1440 min Summer	66.951	1.151	0.9	440.6	O K
2160 min Summer	66.993	1.193	0.9	464.5	O K
2880 min Summer	67.016	1.216	0.9	477.4	O K
4320 min Summer	67.056	1.256	1.0	500.6	O K
5760 min Summer	67.087	1.287	1.0	519.3	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
15 min Summer	140.814	0.0	51.7	1139
30 min Summer	91.968	0.0	54.3	1401
60 min Summer	57.414	0.0	119.0	1672
120 min Summer	36.102	0.0	128.5	2004
180 min Summer	26.993	0.0	132.9	2200
240 min Summer	21.742	0.0	135.3	2336
360 min Summer	15.776	0.0	137.6	2502
480 min Summer	12.433	0.0	138.3	2614
600 min Summer	10.289	0.0	138.2	2714
720 min Summer	8.792	0.0	137.5	2814
960 min Summer	6.832	0.0	135.2	2880
1440 min Summer	4.769	0.0	129.6	2880
2160 min Summer	3.340	0.0	279.1	3776
2880 min Summer	2.609	0.0	271.2	4196
4320 min Summer	1.874	0.0	252.9	5076
5760 min Summer	1.502	0.0	540.6	6000

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Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230925 Basin South 100yr +45cc.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
7200 min Summer	67.104	1.304	1.0	529.2	O K
8640 min Summer	67.109	1.309	1.0	532.4	O K
10080 min Summer	67.119	1.319	1.0	538.5	O K
15 min Winter	66.207	0.407	0.7	114.9	O K
30 min Winter	66.344	0.544	0.7	163.0	O K
60 min Winter	66.473	0.673	0.7	212.7	O K
120 min Winter	66.623	0.823	0.8	276.6	O K
180 min Winter	66.705	0.905	0.8	314.6	O K
240 min Winter	66.758	0.958	0.8	340.3	O K
360 min Winter	66.826	1.026	0.9	374.1	O K
480 min Winter	66.866	1.066	0.9	395.0	O K
600 min Winter	66.893	1.093	0.9	409.3	O K
720 min Winter	66.912	1.112	0.9	419.6	O K
960 min Winter	66.936	1.136	0.9	432.5	O K
1440 min Winter	66.952	1.152	0.9	441.6	O K
2160 min Winter	66.995	1.195	0.9	465.6	O K
2880 min Winter	67.018	1.218	0.9	478.6	O K
4320 min Winter	67.058	1.258	1.0	501.9	O K
5760 min Winter	67.089	1.289	1.0	520.6	O K
7200 min Winter	67.109	1.309	1.0	532.4	O K
8640 min Winter	67.114	1.314	1.0	535.7	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
7200 min Summer	1.275	0.0	529.5	7200
8640 min Summer	1.123	0.0	514.9	7928
10080 min Summer	1.015	0.0	497.2	8672
15 min Winter	140.814	0.0	51.7	1140
30 min Winter	91.968	0.0	54.4	1400
60 min Winter	57.414	0.0	119.0	1670
120 min Winter	36.102	0.0	128.5	2004
180 min Winter	26.993	0.0	132.9	2196
240 min Winter	21.742	0.0	135.3	2334
360 min Winter	15.776	0.0	137.6	2502
480 min Winter	12.433	0.0	138.3	2612
600 min Winter	10.289	0.0	138.1	2712
720 min Winter	8.792	0.0	137.3	2812
960 min Winter	6.832	0.0	135.0	2880
1440 min Winter	4.769	0.0	129.2	2880
2160 min Winter	3.340	0.0	278.7	3760
2880 min Winter	2.609	0.0	270.8	4184
4320 min Winter	1.874	0.0	252.4	5060
5760 min Winter	1.502	0.0	540.4	5976
7200 min Winter	1.275	0.0	529.5	7056
8640 min Winter	1.123	0.0	515.1	8120

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Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230925 Basin South 100yr +45cc.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
10080 min Winter	67.119	1.319	1.0	538.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
10080 min Winter	1.015	0.0	497.7	8856

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Land at Stebbing Basin South	
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Cascade Summary of Results for 230925 Basin South 10yr.SRCX

Upstream Structures	Outflow To	Overflow To
230925_Swale C_10yr.SRCX	(None)	(None)
230925_Permeable Pavement Plot C_10yr.SRCX		
230925_Swale D_10yr.SRCX		
230925_Permeable Pavement Plot D_10yr.SRCX		

Outflow is too low. Design is unsatisfactory.

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
15 min Summer	65.920	0.120	0.7	29.7	O K
30 min Summer	65.969	0.169	0.7	43.0	O K
60 min Summer	66.025	0.225	0.7	58.7	O K
120 min Summer	66.124	0.324	0.7	88.1	O K
180 min Summer	66.185	0.385	0.7	107.7	O K
240 min Summer	66.222	0.422	0.7	120.0	O K
360 min Summer	66.265	0.465	0.7	134.5	O K
480 min Summer	66.289	0.489	0.7	142.9	O K
600 min Summer	66.305	0.505	0.7	148.6	O K
720 min Summer	66.317	0.517	0.7	152.8	O K
960 min Summer	66.333	0.533	0.7	158.9	O K
1440 min Summer	66.354	0.554	0.7	166.5	O K
2160 min Summer	66.375	0.575	0.7	174.3	O K
2880 min Summer	66.390	0.590	0.7	180.1	O K
4320 min Summer	66.405	0.605	0.7	185.7	O K
5760 min Summer	66.407	0.607	0.7	186.6	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
15 min Summer	57.931	0.0	49.9	264
30 min Summer	37.261	0.0	57.1	361
60 min Summer	22.931	0.0	106.7	538
120 min Summer	15.007	0.0	112.6	918
180 min Summer	11.355	0.0	104.0	1198
240 min Summer	9.199	0.0	100.6	1294
360 min Summer	6.716	0.0	100.9	1432
480 min Summer	5.311	0.0	101.7	1548
600 min Summer	4.409	0.0	101.8	1646
720 min Summer	3.780	0.0	101.6	1740
960 min Summer	2.959	0.0	100.5	1904
1440 min Summer	2.093	0.0	96.8	2216
2160 min Summer	1.493	0.0	197.4	2664
2880 min Summer	1.185	0.0	192.8	3120
4320 min Summer	0.871	0.0	180.9	4316
5760 min Summer	0.710	0.0	368.8	5040

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Land at Stebbing Basin South	
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Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230925 Basin South 10yr.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
7200 min Summer	66.413	0.613	0.7	188.8	O K
8640 min Summer	66.420	0.620	0.7	191.8	O K
10080 min Summer	66.429	0.629	0.7	195.2	O K
15 min Winter	65.920	0.120	0.7	29.7	O K
30 min Winter	65.969	0.169	0.7	43.0	O K
60 min Winter	66.025	0.225	0.7	58.7	O K
120 min Winter	66.124	0.324	0.7	88.1	O K
180 min Winter	66.185	0.385	0.7	107.6	O K
240 min Winter	66.222	0.422	0.7	120.0	O K
360 min Winter	66.264	0.464	0.7	134.4	O K
480 min Winter	66.288	0.488	0.7	142.8	O K
600 min Winter	66.304	0.504	0.7	148.5	O K
720 min Winter	66.316	0.516	0.7	152.7	O K
960 min Winter	66.333	0.533	0.7	158.7	O K
1440 min Winter	66.352	0.552	0.7	166.0	O K
2160 min Winter	66.372	0.572	0.7	173.4	O K
2880 min Winter	66.387	0.587	0.7	178.8	O K
4320 min Winter	66.401	0.601	0.7	184.3	O K
5760 min Winter	66.398	0.598	0.7	183.3	O K
7200 min Winter	66.398	0.598	0.7	183.1	O K
8640 min Winter	66.399	0.599	0.7	183.6	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
7200 min Summer	0.613	0.0	371.6	5800
8640 min Summer	0.548	0.0	354.5	6576
10080 min Summer	0.501	0.0	340.3	7352
15 min Winter	57.931	0.0	49.9	264
30 min Winter	37.261	0.0	57.1	360
60 min Winter	22.931	0.0	106.7	538
120 min Winter	15.007	0.0	112.7	918
180 min Winter	11.355	0.0	104.1	1196
240 min Winter	9.199	0.0	100.7	1292
360 min Winter	6.716	0.0	101.0	1430
480 min Winter	5.311	0.0	101.8	1546
600 min Winter	4.409	0.0	102.0	1642
720 min Winter	3.780	0.0	101.9	1738
960 min Winter	2.959	0.0	100.9	1900
1440 min Winter	2.093	0.0	97.5	2208
2160 min Winter	1.493	0.0	198.5	2656
2880 min Winter	1.185	0.0	194.2	3112
4320 min Winter	0.871	0.0	183.3	4216
5760 min Winter	0.710	0.0	369.3	5208
7200 min Winter	0.613	0.0	375.5	5912
8640 min Winter	0.548	0.0	359.2	6752

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Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230925 Basin South 10yr.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
10080 min Winter	66.401	0.601	0.7	184.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
10080 min Winter	0.501	0.0	344.9	7640

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Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Land at Stebbing Basin South	
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Innovyze	Source Control 2020.1	


Cascade Summary of Results for 230925 Basin South 30yr +35cc.SRCX

Upstream Structures	Outflow To	Overflow To
230925_Swale C_30yr +35cc.SRCX	(None)	(None)
230925_Permeable Pavement Plot C_30yr +35cc.SRCX		
230925_Swale D_30yr +35cc.SRCX		
230925_Permeable Pavement Plot D_30yr +35cc.SRCX		

Outflow is too low. Design is unsatisfactory.

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
15 min Summer	66.063	0.263	0.7	69.6	O K
30 min Summer	66.174	0.374	0.7	103.9	O K
60 min Summer	66.282	0.482	0.7	140.6	O K
120 min Summer	66.412	0.612	0.7	188.8	O K
180 min Summer	66.481	0.681	0.7	215.8	O K
240 min Summer	66.524	0.724	0.7	233.7	O K
360 min Summer	66.576	0.776	0.8	255.8	O K
480 min Summer	66.607	0.807	0.8	269.4	O K
600 min Summer	66.628	0.828	0.8	279.1	O K
720 min Summer	66.644	0.844	0.8	286.3	O K
960 min Summer	66.667	0.867	0.8	296.7	O K
1440 min Summer	66.696	0.896	0.8	310.4	O K
2160 min Summer	66.728	0.928	0.8	325.4	O K
2880 min Summer	66.753	0.953	0.8	337.5	O K
4320 min Summer	66.793	0.993	0.9	357.6	O K
5760 min Summer	66.819	1.019	0.9	370.8	O K


Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
15 min Summer	102.143	0.0	57.8	638
30 min Summer	66.066	0.0	52.7	1068
60 min Summer	40.995	0.0	104.8	1308
120 min Summer	26.040	0.0	114.0	1588
180 min Summer	19.483	0.0	118.3	1754
240 min Summer	15.678	0.0	120.7	1872
360 min Summer	11.348	0.0	122.9	2038
480 min Summer	8.940	0.0	123.5	2162
600 min Summer	7.404	0.0	123.4	2264
720 min Summer	6.335	0.0	122.9	2358
960 min Summer	4.940	0.0	121.3	2526
1440 min Summer	3.476	0.0	116.7	2836
2160 min Summer	2.467	0.0	248.1	3284
2880 min Summer	1.949	0.0	242.3	3728
4320 min Summer	1.422	0.0	226.9	4636
5760 min Summer	1.153	0.0	474.1	5760

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Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230925 Basin South 30yr +35cc.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
7200 min Summer	66.828	1.028	0.9	375.3	O K
8640 min Summer	66.840	1.040	0.9	381.5	O K
10080 min Summer	66.854	1.054	0.9	388.9	O K
15 min Winter	66.063	0.263	0.7	69.6	O K
30 min Winter	66.174	0.374	0.7	103.9	O K
60 min Winter	66.282	0.482	0.7	140.6	O K
120 min Winter	66.412	0.612	0.7	188.8	O K
180 min Winter	66.481	0.681	0.7	215.8	O K
240 min Winter	66.524	0.724	0.7	233.7	O K
360 min Winter	66.576	0.776	0.8	255.8	O K
480 min Winter	66.607	0.807	0.8	269.5	O K
600 min Winter	66.628	0.828	0.8	279.2	O K
720 min Winter	66.644	0.844	0.8	286.5	O K
960 min Winter	66.667	0.867	0.8	297.0	O K
1440 min Winter	66.697	0.897	0.8	310.7	O K
2160 min Winter	66.729	0.929	0.8	325.9	O K
2880 min Winter	66.753	0.953	0.8	338.0	O K
4320 min Winter	66.794	0.994	0.9	358.0	O K
5760 min Winter	66.821	1.021	0.9	372.0	O K
7200 min Winter	66.831	1.031	0.9	376.7	O K
8640 min Winter	66.837	1.037	0.9	380.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
7200 min Summer	0.990	0.0	468.6	6608
8640 min Summer	0.880	0.0	458.3	7344
10080 min Summer	0.802	0.0	444.3	8104
15 min Winter	102.143	0.0	57.8	639
30 min Winter	66.066	0.0	52.7	1067
60 min Winter	40.995	0.0	104.8	1308
120 min Winter	26.040	0.0	114.1	1586
180 min Winter	19.483	0.0	118.4	1754
240 min Winter	15.678	0.0	120.8	1870
360 min Winter	11.348	0.0	122.9	2036
480 min Winter	8.940	0.0	123.6	2158
600 min Winter	7.404	0.0	123.5	2260
720 min Winter	6.335	0.0	123.0	2352
960 min Winter	4.940	0.0	121.4	2520
1440 min Winter	3.476	0.0	116.8	2828
2160 min Winter	2.467	0.0	248.3	3280
2880 min Winter	1.949	0.0	242.5	3716
4320 min Winter	1.422	0.0	227.3	4620
5760 min Winter	1.153	0.0	474.7	5664
7200 min Winter	0.990	0.0	469.5	6752
8640 min Winter	0.880	0.0	459.6	7480

Stantec UK Ltd		Page 3
Caversham Bridge House Waterman Place Reading, RG1 8DN	332511125 Land at Stebbing Basin South	
Date 25/09/2023 09:16 File 332511125_Stebbing Plot...	Designed by eedney Checked by DB	
Innovyze	Source Control 2020.1	

Cascade Summary of Results for 230925 Basin South 30yr +35cc.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m ³)	Status
10080 min Winter	66.848	1.048	0.9	385.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Time-Peak (mins)
10080 min Winter	0.802	0.0	446.1	8232